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MEMORANDUM FOR DISTRIBUTION C
MAJCOMs/FLDCOMs/FOAs/DRUs

FROM: HQ USAF/SG3/4
7700 Arlington Blvd
Falls Church, VA 22042

SUBJECT: Department of the Air Force Guidance Memorandum (DAFGM) to Department of the Air Force Manual (DAFMAN) 40-201, *Radioactive Materials (RAM) Management*.

By Order of the Secretary of the Air Force, this Department of the Air Force Guidance Memorandum immediately redesignates AFMAN 40-201, *Radioactive Materials (RAM) Management*, as a Department of the Air Force Manual (DAFMAN) and implements changes to reflect updated policy to maintain compliance with Nuclear Regulatory Commission requirements. Compliance with this Memorandum is mandatory. To the extent its directions are inconsistent with other Department of the Air Force publications, the information herein prevails, in accordance with Air Force Instruction (DAFI) 90-160, *Publications and Forms Management*.

This publication applies to civilian employees and uniformed members of the Regular Air Force, United States Space Force, Air Force Reserve and Air National Guard. Specific changes are listed in the attachment; the paragraphs listed replace or update the corresponding paragraphs within AFMAN 40-201.

The Memorandum becomes void after one-year has elapsed from the date of this Memorandum, or upon incorporation of an Interim Change to, or rewrite of DAFMAN 40-201, whichever is earlier.

ROBERT I. MILLER
Lieutenant General, USAF, MC, SFS
Surgeon General

Attachment:
Guidance Changes

Attachment
Guidance Changes

The below changes to AFMAN 40-201, dated 29 March 2019, are effective immediately.

(Added) 2.3.7.14.21. Execute and document administrative approval of corrective active plans (CAPs) for findings levied against USAF permittees. **(T-1)**

(Added) 2.3.7.14.22. Maintain authority to perform on-site validation of CAPs and officially close previous Air Force Inspection Agency (AFIA) or NRC findings levied against USAF permittees. Closure of findings will be documented via official memorandum and sent to AFIA for closure in their tracking system. **(T-1)**

(Added) 2.5.3. Ensure the qualified health physicist inspector validates adequacy of CAPs for previous findings during routine and non-routine USAF permit and 91(b) inspections. The inspector will verify closure of active findings or identify further actions required for compliance through on-site visits unless it is strictly an administrative finding that can be verified virtually. Status of previous findings from the most recent inspection will be documented in the final inspection report. **(T-1)**

(Changed) 6.2.8.1. Closure: upon receipt of a response to the violation from the Permittee, the RICS shall consider the merit of the corrective actions and, if satisfied, administratively close out the deficiency. The AFIA RAM inspector will officially close violations in the Inspector General Management Evaluation System following verification of CAPs being completed. **(T-1)**

(Changed) 6.2.8.2. Non-Closure: if the RICS or RAM Inspector determines implemented corrective actions are not acceptable to close the violations, enforcement actions may be taken according to paragraph 6.3. Enforcement actions shall be submitted to the Permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG. **(T-1)**

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE MANUAL 40-201

29 MARCH 2019



Medical Command

**RADIOACTIVE MATERIALS (RAM)
MANAGEMENT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-Publishing.af.mil.

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(Maj Gen Robert I. Miller)

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This manual implements Air Force Policy Directive (AFPD) 40-2, *Radioactive Materials (Non-Nuclear Weapons)* in accordance with and supports the conditions of the US Air Force Master Materials License (MML) issued by the US Nuclear Regulatory Commission (NRC) and managed by the United States Air Force Radioisotope Committee (RIC). It applies to all US Air Force (USAF) personnel including members of the Air Force Reserve and Air National Guard. It instructs personnel on procedures for the acquisition, receipt, security, use, storage, transfer, transport, distribution, and disposal of all radioactive material (RAM) in the USAF. Civilian USAF employees are subject to administrative disciplinary action, in addition to any applicable criminal or civil sanctions for the violation of requirements and prohibitions contained in this manual. This manual requires the collection and/or maintenance of information protected by Title 5 United States Code Section 552a, *Privacy Act of 1974*, authorized by Title 10 Code of Federal Regulations (CFR), Section 20.2106, *Records of Individual Monitoring Results* and Title 29 CFR Section 1910.1096(b), *Exposure of Individuals to Radiation in Restricted Areas*, Title 29 CFR Section 1910.1096(n), *Records*, and Title 29 CFR Section 1910.1096(o), *Disclosure to Former Employee of Individual Employee's Record*. The applicable SORN F044 AF SG O, *United States Air Force Master Radiation Exposure Registry* (November 18, 2003, 68 FR 65042) is available at <http://dpclo.defense.gov/Privacy/SORNs.aspx>. Ensure that all records created because of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule in the Air Force Records Information Management System. Refer

recommended changes and questions about this publication to the Office of Primary Responsibility using the AF Form 847, *Recommendation for Change of Publication*, route AF Forms 847 from the field through the appropriate functional chain of command to the Air Force Medical Support Agency (AFMSA)/Bioenvironmental Engineering Division, 7700 Arlington Blvd., Falls Church, VA 22041. This publication may be supplemented at any level, but direct Supplements must not contain conflicting material or less restrictive guidance. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See Air Force Instruction (AFI) 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the publication Office of Primary Responsibility for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

Due to substantial revision, complete review of this document is required. The document is streamlined to remove non-directive content. Major changes include using Inspector General Management Evaluation System for radioactive material permit inspections and clarification or updates on: radioactive material remediation process, management of generally licensed devices, required use of the Radioactive Material Management Information System (RAMMIS), requirements for installation level radiation policy, and training requirements.

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Chapter 1

PROGRAM OVERVIEW

1.1. Overview.

1.1.1. This manual provides uniform instruction and guidance for the management and control of radioactive material (RAM) in the USAF. It sets forth how USAF personnel or units manage the utilization of all RAM not expressly excluded from the purview of this manual; this includes: acquisition, use, storage, security, receipt, transfer, transportation, distribution, and disposal. This manual also prescribes how non-USAF entities get approval to use, store, and transport RAM on USAF installations. Workers using radioactive material should focus on [paragraph 2.18](#) for their individual requirements.

1.1.2. Applicability. RAM covered by this manual includes, without limitation, any licensable RAM, as defined by Title 10 Code of Federal Regulations (CFR) Chapter I, *Nuclear Regulatory Commission*, which applies to the USAF and for other RAM as described in this manual.

1.1.3. Objectives. The objectives of this manual are to provide guidance to establish, implement, and ensure a unified approach for managing, safeguarding, and authorizing the utilization of RAM on USAF installations.

1.2. Regulatory Authority for Radioactive Materials (RAM). This manual implements NRC requirements across the USAF. It also sets requirements for USAF-owned RAM not under the jurisdiction of the US Nuclear Regulatory Commission (NRC).

1.2.1. US Nuclear Regulatory Commission (NRC) Regulatory Authority. The NRC is the primary regulatory authority for USAF utilization of RAM in the US. The Atomic Energy Act (AEA) of 1954 (42 United States Code Sections 2011-2021, 2022-2286i, and 2296a-2297h-13), as amended (including Public Law 109-58, *Energy Policy Act of 2005* and the Public Law 93-438, *Energy Reorganization Act of 1974*), grant the NRC the authority to regulate byproduct material, discrete naturally-occurring and accelerator-produced radioactive material (NARM), source material, and special nuclear material (SNM) for peaceful applications in accordance with Title 42 United States Code (U.S.C.) Section 2011, *Congressional Declaration of Policy*, et seq. This authority does not extend to material described in AEA Section 91, or Title 42 U.S.C. Section 2121, *Authority of Commission*.

1.2.1.1. NRC authority extends across the US, its possessions and territories. For regulations issued and enforced by the NRC, reference 10 CFR, Chapter I.

1.2.1.2. The NRC maintains regulatory authority over Federal agency licensees regardless of location within the United States.

1.2.2. USAF Regulatory Authority:

1.2.2.1. Authority for USAF receipt, storage, internal distribution, use, transfer, and disposal of byproduct, discrete NARM, source, and limited quantities of SNM is granted through a Master Materials License (MML) issued to the USAF by the NRC. This manual prescribes requirements for USAF compliance with the MML and other applicable regulatory requirements.

1.2.2.2. The USAF also maintains authority over the use of RAM by non-USAF organizations on USAF installations where exclusive Federal jurisdiction exists. This manual requires USAF personnel, usually the installation radiation safety officer (IRSO), to coordinate with tenant organizations operating under a non-USAF permit, NRC license, or Department of Energy (DOE) license exemption on legal documentation, location, quantity and movement onto and across USAF-occupied real estate for RAM exceeding NRC exempt quantities and not falling under the AEA.

1.2.2.3. This manual does not, unless specifically stated, apply to nuclear reactor programs, nuclear weapons systems or waste, or other RAM controlled under Section 91 of the AEA, or 42 U.S.C. §2121. These items are governed by AFPD 91-1, *Nuclear Weapons and Systems Surety*, AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(b) Radioactive Material Safety Program*, AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, and subordinated instructions managed through the Air Force Safety Center (AFSEC).

1.2.3. Authority in locations outside of the US and its territories. The requirements in this manual apply for locations outside the US, so long as the requirements do not conflict with applicable requirements from any of the following: international agreements, the Overseas Environmental Baseline Guidance Document, country-specific Final Governing Standards, Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive. International Atomic Energy Agency (IAEA) Safety Standards and other publications may be considered where appropriate. USAF RAM use and activities outside the US are detailed in [paragraph 3.1.10](#).

1.2.4. Resource Conservation and Recovery Act (RCRA). RCRA authorizes the Environmental Protection Agency (EPA) to develop and enforce regulations governing the cradle to grave management of hazardous waste, to include Low-Level Mixed Waste (LLMW), Low-Level Radioactive Waste (LLRW), and Mixed Waste (MW). These regulations are found in Title 40 of the Code of Federal Regulations (40 CFR) Chapter I, *Environmental Protection Agency*. For purposes of RCRA, take note of the following definition: Low-Level Mixed Waste (LLMW) is waste that contains both low-level radioactive waste and RCRA hazardous waste. Low-Level Radioactive Waste (LLRW) is a radioactive waste which contains source, special nuclear, or byproduct material and is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material. Mixed Waste (MW) means waste that contains both RCRA hazardous waste and source, special nuclear, or byproduct material.

1.2.4.1. Conditional exemptions from RCRA for LLMW are provided under Title 40 CFR Part 266, Subpart N, *Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation, and Disposal*.

1.2.4.2. Solid low level radioactive waste (LLRW) includes quantities of byproduct, source and SNM. They also may contain NARM, and they too may fall within the definition of hazardous waste as set out in Title 40 CFR Part 261, *Identification and Listing of Hazardous Waste*.

1.2.4.3. Waste that contains both AEA-regulated RAM and hazardous waste (as defined by 40 CFR Part 261) is termed mixed waste.

1.2.4.3.1. Mixed waste is subject to dual regulation under EPA and NRC rules.

1.2.4.3.2. Neither agency has exclusive jurisdiction over mixed waste under current Federal law.

1.2.5. Clean Air Act. The Clean Air Act gives the EPA authority over non-NRC regulated radionuclide emissions from Federal facilities in accordance with Title 40 CFR Part 61, Subpart I, *National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees Not Covered by Subpart H*. The NRC regulates air emissions from NRC licensed Federal facilities in accordance with Title 10 CFR Section 20.1101, *Radiation Protection Programs*. Organizations that generate emissions fall under the authority of both NRC and EPA rules. For guidance on complying with EPA air emission standards, refer to AFD 32-70, *Environmental Quality*, and AFI 32-7040, *Air Quality Compliance and Resource Management*.

1.2.6. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLA, see Title 42 United States Code, Chapter 103, *Comprehensive Environmental Response, Compensation, and Liability*, establishes prohibitions and requirements, under the EPA, concerning closed and abandoned hazardous waste sites. The CERCLA also provides for liability of persons responsible for releases of hazardous waste at these sites, through the EPA.

1.2.7. Emergency Planning and Community-Right-To-Know-Act (EPCRA). EPCRA, see Title 42 United States Code, Chapter 116, *Emergency Planning and Community-Right-To-Know*, requires that whenever a reportable quantity of a CERCLA hazardous substance leaves installation boundaries, the State Emergency Response Commission and Local Emergency Planning Committee must be notified immediately (40 CFR Part 355, *Emergency Planning and Notification*). EPCRA is not applicable to federal facilities however, the USAF complies with EPCRA, as directed by Executive Order 13834 (May 22, 2018).

1.2.8. Transportation of Hazardous Material (HAZMAT). The Department of Transportation specifies requirements for marking, labeling, shipping documents, containers, and other requirements when shipping or transporting HAZMAT, including RAM, in accordance with 49 CFR, Subtitle B, Chapter I, *Pipeline and Hazardous Materials Safety Administration*. In the USAF, the logistics (A4) community ensures the appropriate handling, packaging and certification of RAM shipments in accordance with Defense Transportation Regulations (DTR) 4500.9-R-Part II, Chapter 204, *Hazardous Material*, and Chapter 208, *Packaging and Handling*; AFMAN 24-210, *Package of Hazardous Material*; Air Force Joint Instruction (AFJI) 23-504, *Radioactive Commodities in the DoD Supply System*; Air Force Joint Manual (AFJMAN) 23-209, *Storage and Handling of Hazardous Materials*; AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*; and International Air Transport Association (IATA), *Dangerous Goods Regulation*. IAEA Safety Standards, including *Regulations for the Safe Transport of Radioactive Material*, and other publications may be considered where appropriate.

1.3. Radioactive Material Licensing Categories.

1.3.1. Specifically Licensed RAM. NRC requires a specific license for possessions and use of byproduct, source, and SNM in accordance with 10 CFR Chapter I. All RAM utilized by the AF which would be subject to NRC licensing are required to be permitted under the MML.

1.3.2. Generally Licensed Devices (GLDs). The NRC provides a general license for the possession and use of byproduct material contained in certain devices in accordance with Title 10 CFR Part 31, *General Domestic Licenses for Byproduct Material*. Most GLDs utilized in the USAF do not require a permit to be issued under the MML.

1.3.3. Exempted RAM. Certain concentrations or quantities of RAM are exempt from specific and general licensing requirements of the NRC. USAF units/organizations have restrictions on the disposition of exempt quantities of RAM, as detailed in this manual and 10 CFR Part 30, *Rules for General Applicability to Domestic Licensing of Byproduct Material*.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. The Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE) shall:

- 2.1.1. Appoint one voting representative and one alternate from SAF/IEE to the USAF Radioisotope Committee (RIC).
- 2.1.2. Execute radiation safety and radioactive materials management duties as outlined in Headquarters Air Force Mission Directive 1-18, *Assistant Secretary of the Air Force (Installations, Environment and Energy)*.
- 2.1.3. Provide financial assurance to the USAF RIC Secretariat (RICS) for submittal to the NRC on all applicable USAF decommissioning activities, in accordance with Title 10 CFR Sections: 30.35, *Financial Assurance and Recordkeeping for Decommissioning*, 30.36, *Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas*, 40.36, *Financial Assurance and Recordkeeping for Decommissioning* and 70.25, *Financial Assurance and Recordkeeping for Decommissioning*.

2.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ) shall:

- 2.2.1. Appoint one voting representative, and one alternate, to the RIC, from the Systems Engineering Division, with expertise in environmental, safety, and occupational health and human systems integration.
- 2.2.2. Ensure Acquisition Program Managers coordinate approval with the RICS, prior to acquisition of new systems and upgrades that contain RAM prior to fielding in the USAF.

2.3. The Surgeon General of the Air Force (AF/SG) shall:

- 2.3.1. On behalf of the Department of the Air Force, manage the control of RAM within the purview of this manual and the MML.
- 2.3.2. Maintain and sustain the RIC and the RICS within the AFMSA Bioenvironmental Engineering (AFMSA/SG3PB) Radiation Health function, under the Assistant Surgeon General, Health Care Operations (AF/SG3/5), to provide oversight for use of RAM in the USAF as required by the MML.
- 2.3.3. Direct AF/SG3/5 to appoint to the RIC a Chair and alternate Chair from the AF Medical Support Agency's Aerospace Medicine Division (AFMSA/SG3P), the health physics and medical physics consultants, and a member and an alternate from the Occupational and Environmental Health function of AFMSA/SG3PB as voting representatives.
- 2.3.4. In coordination with the Air Force Inspection Agency (AFIA), provide for inspections prescribed by this manual to evaluate risk-based performance and compliance with permits issued by the RICS.
- 2.3.5. Authorize, empower, and provide required resources to the RIC and RICS to protect the interests of the MML and remain in compliance with applicable NRC and other Federal regulations, Department of Defense (DoD) instructions, and applicable guidance documents including taking enforcement action against RAM permittees, if needed.

2.3.6. The Assistant Surgeon General, Health Care Operations (AF/SG3/5), shall:

2.3.6.1. Provide operational control over the RICS, as a duty of the Radiation Health function of the AFMSA, to work on behalf of the RIC in providing functional oversight of non-nuclear weapons related RAM use in the USAF.

2.3.6.2. Chair, or delegate a chair and alternate chair to the RIC. Authorize the Chief of the RICS to act in the Chairperson's absence.

2.3.6.3. Appoint the health physics and medical physics consultants and alternates as a voting representatives from the Radiation Health function of AFMSA/SG3PB to the RIC.

2.3.6.4. Appoint one voting representative and one alternate from the Occupational and Environmental Health function of AFMSA/SG3PB to the RIC.

2.3.6.5. Ensure the delegation of authority for assuring RAM management in accordance with 10 CFR Chapter I and the MML, from the Secretary of the Air Force to AF/SG and the RIC, is fully and accurately reflected in AFD 40-2 and Headquarters Air Force Mission Directive 1-48, *The Air Force Surgeon General*.

2.3.7. The Air Force Radioisotope Committee (RIC) shall:

2.3.7.1. Provide direction for USAF utilization of radioactive material (RAM) and shall grant to the RICS authority to conduct business consistent with applicable and relevant Federal, DoD and USAF policy, regulations, and guidance in accordance with the MML.

2.3.7.2. Serve, through the RICS, as the USAF single point of contact for the MML.

2.3.7.3. Recommend policies to AF/SG3/5 for keeping exposure from approved uses of RAM As Low As is Reasonably Achievable (ALARA) but always below regulatory limits as promulgated in Title 10 CFR Part 20, *Standards for Protection Against Radiation*.

2.3.7.4. Serve, through the RICS, as the USAF single point of contact with the Conference of Radiation Control Program Directors and its licensing states for issues pertinent to the MML. Similarly, serve as the single point of contact with Agreement States.

2.3.7.5. Direct and adjudicate enforcement actions when such actions are required to protect persons or property or maintain compliance with permit and MML conditions.

2.3.7.6. Identify new or special inspection needs and coordinate with AFIA/SG.

2.3.7.7. Review unique actions and permit requests referred by the RICS.

2.3.7.8. Review and advise on special situations involving RAM as requested by the RICS, Air Staff, or Major Commands.

2.3.7.9. Meet as agreed upon with the NRC. Convene ad hoc or emergency meetings to discuss matters requiring timely actions.

2.3.7.10. Publish and make available, minutes of meetings to all committee members, or others, as appropriate.

2.3.7.11. Provide final ruling on the interpretation of this manual and permits affecting compliance with the MML.

2.3.7.12. Provide final resolution for any allegations concerning the safe and regulatory compliant use of RAM in the USAF.

2.3.7.13. Periodically update RIC membership and business practices as identified in RIC standard operating procedures, RIC minutes, and this manual.

2.3.7.14. The Chief, Air Force Radioisotope Committee Secretariat (RICS) shall:

2.3.7.14.1. Serve as the single point of contact between the RIC, the NRC, and/or Agreement States for all issues associated with the MML. Assists, when requested, in any transactions involving installations outside of the US and overseas permitted activities that also entail attention to host nation requirements.

2.3.7.14.2. Develop and implement policy, in coordination with the RIC, to acquire, receive, possess, use, distribute, store, transport, transfer, and dispose of or otherwise manage RAM in the USAF, consistent with applicable Federal, DoD and USAF policy, regulations, and guidance and in accordance with the MML.

2.3.7.14.3. Serve as the office of record for all documentation required to be maintained in accordance with 10 CFR Chapter I and the MML.

2.3.7.14.4. Review, for approval or denial, USAF permit applications, renewals, amendments and other requests for the possession and/or use of RAM under the authority of the RIC.

2.3.7.14.5. Certify individuals are qualified by training, education, and experience to serve as Permit Radiation Safety Officers, be designated an Authorized Users (in accordance with Title 10 CFR Part 35, *Medical Use of Byproduct Material*), or provide audit services for medical permits.

2.3.7.14.6. Regulate the remediation of all radioactive material sites containing RAM under the purview of this manual.

2.3.7.14.7. Coordinate with AFSEC/SEW on issues involving the licensing of certain RAM including aerospace and space power.

2.3.7.14.8. Provide permit documentation to AFIA/SG.

2.3.7.14.9. Provide interpretation of this manual and permits affecting compliance with the MML and USAF policy.

2.3.7.14.10. Conduct pre-permitting visits and direct investigations of RAM incidents and mishaps, as deemed necessary.

2.3.7.14.11. Implement RIC decisions. The Chief, RICS is the executive agent for all business associated with the MML. This includes providing interpretation and setting measures to ensure compliance with applicable NRC and Federal regulations, policy, and/or guidance.

2.3.7.14.12. Independently conduct USAF RAM permit reviews as deemed appropriate by the RICS.

2.3.7.14.13. Implement enforcement actions in accordance with [paragraph 6.3](#) of this manual. These may include Notices of Violations (NOVs), and revocation and termination orders to protect persons, property, or to maintain MML compliance.

2.3.7.14.14. Exercise the authority to temporarily exempt a Permittee from any requirement of this manual, provided the exemption does not conflict with NRC policy or Federal regulations.

2.3.7.14.15. Exercise the authority to impose policy or permit requirements more stringent than NRC policy or Federal regulations.

2.3.7.14.16. Submit the annual USAF inventory of NRC-regulated SNM to the Nuclear Material Management & Safeguards System in accordance with Title 10 CFR Section 74.13, *Material Status Reports*, before 31 March of each year.

2.3.7.14.17. Submit a SNM Transaction Report to the Nuclear Material Management & Safeguards System within timeframes required by Title 10 CFR Section 74.15, *Nuclear Material Transaction Reports*.

2.3.7.14.18. Submit the National Source Tracking Transaction Report to the National Source Tracking System within timeframes required Title 10 CFR Section 20.2207, *Reports of Transactions Involving Nationally Tracked Sources*.

2.3.7.14.19. Submit the USAF annual inventory of Category 1 and 2 nationally tracked sources to the National Source Tracking System, in accordance with 10 CFR §20.2207, by 31 January of each year.

2.3.7.14.20. Coordinate with SAF/IE for signature on financial assurances, related to all USAF decommissioning and permitted activities; and submit to the NRC in accordance with 10 CFR Part 30, Title 10 CFR Part 40, *Domestic Licensing of Source Material*, and Title 10 CFR Part 70, *Domestic Licensing of Special Nuclear Material*.

2.3.8. **The Commander, Air Force Medical Support Agency (AFMSA) shall:** provide administrative control and support for a Radiation Health function for the establishment and implementation of AF Medical Service policy on all RAM.

2.4. The Deputy Chief of Staff for Logistics, Engineering, and Force Protection (AF/A4) shall:

2.4.1. Appoint one voting representative and one alternate from among the staff of AF/A4L, AF/A4C or AF/A4S to the RIC who can represent civil engineering, logistics readiness, security forces, and aircraft and missile maintenance.

2.4.2. Coordinate on civil engineering, logistics readiness, security forces, and aircraft and missile maintenance policies dealing with RAM covered by this manual.

2.4.3. Provide guidance to Air Force Material Command on the logistical management of items containing RAM.

2.4.4. Maintain a USAF Radioactive Waste Site Registry.

2.4.5. Direct USAF-wide RAM transportation in accordance with, 49 CFR Chapter I, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, IATA; and this manual.

2.4.6. Support the implementation of safety and security measures which in addition to general radiation protection shall include the timely reporting of defects and noncompliance in accordance with Title 10 CFR Part 21, *Reporting of Defects and Noncompliance*, as well as

the physical protection of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and/or quantities of radioactive materials requiring an emergency plan for responding to a release (such as “toxic industrial radiologicals”, as listed in Title 10 CFR Part 37 Appendix A, *Category 1 and Category 2 Radioactive Materials*, Title 10 CFR Part 20 Appendix E, *Nationally Tracked Source Thresholds*, and Title 10 CFR Section 30.72, Schedule C, *Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release*, respectively).

2.4.7. Ensure local mission support, security, and maintenance personnel will work with Permit Radiation Safety Officer (PRSO) and the Installation Radiation Safety Officer (IRSO) who will in turn interface with the RICS which will in turn interface with the NRC as required.

2.5. The Commander, Air Force Inspection Agency (AFIA), on behalf of The Inspector General (SAF/IG), shall:

2.5.1. Appoint one voting representative to the RIC from AFIA/SG (T-1) and can appoint an alternate. Resources and prioritizes inspections according to this manual and in coordination with the RICS and NRC. (T-1).

2.5.2. Maintain a staff qualified health physicist (43E4G) with appropriate NRC training and security clearance, to conduct USAF RAM permit and Section 91(b) inspections. (T-1).

2.6. The Chief, Weapons Safety Division (AFSEC/SEW), on behalf of The Chief of Safety (AF/SE), shall appoint one voting representative and one alternate from AFSEC/SEW to the RIC to advise on RAM control issues relative to AEA Section 91 materials, for consistent control of RAM within the USAF, in accordance with AFPD 91-1, AFI 91-108 and AFI 91-110. (T-1).

2.7. The Commander, Air Force Legal Operations Agency (AFLOA), on behalf of The Judge Advocate General (AF/JA), shall:

2.7.1. Appoint one non-voting legal advisor and one alternate from AFLOA/JAC to the RIC. (T-1).

2.7.2. Coordinate on legal issues involving RAM, including internal and external enforcement matters, and acts as counsel to the RIC. (T-1).

2.8. Major Commands (MAJCOM):

2.8.1. The Commander, Air Force Materiel Command (AFMC/CC), shall:

2.8.1.1. Establish a radioactive waste program office to oversee all radioactive and mixed waste disposition activities in the USAF. **Note:** The Air Force Radioactive Recycling and Disposal (AFRRAD) Office satisfies this requirement, see [paragraph 2.8.1.7.3](#).

2.8.1.2. Program and advocate funding for radioactive waste management.

2.8.1.3. Maintain the capability to oversee and coordinate USAF recycling of radioactive material (RAM) where appropriate and cost effective.

2.8.1.4. Ensure all RAM, including waste products, subject to 10 CFR Chapter I and/or 40 CFR Part 261, are identified as early as practical in the procurement and/or development process.

2.8.1.5. Coordinate with the RIC on unique conditions requiring variances to the MML involving the USAF radioactive waste program and recycling of USAF RAM.

2.8.1.6. The Commander, 711th Human Performance Wing, shall:

2.8.1.6.1. Appoint one voting representative and one alternate from USAF School of Aerospace Medicine (USAFSAM) to the RIC. **(T-1).**

2.8.1.6.2. Support Major Commands and installations by maintaining and providing National Voluntary Laboratory Accreditation Program-accredited radiation dosimetry services through the USAF Dosimetry Center, comprehensive radio-analytical capabilities, and health physics consultative services. **(T-1).**

2.8.1.6.3. Provide quarterly and annual summaries of occupational radiation exposure, from RAM, to the RIC. **(T-1).**

2.8.1.6.4. Provide technical and on-site health physics support to the RIC, RICS and AFSEC/SEW to prevent, investigate and mitigate human exposure or environmental contamination from RAM. **(T-1).**

2.8.1.7. The Commander, 88th Air Base Wing (88 ABW/CC), shall:

2.8.1.7.1. Appoint one voting representative and one alternate to the RIC from the Air Force Radioactive Recycling and Disposal (AFRRAD) Office. **(T-1).**

2.8.1.7.2. Appoint a member to the DoD Disposition Advisory Committee. **(T-1).**

2.8.1.7.3. Sustain the AFRRAD to support, and oversee as necessary, USAF radioactive and mixed waste disposition activities. **(T-1).** This office shall:

2.8.1.7.3.1. Provide technical consultation for all radioactive waste activities to include decommissioning and/or remediation of radiological waste burial sites or contaminated facilities. **(T-1).**

2.8.1.7.3.2. Coordinate radioactive waste disposal, other than decontamination and decommissioning projects; among USAF activities, the DoD Executive Agent, disposal contractors, and disposal site operators, in accordance with **Chapter 4**. **(T-1).**

2.8.1.7.3.3. Provide consultative support on package and transport of radioactive waste for disposal according to Title 10 CFR Part 71, *Packaging and Transportation of Radioactive Material*, 49 CFR Chapter I, Subchapter C, *Hazardous Materials Regulations*, 40 CFR Part 261 et seq., (for mixed waste) and all applicable disposal site rules. **(T-1).**

2.8.1.7.3.4. Provide quarterly summaries of radioactive waste disposal, waste specific issues for decontamination, and decommissioning activities to the RIC or AFSEC/SEW as appropriate. **(T-1).**

2.8.1.7.3.5. Maintain all records of radioactive waste transferred for disposal in accordance with guidance at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm> and 10 CFR Part 30. **(T-1)**

2.8.1.7.3.6. Implement billing procedures in accordance with AFI 65-601, Volume 1, *Budget Guidance and Procedures*, to allow funded activities to plan, program, and fund the cost of contracted services for the disposition of generated RAM and

waste. (T-1).

2.8.2. Major Command Bioenvironmental Engineers shall:

2.8.2.1. Receive, review and forward documents and reports as required by this and other AFIs/manuals in support of RAM management, security, environmental quality, safety and occupational health.

2.8.2.2. Advocate support for the installation bioenvironmental engineering and IRSO at the MAJCOM-level for the implementation of this and related AFIs/manuals.

2.8.2.3. Coordinate Environmental, Safety, and Occupational Health Council (ESOHC) functional support for AF permittees and IRSOs in the MAJCOM who do not have access to an ESOHC at their installation (e.g. Joint Base, forward operating base, geographically separated unit, etc.).

2.8.2.4. Coordinate, consult on, and/or fulfill IRSO responsibilities for AF permittees or other AF users of RAM in the MAJCOM when there is no IRSO because of Joint Basing, forward basing, geographical separation, etc.

2.9. The Installation Commander or AF Wing Commander (non-AF led Joint Base) shall:

2.9.1. Enforce compliance with this manual and all applicable federal regulations for permitted radioactive material (RAM) and Generally Licensed Devices (GLDs). (T-0).

2.9.2. Delegate authority in writing to the IRSO to suspend installation operations involving RAM that pose a significant health risk to personnel or the general public, present a clear violation of regulations or requirements, or present a high risk of negative impact to USAF operations, materiel, or real estate. (T-1).

2.9.2.1. If on a non-AF led Joint Base, overall IRSO responsibilities shall fall to the host unit per the host service's guidelines. (T-0).

2.9.2.2. The AF Wing Commander (non-AF led Joint Base), shall delegate this authority in writing to a Wing Radiation Safety Officer (RSO) for Wing personnel and operations. (T-1).

2.9.2.3. IRSO/Wing RSO appointments will be made in accordance with AFI 48-148, *Ionizing Radiation Protection*. (T-1).

2.9.3. Provide required resources and access to all activities governed by this manual to the IRSO to maintain compliance with this manual and applicable Federal, DoD, and AF regulations and/or directives. (T-1).

2.9.4. Establish specific written policies, through IRSO, for the execution of all applicable AFIs/manuals and federal regulations concerning the management and utilization of RAM on the installation (e.g. policy memos, instructions, AFI/AFMAN supplements, etc.). (T-3).

2.9.5. Prohibit the receipt or transfer of RAM (including RAM in classified operations) without prior coordination and/or approval by the IRSO. (T-1).

2.9.6. Ensure the IRSO is notified of all activities pertaining to radioactive waste or radioactive waste burial sites. (T-1).

2.9.7. Ensure the IRSO briefs the internal audit of all RAM permits annually at the Environment, Safety, and Occupational Health Council (ESOHC). **(T-1)**.

2.9.8. Ensure personnel in the logistics readiness squadron, civil engineering squadron, and all other USAF personnel engaged in any aspect of the disposition, transportation, or shipment of HAZMAT, including RAM are fully trained for duties performed in accordance with DTR 4500.9-Part II Chapters 204 and 208, AFJI 23-504, and AFMAN 24-204. **(T-0)**.

2.9.9. Ensure the implementation of safety and security measures at the installation level, which may be required for certain types of permitted RAM located on the installation; this may include response capabilities, surveillance, and monitoring. **(T-0)**.

2.9.10. Ensure all NRC specifically licensed RAM, GLDs, RIC permitted RAM, and any other type of RAM specified by the RIC which is utilized by DoD activities and organizations or in facilities for which the installation commander is responsible is accurately inventoried in the Radioactive Material Management Information System (RAMMIS), unless otherwise stated in this manual. **(T-1)**.

2.9.11. Sustain leases on properties where permitted RAM is located until such time as the RICS terminates the permit. **(T-0)**.

2.9.12. The Installation Radiation Safety Officer (IRSO) shall:

2.9.12.1. Serve as approval authority for the utilization of all RAM on USAF installations, including those from non-USAF organizations and contractors. **(T-1)**.

2.9.12.2. Serve as technical subject matter expert to commanders regarding RAM use on the installation as governed by all applicable local, state, federal regulations and guidance. **(T-1)**.

2.9.12.3. Provide RAM identification, detection, and measurement capabilities to permittees and commanders as needed. **(T-3)**.

2.9.12.4. Support host and tenant organizations requesting to utilize RAM which may require a permit to be issued under the MML. **(T-1)**.

2.9.12.5. Develop and maintain specific written policies for the execution of all applicable AFIs/manuals and federal regulations concerning the management and utilization of RAM on the installation (e.g. installation-level policy memos, instructions, or AFI/AFMAN supplements, etc.). **(T-3)**.

2.9.12.5.1. Annually review the installation policies regarding RAM. **(T-3)**.

2.9.12.5.2. For an AF-led Joint Base or Joint Operation, the policies must be signed by each co-located service component commander in addition to the installation commander. **(T-1)**.

2.9.12.6. Consult with and provide requiring activities with information necessary to develop a Performance Work Statement/Statement of Work for compliance with all applicable statutes, regulations and instructions for managing RAM in the USAF including [paragraph 2.19.2.](#), and provide contracting officers information necessary to ensure appropriate award selection criteria are included in the solicitation (based on guidance and information from the NRC, Sealed Source and Device Registry (SSDR), RICS, USAFSAM, etc.). **(T-3)**. **Note:** requiring activities may have to request this consultation.

2.9.12.7. Conduct an annual audit of each RAM permit on the installation. **(T-1).**

2.9.12.8. Brief the ESOHC on the following items:

2.9.12.8.1. GLD inventories – semiannually; **(T-3).**

2.9.12.8.2. Utilization of RAM on the installation by non-USAF organizations and contractors – semiannually; **(T-3).**

2.9.12.8.3. Review any necessary changes to RAM policies on the installation – annually; **(T-3).**

2.9.12.8.4. Incidents/Accident investigations involving RAM – annually; **(T-3).**

2.9.12.8.5. Status of corrective actions associated with deficiencies identified during external RAM inspections or the annual IRSO permit audits – semiannually. **(T-3).**

2.9.12.9. For a Joint Base or geographically separated unit without an ESOHC, the aforementioned briefing items will be provided to the MAJCOM/SGPB to review (with courtesy copies to the Joint Base Safety and HAZMAT management/response functions). **(T-1).**

2.9.12.10. For a Joint Base or geographically separated unit without an IRSO or bioenvironmental engineer, PRSOs will forward signed/dated copies of the annual PRSO permit audit documentation directly to the MAJCOM/SGPB (with courtesy copies to Joint Base safety and hazardous materials management/response functions). **(T-1).**

2.9.12.11. Review all work orders prepared for installation-level actions involving potential to utilize RAM. **(T-3).**

2.9.12.12. Maintain and update, semiannually, RAM inventories in RAMMIS, to include NRC specifically licensed RAM, Generally Licensed Devices (GLDs), RIC permitted RAM, and any other type of RAM specified by the RIC which is utilized by DoD activities and organizations or in facilities for which the installation commander is responsible. **(T-1).**

2.9.12.12.1. RAMMIS is not required to be used to inventory targeting pods; however, the IRSO will obtain a copy of the Reliability, Availability, Maintainability Logistics Support System for Pods (commonly referred to as “RAMPOD”) inventory at an interval not to exceed 6 months. **(T-3).**

2.9.12.12.2. Weapon systems containing strategic SNM or tritium, and the associated waste streams, regulated by 42 U.S.C. § 2121, AFD 91-1, AFI 91-101, *Air Force Nuclear Weapons Surety Program*, and AFI 91-108 are exempt from the RAMMIS inventory requirement.

2.9.12.12.3. Exempt consumer product uses of nuclear materials, certain unimportant quantities of source materials, and certain DOE activities are exempt from the RAMMIS inventory requirement.

2.9.12.13. Serve as the Approval Authority for the use of RAM during installation level military readiness training or exercises which may result in exposures to personnel or the general public. **(T-3).**

2.9.12.14. Assist the Range Operating Authority in the identification and permitting of RAM in targets or target materials. **(T-3)**.

2.9.12.15. Coordinate with AFSEC and the RICS regarding the authority for the utilization of RAM on the installation by DOE or DOE prime contractors. **(T-1)**.

2.9.12.16. Provide the installation's Fire Emergency Services, regardless of service lead, a list of physical locations, quantity, and forms for all non-exempt quantities of RAM on the installation. **(T-3)**.

2.10. The Range Operating Authority shall:

2.10.1. Develop and implement procedures to identify all targets that potentially contain and/or are suspected to contain radioactive material (RAM). **(T-1)**.

2.10.2. Ensure RAM is removed from targets or target materials that potentially contain RAM, unless authorized by a RAM permit, prior to placement on a range. **(T-1)**.

2.10.3. Ensure use of targets or target material known to contain RAM is authorized by an AF RAM Permit. **(T-1)**.

2.11. The Staff Judge Advocate shall:

2.11.1. Assist IRSO in interpreting DoD and AF policy/instructions governing RAM. **(T-3)**.

2.11.2. When overseas, perform legal review(s) of translated copies of host nation laws governing control of RAM used on the installation at the request of the IRSO and determines whether the host nation requirements apply to a given overseas installation via treaty or status of forces agreement, as appropriate. **(T-2)**.

2.11.3. Serve as the legal advisor for claims or potential regulatory violations brought against the installation by Federal agencies or civilian parties. **(T-2)**.

2.12. Acquisition Program Managers shall:

2.12.1. Ensure RAM associated with AF weapons systems are utilized only after obtaining the appropriate authorization under a permit or general license, approval from the RICS, or as otherwise exempted from federal regulations governing RAM. **(T-0)**.

2.12.2. Ensure any product being developed or acquired by the USAF do not contain radium. **(T-1)**.

2.12.3. In coordination with the IRSO and the AFRRAD office, ensure devices containing radium are returned to the manufacturer with consultation, when feasible. **(T-1)**.

2.12.4. Limit the use of RAM where feasible, consistent with USAF needs. **(T-1)**. Justification shall be documented for deciding that non-RAM or less hazardous RAM are not feasible. **(T-1)**. Justification should include an analysis of the disposal costs and life cycle costs (including handling, permitting, storage, shipment and disposal) in any decision to procure items containing RAM. **(T-1)**. Documentation will be maintained by the program office for the duration the material remains in the USAF inventory. **(T-1)**.

2.12.5. Ensure RAM specific environmental, safety, and occupational health considerations are integrated into the Systems Engineering process from the earliest stages of system design. **(T-1)**

2.12.6. Ensure material hazards and risks, from RAM, in a developed or modified system is identified to testers, operators, and maintainers by specifying the radionuclide, form, and activity. **(T-0)**.

2.12.7. Ensure any shipment or transfer of RAM, for which the project manager is responsible, is coordinated with the IRSO **(T-3)** and is prepared in accordance with the transportation requirements in this manual and all applicable state, federal, DoD, and AF regulations/guidance. **(T-0)**.

2.12.8. Coordinate with the MAJCOM bioenvironmental engineering offices to include RAM safety and management requirements in all contracts for operating, changing, or repairing devices that contain RAM, as applicable. **(T-1)**.

2.12.9. Ensure that contractors supporting the project manager coordinate with the IRSO prior to bringing RAM onto USAF installations. **(T-1)**.

2.13. The Commander (or Director, or Chief), Installation Contracting, shall:

2.13.1. Ensure that all contracts involving RAM contain required contract clauses, see [paragraph 2.19.2](#). **(T-0)**.

2.13.2. Coordinate with the IRSO to ensure all solicitations for goods or services that may require the use of RAM contain appropriate award selection criteria. **(T-1)**.

2.14. The Commander (or Director, or Chief), Installation Logistics Readiness, shall:

2.14.1. Oversee the disposition, transportation, and shipment of HAZMAT (including RAM) installation-wide in accordance with 49 CFR Chapter I Subchapter C, Title 10 CFR Part 71, *Packaging and Transportation of Radioactive Material*, DTR 4500.9-R-Part II Chapters 204 and 208, AFI 23-101, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 23-122, *Materiel Management Procedures*, AFMAN 24-204, IATA, and this manual. **(T-0)**.

2.14.2. Ensure personnel performing HAZMAT transportation operations comply with training requirements associated duties referenced in 2.14.1. **(T-0)**.

2.14.3. Establish RAM specific HAZMAT transportation procedures, in coordination with IRSO, for the safe movement onto, off of, and around the installation. **(T-1)**.

2.14.4. Take measures adequate to prevent transfer of RAM to units on the installation without prior coordination with the IRSO and/or affected PRSO(s). **(T-1)**.

2.14.5. Develop and implement procedures to prevent the inadvertent transfer of RAM or items of supply known or suspected of containing RAM through the Defense Logistics Agency – Disposition Services system or Disposition Services Field Office. **(T-1)**. Establish procedures to notify the IRSO in the event of an incident(s) or the need to perform radiological survey(s) of items that have been identified by Defense Logistics Agency – Disposition Services system or Disposition Services Field Office as having the potential to contain RAM and/or components. **(T-1)**.

2.15. The Commander (or Director, or Chief), Installation Civil Engineering, shall:

2.15.1. Provide immediate notification to the IRSO of damage (e.g. fire, natural disaster, etc.) to buildings or waste sites where RAM is located, this includes any incident or event where these structures are potentially at risk because of proximity. **(T-1)**.

2.15.2. Coordinate with the IRSO to ensure installation emergency response plans include procedures for the theft, loss, sabotage, or release of RAM. **(T-1)**.

2.15.3. In coordination with the IRSO and Installation Commander, notify the State Emergency Response Commission and the Local Emergency Planning Committee when RAM incidents occur requiring execution of Emergency Planning and Community-Right-To-Know-Act (EPCRA) protocols. **(T-0)**.

2.15.4. Provide a list of facilities on the installation, which contains radioluminescent exit signs, to the IRSO at least annually or when changes occur. **(T-3)**.

2.15.5. Provide immediate notification to the IRSO upon discovering or disturbing potential radioactive waste sites on the installation, and prior to resuming any activities. **(T-1)**.

2.16. The Commander (or Director, or Chief), Installation Security Forces, shall:

2.16.1. Provide immediate notification to the IRSO of suspected, attempted, or actual theft or sabotage of RAM, to include any situation where the potential for collateral damage exists due to threats in proximity to RAM. **(T-3)**.

2.16.2. Ensure anyone transporting NRC licensed or permitted RAM onto the installation has a signed authorization from the IRSO prior to being granted access to the installation, excluding 91(b) material and RAM utilized/delivered to the medical treatment facility. **(T-3)**.

2.16.3. Provide immediate notification to the IRSO of any attempted unauthorized transport of RAM onto the installation, excluding 91(b) material. **(T-3)**.

2.17. The Permittee shall:

2.17.1. Be ultimately responsible for complying with all permit conditions, AFIs/manuals, and applicable federal regulations and also meet the following criteria, unless otherwise determined by the RICS: **(T-1)**.

2.17.1.1. Is a supervisor in the organization in which RAM is used, with operational and administrative control (e.g., unit commander, director, department chair, division chief) over the PRSO and all users; and **(T-1)**.

2.17.1.2. Is not the IRSO, the PRSO, a contractor, or user of the RAM authorized by the same permit. **(T-1)**.

2.17.2. Designate a qualified PRSO to manage the permitted RAM; with the authority, in writing, to suspend any operations that poses a significant health risk to personnel or the general public, a clear violation of regulations, or a high risk of negative impact to USAF operations, material, or real estate. **(T-1)**.

2.17.2.1. Submit their qualifications for approval by the RICS. **(T-1)**. For Template Permits, this requirement is satisfied by signing page two of the Request for Template Permit Action form.

2.17.3. Appoint a chairperson to oversee the Permit Radiation Safety Committee, if required, when the Permittee chooses not to fill the position. **(T-1)**. The chairperson cannot be the PRSO. **(T-1)**.

2.17.4. Approve the Radiation Safety Committee (RSC) charter and membership, when required. **(T-1)**.

2.17.5. Ensure RAM permit compliance with this manual and all responsibilities designated to a “licensee” in applicable NRC regulations not delegated to another organization/individual (e.g. not provide authority to the PRSO to sign documents authorizing any permit actions). (T-1).

2.17.6. Provide the PRSO and IRSO appropriate access to all activities associated with the utilization of permitted RAM. (T-1).

2.17.7. Ensure all correspondence with the NRC, concerning permitted and non-permitted RAM, flows through the RICS. (T-1).

2.17.8. Ensure all incident/investigation reports, regarding RAM exposures, are forwarded to the RICS in accordance with this manual. (T-1).

2.17.9. If applicable, submit an annual inventory of NRC-regulated SNM to the RICS by 1 March of each year for inclusion in the Nuclear Material Management & Safeguards System inventory. (T-1).

2.17.10. If applicable, submit a SNM Transaction Report to the RICS no later than one business day prior to shipping transactions and within 3 business days after a receiving transactions. (T-1).

2.17.11. If applicable, submit the annual inventory of Category 1 and 2 nationally tracked sources to the RICS by 1 January of each year for inclusion in the National Source Tracking System inventory. (T-1).

2.17.12. If applicable, submit a National Source Tracking System Transaction Report to the RICS no later than one business day prior to shipping transactions and within 3 business days after a receiving transactions. (T-1). **Note:** This only applies to a limited number of permittees; the RICS will contact permittees for which this applies.

2.17.13. Prepare and certify financial assurance plans or decommissioning plans, if required by the permit or applicable federal regulations. (T-0).

2.17.14. **The Permit Radiation Safety Committee (PRSC), if required by permit or federal regulations, shall:**

2.17.14.1. Develop procedures to execute the responsibilities of an RSC as prescribed by NUREG 1556 Volume 9, *Program-Specific Guidance About Medical Use Licenses* and NUREG 1556 Volume 11, *Program-Specific Guidance about Licenses of Broad Scope*, as applicable, and any additional responsibilities listed in this manual. (T-1).

2.17.14.2. For medical permits, when applicable, review NRC required criteria for Authorized Users, Authorized Medical Physicists, and Authorized Nuclear Pharmacists and provide recommendations and all documentation to the RICS for final decision. (T-1).

2.17.14.3. For non-medical permits, when applicable, review training, experience, and other qualification factors and grant authorization for individuals to utilize RAM under the permit. (T-1).

2.17.14.4. Periodically review, at least annually, the list of individuals authorized to utilize RAM under the permit to verify accuracy of the information and roles for which individuals have been approved are current. (T-1).

2.17.14.5. Review and approve or deny requests to use RAM within the scope of their issued permit. **(T-1)**. Approved uses must comply with this manual, permit conditions, and applicable Federal regulations. **(T-0)**.

2.17.14.6. Deny or approve minor changes in radiation safety rules with the advice and consent of the PRSC Chairperson and PRSO, as applicable. **(T-1)**. See 10 CFR Part 35 for medical specific guidance.

2.17.14.7. Establish specific requirements for special proposed uses of RAM (e.g., bioassays, physical examinations of users, and special survey methods). **(T-1)**.

2.17.14.8. Review the annual permit audits, performed by the PRSO and IRSO, and implement any corrective actions necessary to address audit findings. **(T-3)**.

2.17.14.9. Assists the PRSO in disseminating information to ensure permitted activities are performed safely and in compliance with applicable regulations. **(T-3)**.

2.17.14.10. In coordination with the PRSO, review dosimetry data quarterly for adverse trends, adequacy of controls, and to establish/modify investigation action levels. **(T-3)**.

2.17.15. The Chair, Permit Radiation Safety Committee (PRSC) shall:

2.17.15.1. Be the Permittee or an individual subordinate to Permittee, capable of making decisions on behalf the Permittee, and not the PRSO. **(T-1)**.

2.17.15.2. Ensure membership is consistent with the scope of permitted activities and regulatory requirements. **(T-0)**. The PRSC shall additionally include IRSO. **(T-1)**.

2.17.15.3. Ensure a quorum is present and documented for each PRSC meeting. **(T-1)**. A quorum consists of the Permittee (or designated chairperson), the PRSO, an IRSO, and at least half of the members of the PRSC. **(T-1)**.

2.17.15.4. Establish frequency for PRSC meetings, unless otherwise dictated by the permit. **(T-3)**.

2.17.15.5. Invite commanders whose resources and/or direct activities influence successful outcomes of permitted activities. **(T-1)**. Invite ancillary personnel (e.g., safety, housekeeping, infection control, maintenance, security forces) as deemed necessary. **(T-3)**.

2.17.16. The Permit Radiation Safety Officer (PRSO) shall:

2.17.16.1. Be a subordinate of the Permittee, have authorized access and/or utilization of permitted RAM and be an employee of the USAF, not a contractor, unless otherwise approved by the RICS. **(T-1)**.

2.17.16.2. Coordinate with the Permittee on requests for an initial permit (as proposed PRSO), renewals, amendments to an existing permit, or termination of a permit. **(T-1)**.

2.17.16.3. Assist the Permittee in RAM permit compliance with this manual and all responsibilities designated to a "licensee" in applicable NRC regulations not delegated to another organization/individual. **(T-1)**.

2.17.16.4. Notify the IRSO of activities affecting the RAM permit, to include: new applications, permit amendments, renewals, or terminations. **(T-1)**.

2.17.16.5. Notify the IRSO of activities affect the installation radiation safety program (e.g. changes in source-use locations, shipment of RAM, or methods of disposal, etc.). **(T-1)**.

2.17.16.6. Assist Permittee and IRSO to determine, report, and promptly investigate incidents/accidents involving permitted RAM. **(T-1)**.

2.17.16.7. Document and maintain records of RAM permit management required by NRC regulations and AFIs/manuals that apply to each permit, including the permit and permit application, amendments, and correspondence related to the permit **(T-0)**.; in addition the PRSO will maintain:

2.17.16.7.1. Permit policies and procedures for implementing requirements of this manual, the permit, and applicable federal regulations; **(T-1)**.

2.17.16.7.2. Communications with RICS; **(T-1)**.

2.17.16.7.3. Responses and corrective actions to findings from external inspection (AF RAM Permit Inspection by AFIA or NRC); **(T-1)**.

2.17.16.7.4. Permanent archival of permit termination documentation with the base civil engineer, the RICS, and the Air Force Civil Engineering Center (AFCEC). **(T-1)**. **Note:** .these records include the decommissioning plan if applicable, the final status survey report if applicable, NRC or Agreement State memoranda documenting acceptance of the final status survey report and approval for permit termination as applicable, the NRC Form 314, *Certificate of Disposition of Materials* (with all applicable attachments), the signed termination permit amendment from the RICS, and RICS memoranda documenting any long-term alternate or additional instructions. Files shall be stored electronically for permanent archival storage after permit termination. **(T-1)**.

2.17.16.8. Brief, at least annually, the Permittee and IRSO on the permit radiation safety program, including program regulatory compliance and the results of personnel exposures. **(T-1)**. Documents the annual brief with a memo, staff summary sheet, or electronic staff summary sheet signed by the Permittee and maintains this with permit records. **(T-1)**.

2.17.16.9. Ensure annual training is conducted in accordance with Title 10 CFR Section 19.12, *Instruction to Workers*, and is commensurate with the level of radiation risk represented by authorized permit activities. **(T-0)**. Training of non-radiation workers that work in the area shall be conducted as well. **(T-0)**. Implementation should follow guidance in NUREG 1556 guidance for the applicable permit type.

2.17.16.10. Ensure calibration of radiation instrumentation used for compliance monitoring according to American National Standards Institute guidance at intervals not to exceed one year unless otherwise specified by permit conditions, AF instruction, or Federal regulation. **(T-0)**. Radiation survey meters shall be capable of detecting the appropriate radiation type, measuring the energies of interest, and operationally checked with an appropriate check source prior to use. **(T-0)**. Retain calibration records in accordance with 10 CFR Chapter I (primarily 10 CFR Part 20). **(T-0)**. Records of operational checks are recommended, not required.

2.17.16.11. Ensure authorized users performing disposition and transportation functions (e.g., receipt, shipment, disposal, and packaging) for radioactive material (RAM) comply with training and other requirements specified in 49 CFR Chapter I Subchapter C, 10 CFR Part 71, DTR 4500.9-R-Part II Chapters 204 and 208, AFI 23-101, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 23-122, AFMAN 24-204, IATA, and this manual. **(T-0).**

2.17.16.12. One month in advance of the shipment or receipt of one gram or more of SNM, coordinate with the Permittee, IRSO, and RICS, then submit a completed DOE/NRC Form 741, *Nuclear Material Transaction Report*, to the RICS. **(T-1).**

2.17.16.13. Ensure the implementation of safety and security measures which in addition to general radiation protection shall include the timely reporting of defects and noncompliance in accordance with 10 CFR Part 21 as well as the protection of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and/or quantities of radioactive materials requiring an emergency plan for responding to a release (such as “toxic industrial radiologicals”, as listed in 10 CFR Part 37 Appendix A, 10 CFR Part 20 Appendix E, and 10 CFR 30.72 Schedule C, respectively) in accordance with Title 10 CFR Part 37, *Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material*, 10 CFR Part 20, and 10 CFR Part 30, respectively. **(T-0).** Consider “aggregation” of several RAM sources when determining exceedance of thresholds. **(T-0).** **Note:** PRSOs will interface with the IRSO and the RICS which will in turn interface with the NRC. **(T-1).**

2.17.16.14. Ensure all RIC permitted RAM possessed, used, or stored by the unit are correctly listed in a current and accurate inventory in RAMMIS. **(T-1).** Contact the IRSO or RICS for information on RAMMIS.

2.17.16.15. Assist the Radiation Safety Committee (RSC), as applicable, in understanding the responsibilities of discharging their duties.

2.17.16.15.1. Generate minutes of the meeting including, but not limited to:

2.17.16.15.1.1. The date of the meeting; **(T-1).**

2.17.16.15.1.2. Members present and absent; **(T-1).**

2.17.16.15.1.3. A summary of deliberations and discussions, including the numerical results of all votes; **(T-1).**

2.17.16.15.1.4. Recommended actions, including identifying the Office of Primary Responsibility and whether the action is open or closed; **(T-1).**

2.17.16.15.1.5. Approvals granted for individuals, protocols, or other actions, and a copy of the credentials or other documents used as the basis for the approvals; **(T-1).**

2.17.16.15.1.6. Deviations from or violations of this manual, the permit or Federal regulations; **(T-1).**

2.17.16.15.1.7. Changes to permit conditions and inspection results; and **(T-1).**

2.17.16.15.1.8. Self-inspection results and As Low As is Reasonably Achievable (ALARA) program reviews including a summary report of the occupational

radiation exposure records of all workers including individuals or groups with higher than expected exposures and established metrics to compare trends over time. (T-1).

2.17.16.15.2. Ensure the RICS, all permittees and PRSC members receive a copy of meeting minutes signed by the PRSC Chair no later than 45 days after a meeting. (T-1).

2.17.16.15.3. Retain meeting minutes until permit termination. (T-0).

2.18. The Units, Supervisors and Workers using any type of RAM shall:

2.18.1. Comply with the license or permit authorizing materials, local instructions, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFI 48-148, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, and IATA. (T-0). In addition, workers must:

2.18.1.1. Comply with the instruction of the IRSO and PRSO; (T-3).

2.18.1.2. Immediately report conditions that are of imminent danger to life or health, and those that may negatively affect USAF property, to either the IRSO or PRSO; (T-0).

2.18.1.3. Become familiar with NRC Form 3, *Notice to Employees* (if applicable); (T-0).

2.18.1.4. Perform all duties in a way that keeps radiation exposures ALARA; (T-0).

2.18.1.5. Wear dosimetry when required and store dosimetry in the designated control area when not in use. (T-0).

2.18.1.6. Take measures adequate to prevent override of engineering controls, modification of personal protective equipment or tampering with radiation dosimeters or purposely exposing radiation dosimeters to radiation or RAM; (T-0).

2.18.1.7. Bring observed violations to the attention of their supervisors. All workers will report allegations to the RICS or NRC using the procedures in Chapter 7. (T-0).

2.18.2. When hosted by, attached or assigned to a Joint Base/Unit or geographically separated unit (continental United States and outside the continental United States) without a base bioenvironmental engineer or IRSO, coordinate approval for the procurement, possession, use, storage, transportation, and disposition of RAM as well as responses and reports for incidents involving RAM through the Joint Base commander (or the commander's appointee/designee) and the AF unit's MAJCOM bioenvironmental engineer, who will in turn coordinate with the RICS. (T-1).

2.19. Requiring Activities (for contractor work), shall:

2.19.1. Coordinate with the IRSO to obtain information necessary to develop a Performance Work Statement/Statement of Work for compliance with all applicable statutes, regulations and instructions for managing RAM in the USAF. (T-1).

2.19.2. Ensure, as appropriate, the Performance Work Statement/Statement of Work includes the requirement for the contractor to submit: (T-0).

2.19.2.1. An NRC or Agreement State license. (T-0). For those areas of exclusive Federal jurisdiction, a copy of both the NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters*, and Agreement

State license must be submitted. **(T-0)**. For those areas of concurrent or proprietary jurisdiction in an agreement state, the respective Agreement State license is a valid authorization; or

2.19.2.2. A valid NRC Master Materials License-issued RAM permit from the US Navy or Veterans Affairs **(T-0)**. **Note:** The Navy, Veterans Affairs, and AF are the only entities that hold a NRC Master Materials License which can issue permits;

2.19.2.3. Written certification from DOE organizations or DOE prime contractors that they are exempt from NRC license requirements; and **(T-0)**.

2.19.2.4. Written approval from the IRSO to transfer, transport, or use temporary storage areas for RAM on the installation. **(T-1)**.

Chapter 3

GUIDANCE AND PROCEDURES FOR RADIOACTIVE MATERIAL USE AND PERMITTING

3.1. Prohibitions and Special Requirements for Accepting or Using RAM.

3.1.1. A USAF radioactive material (RAM) Permit shall not be cited as authority to receive RAM or devices that contain RAM unless specifically authorized on the permit. **(T-0)**.

3.1.2. Individuals or organizations shall not physically accept custody of “permissible” RAM without first obtaining written approval via a permit or other authorization from the RICS or AFSEC/SEW, as appropriate. **(T-0)**.

3.1.3. RAM shall not be collected as souvenirs or incorporated into souvenirs (e.g., 30 millimeter (mm) depleted uranium penetrators, dials and gauges containing radium paint, exit signs containing tritium). **(T-0)**.

3.1.4. RAM shall not be applied to people or clothing and shall not be incorporated in any food, beverage, cosmetic, drug, or other commodity, product or item unless specifically licensed by the NRC or permitted by a USAF RAM Permit authorizing the activity. **(T-0)**.

3.1.5. RAM shall not be included in displays open to the general public. **(T-1)**. Exceptions: materials for displays that teach personnel how to operate a device that functions only if RAM is incorporated as a component of the item or device; materials used to train personnel how to identify an item or substance; materials authorized by the AF Museum (e.g., static display aircraft or other weapon system components having dials or gauges containing RAM); or a USAF RAM Permit authorizes the display. The exceptions apply provided displays are properly marked and labeled and procedures are implemented for control of access to ensure exposures to worker and public are below the limits in 10 CFR Part 20, and As Low As is Reasonably Achievable (ALARA). **(T-1)**.

3.1.6. Targets used on operational ranges shall conform to [paragraph 2.10](#). **(T-1)**.

3.1.7. Only the RICS may cite the MML as authority to receive RAM or devices that have RAM into the USAF supply inventory. **(T-0)**.

3.1.8. Installation Commanders and permittees will recognize the RIC and/or RICS as the interpretive authority on any AFIA/SG finding. **(T-1)**. The AFIA/SG shall not be cited as authority to deviate from the permit, AFIs, or applicable Federal regulations. **(T-1)**.

3.1.9. Individuals or organizations shall first consult and coordinate with the RICS prior to responding to civilian or other non-USAF entity requests for assistance involving potential USAF-owned RAM. **(T-1)**.

3.1.10. Host nation laws and regulations concerning import, export, control, and/or disposal of RAM shall take precedence according to the terms of an applicable international agreement with the host nation if those laws and regulations are as, or more, stringent than the laws and regulations governing import, export, control, and/or disposal of RAM in the US; includes permits issued to USAF organizations. **(T-0)**. Radiation safety standards and requirements followed by USAF organizations overseas will always be at least as stringent as those followed by USAF organizations within the US. **(T-1)**. International Atomic Energy Agency (IAEA)

Safety Standards may be considered where applicable to avoid setting up separate requirements for USAF workers and local nationals.

3.1.11. USAF installations located within a host nation will honor contractor host nation licenses for using RAM in like manner as a NRC or Agreement State License (T-0); the RICS may be consulted for assistance or further guidance in these cases.

3.1.12. Exempt Quantities. This manual requires the inventory of material covered by Title 10 CFR Sections: 30.15, *Certain Items Containing Byproduct Material*, 30.19, *Self-luminous Products Containing Tritium, Krypton-85, or Promethium-147*, 30.20, *Gas and Aerosol Detectors Containing Byproduct Material* and any discrete source in Title 10 CFR Section 30.18, *Exempt Quantities*, not otherwise excluded by the RICS. (T-1). These exempt sources inventories will be maintained by IRSO and are not required to be in RAMMIS; examples of these materials are electron tubes, wrist watches, gun sights, check sources and chemical agent detectors. RAM integral to in-service aerospace vehicles or weapons system (e.g., magnesium thorium, optics and electronics) is exempt from inventory until such time it is removed for disposal by Aerospace Maintenance and Regeneration Center or Air Force Radioactive Recycling and Disposal (AFRRAD). (T-1).

3.2. Procuring Radioactive Materials.

3.2.1. For guidelines on procuring items with RAM, follow AFJI 23-504 and this manual. (T-1).

3.2.2. Individuals or organizations:

3.2.2.1. Shall not procure RAM or accept RAM into the USAF supply inventory without a permit (Title 10 CFR Section 30.34, *Terms and Conditions of Licenses*), see [paragraph 3.4](#) on permitting process. **Exception:** Reference [paragraph 3.3.2](#). (T-0).

3.2.2.2. Shall not procure facility radioluminescent exit signs (e.g., emergency exit signs containing tritium) and markers without RICS written approval. (T-1).

3.2.2.3. Shall coordinate procurement of RAM with IRSO in accordance with [paragraphs 2.9.5](#) and [2.9.12.1](#). (T-1).

3.2.2.4. Shall not procure RAM through the Air Force Government-Wide Purchase Card Program. (T-1).

3.3. Requirements for a Permit issued under the USAF Master Materials License.

3.3.1. All USAF organizations must obtain a radioactive material (RAM) permit from the RICS prior to purchasing, receiving, storing, distributing, using, transferring, or disposing of:

3.3.1.1. Specifically licensed byproduct, source, NARM, and SNM, to include those materials covered by the expanded definition of byproduct material in the Energy Policy Act of 2005, other than those exempted in [paragraph 3.3.2](#). (T-0).

3.3.1.2. Generally licensed devices (GLD) received by transfer (T-0), see [paragraph 3.10.4](#).

3.3.1.3. No other organization can issue a USAF RAM permit except for the RICS. (T-0).

3.3.2. USAF organizations may not require a permit for the following RAM (consult with RICS):

3.3.2.1. Certain concentrations or quantities of RAM, as detailed in 10 CFR Chapter I.

3.3.2.2. Nuclear weapons and certain radioactive parts of weapons systems classed as 91(a) and/or 91(b) material.

3.3.2.3. Reactor fuel elements and sources inherent to reactor operations (e.g., neutron start-up sources classed as 91(b) material).

3.3.2.4. Other material for which the RICS or AFSEC/SEW, as appropriate, waives the requirement for a permit.

3.3.2.5. Military operational use sources (e.g., Ra-226 dials and gauges) are exempt from NRC licensing requirements. **Note:** Military operational use is defined as activities such as warfare, combat, battlefield missions, training for battlefield missions, materials in stockpile storage, and materials that may be subject to decontamination and disposal. Other military possession and use of Ra-226, including medical or research activities, conducted by the DoD, or use in a manner similar to a commercial activity are subject to NRC regulatory authority, and may require a USAF RAM permit.

3.3.2.6. Exceeding 100 non-military operational use Ra-226 sources in the same location will require a USAF RAM permit (Title 10 CFR Section 31.12, *General License for Certain Items and Self-luminous Products Containing Radium-226*). **(T-0)**. **Note:** Up to 100 non-military or 100 military non-operational use Ra-226 sources may be used or stored at any one time, in the same location (e.g., single building), under a general license and may not require a permit.

3.4. Requesting Permits, Amendments, and Other Authorizations for RAM Use.

3.4.1. Initial applications for permits (reference [paragraph 2.17.16.2.](#)) are prepared and submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer **(T-3)**. Contact the RICS if an immediate mission critical permit or amendment is required. **(T-1)**.

3.4.1.1. The RICS can provide prescribed NRC forms, copies of regulatory guides, and additional guidance on the administrative aspects of permits. NRC forms and regulatory guides are also available through the Nuclear Regulatory Commission's website..

3.4.1.2. Permit applications require the signature of the Permittee on an NRC Form 313, *Application for Materials License*, and appointment of a PRSO and, if possible, an alternate PRSO. **(T-1)**. This application must be sent to the RICS, not the NRC. **(T-1)**.

3.4.1.3. Organizations planning new or unique applications, including NRC Category 1 and Category 2 sources, sources requiring national tracking, quantities of radioactive materials requiring an emergency plan for responding to a release, and/or unsealed RAM; must contact the RICS as early as possible to decide the scope of the permit, facility requirements, and the need for a site visit by the RICS staff. **(T-1)**. Plans must include provisions for baseline surveys prior to initially storing RAM in a location. **(T-1)**.

3.4.1.4. Category 1 and Category 2 safety and security controls shall be in place and inspected by AFIA/SG before the permit will be issued. (T- 0) Consider "aggregation" of several RAM sources when determining exceedance of Category 1 and Category 2 thresholds. (T- 0)

3.4.1.5. Applications for activities expected to have a significant environmental impact shall be evaluated in accordance with Title 32 CFR Part 989, *Environmental Impact Construction*. **(T-0)**. Activity shall not begin until the environmental impact report has been submitted with the permit application, and found acceptable, pursuant to subpart A of Title 10 CFR Part 51, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions*. **(T-0)**.

3.4.1.6. Pursuant to 10 CFR §30.35 and 10 CFR §30.36 (byproduct material), 10 CFR §40.36 (source material), and/or 10 CFR §70.25 (licensed source material), certain applications require a proposed decommissioning funding plan and/or a certification of financial assurance for decommissioning. **(T-0)**.

3.4.1.7. Each application to possess RAM in unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities in 10 CFR §30.72, Schedule C, requires either a dose assessment or an emergency plan pursuant to 10 CFR 30.32(i)(1)- (3). **(T-0)**. The RICS should be contacted to coordinate development of these materials.

3.4.1.8. Applicants desiring to ship, transfer or transport RAM greater than a Type A quantity (reference 10 CFR Part 71, Appendix A) must have an NRC approved transportation quality assurance program in accordance with Title 10 CFR Part 71, Subpart H, *Quality Assurance*; this can be accomplished by:

3.4.1.8.1. Submitting an application to the RICS following guidelines in Title 10 CFR Part 71, Subpart G, *Operating Controls and Procedures*, 10 CFR Part 71, Subpart H, and NRC Regulatory Guide 7.10, *Establishing Quality Assurance Programs for Packaging Used in Transport of Radioactive Material*. **(T-0)**. **Note:** Contact the RICS for guidance if not using a commercial NRC approved package.

3.4.1.8.2. Alternately, utilizing a source vendor or other NRC or Agreement State licensee with a NRC approved transportation quality assurance program. **(T-0)**. **Note:** Ensure that the contractor has jurisdictional authority to perform desired work, see [paragraph 3.4.4](#). **(T-0)**. Contact the RICS for guidance.

3.4.1.8.3. Applicants desiring to ship items falling under 10 CFR Part 37 must also implement additional security measures. **(T-0)**. **Note:** Contact the RICS for guidance, if needed, at least six months prior to shipping date.

3.4.2. Renewal Permit Applications:

3.4.2.1. USAF RAM Permits are issued with expiration dates. Renewal applications for permits are prepared and submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer. **(T-1)**.

3.4.2.1.1. Renewal applications for non-template permits must be submitted at least three (3) months, but not greater than six (6) months, prior to the expiration date to allow time for the application to be reviewed and the new permit issued in a timely manner. **(T-2)**.

3.4.2.1.2. Renewal applications for template permits must be submitted at least one (1) month, but not greater than three (3) months, prior to the set expiration date to allow time for the application to be reviewed and the new permit issued in a timely manner. **(T-2)**.

3.4.2.1.3. The existing permit will continue in full force and effect beyond the expiration date, provided the renewal application was submitted in a timely manner prior to the expiration date, and a “Deemed Timely Filed” memorandum has been received from the RICS, or AFSEC/SEW as appropriate. Failure to renew the permit will result in a Cease and Desist enforcement action from the RICS and the permit will default to possession only status and use of RAM will no longer be authorized. **(T-0)**. Failure to submit the renewal application in accordance with required timelines may result in RICS enforcement actions.

3.4.3. Permit Amendments: All requests must be submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer. **(T-1)**. Permittees must apply for a permit amendment for any changes needed on their existing permit conditions, original application, or existing commitments, known as “tie-down” letters. **(T-0)**.

3.4.3.1. If a change must be initiated prior to permit amendment approval, then the Permittee must obtain verbal approval from the RICS, and maintain a record of each minor change until the permit amendment or renewal is granted. **(T-1)**. Documentation shall include: **(T-1)**.

3.4.3.1.1. The effective date of the change;

3.4.3.1.2. A copy of old and new radiation safety requirements;

3.4.3.1.3. The reason for the change;

3.4.3.1.4. A summary of radiation safety concerns to be considered before making the change;

3.4.3.1.5. The signature of the PRSO; and

3.4.3.1.6. The signatures of the authorized users affected by the change, the Permittee and the PRSC chairperson.

3.4.3.2. Permit amendments are not required for the following:

3.4.3.2.1. Editing radiation safety requirements or procedures for clarity or conformance with local publication formats or updating titles, business telephone numbers, and business mailing addresses;

3.4.3.2.2. Replacing permitted items with identical items;

3.4.3.2.3. Reassigning tasks among employees, unless permit involves identified Authorized Users; or

3.4.3.2.4. Assigning service contracts for services such as equipment repair or calibration, waste disposal, health physics or bioenvironmental engineering advisor.

3.4.3.3. Additionally, permittees must submit an amendment request to the RICS when personnel listed on the permit such as users or PRSOs permanently cease their duties or change their names. **(T-1)**. Permittees shall notify the RICS through a memorandum signed by the Permittee whenever the Permittee’s identity or email address changes as a result of change-of- command, deployment or for any other reason, within 30 calendar days of the change; the memo shall include the new email address for the Permittee and shall be maintained with the permit. **(T-1)**.

3.4.3.4. RAM must be placed in storage if a qualified PRSO is not available for greater than 30 days (e.g., deployed, TDY). **(T-0)**.

3.4.4. Do not allow non-USAF organizations to use RAM, including NARM, on USAF installations without prior written approval from the IRSO. **(T-2)**. This applies to any civilian organization or other Federal agency that desires to transfer, transport, or temporarily store RAM on or conduct operations using RAM on a USAF installation.

3.4.4.1. The non-USAF organization must send a request to the IRSO at least 30 calendar days before bringing the RAM onto the installation. **(T-2)** For contractors, these requirements must be included in the statement of work. **(T-2)**.

3.4.4.2. Requests must be in writing and include:

3.4.4.2.1. A brief description of the proposed activities; **(T-1)**.

3.4.4.2.2. A copy of a current NRC or Agreement State license with current NRC Form 241 for areas of exclusive Federal jurisdiction, when applicable. **(T-1)**. For those areas of concurrent or proprietary jurisdiction in an Agreement State, the respective Agreement State license is a valid authorization. The license must either specifically list the installation or authorize approval for work at temporary job sites anywhere in the US where the NRC or Agreement State has jurisdiction (NUREG 1556 Vol 20, *Guidance About Administrative Licensing Procedures*, and Title 10 CFR Section 150.20, *Recognition of Agreement State Licenses*). **(T-0)**. Exception: Contractors using generally licensed materials (e.g., certain Niton® Lead Paint Analyzers) and DOE or DOE prime contractors operating in accordance with Title 10 CFR Part 835, *Occupational Radiation Protection*, do not require an NRC license or NRC Form 241. **(T-0)**. DOE organizations and DOE prime contractors must certify, in writing, that they are exempt from NRC licensing requirements. **(T-2)**.

3.4.4.2.3. The name, local address, and telephone number for the responsible local representative and the name, address, and telephone number of the RSO named on their license; **(T-3)**.

3.4.4.2.4. For contractors, a copy of the performance work statement of the USAF contract describing work to be performed at the installation and the inclusive dates of the work; and **(T-3)**.

3.4.4.2.5. For contractors, a copy of the safety plan ensuring compliance with NRC, AFI, AFMAN and other safety requirements referenced in the performance work statement/statement of work be incorporated and shall state that the IRSO can conduct periodic assessments to ensure contractor personnel are complying with radiation safety practices to prevent exposures to USAF personnel and avoid contamination of government property. The IRSO and contractor shall promptly report any issues to the Contracting Officer, Base Safety Office, and the Contracting Officer Representative. **(T-1)**. In addition, the safety plan should specify the IRSO has the authority to suspend contractor operations believed to be unsafe and promptly notifying the Contracting Officer and Contracting Officer Representative. **(T-1)**.

3.4.4.3. Agreement State licensees using NRC regulated materials in areas of exclusive Federal jurisdiction must provide a copy of the NRC Form 241 approved by either the

USAF installation's or contractor's NRC Region according to 10 CFR §150.20. **(T-0)**. The form must specify the correct locations and dates of performance of licensed activities. **(T-0)**. State licensees may not work on USAF or other installations of exclusive Federal jurisdiction, for more than 180 calendar days per calendar year, without first getting an NRC license. **(T-1)**.

3.4.4.4. Non-USAF organizations that do not have an NRC or Agreement State License with current NRC Form 241 and who are not DOE or DOE prime contractors exempted from licensing must contact the RICS for guidance and approval to use RAM on an USAF installation. **(T-1)**.

3.4.5. Permittees under new permits will notify AFIA/SG immediately upon first receipt of RAM. **(T-2)**.

3.5. Posting Notices to Workers.

3.5.1. Each Permittee for NRC-licensed radioactive material (RAM) (continental United States and outside the continental United States) must prominently post the latest NRC Form 3, *Notice to Employees*, in the workplace(s) storing or using the licensed RAM. **(T-0)**. Additionally, each Permittee shall prominently post a supplemental notice that briefly describes the nature of, and access to, current versions of the following: 1) regulations in 10 CFR Parts 19 and 20; 2) the permit, permit conditions, or documents incorporated into a permit by reference, and amendments thereto; 3) operating procedures applicable to permitted activities; 4) any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued pursuant to 10 CFR Part 2 Subpart B, and any response from the Permittee; and, 5) any other pertinent MML documentation, in accordance with Title 10 CFR Section 19.11, *Posting of Notices to Workers*. **(T-0)**. **Note:** AF logistics personnel engaged in the transportation of RAM remain exempt to the extent that they transport or store RAM in the regular course of carriage for another or storage incident thereto, in accordance with Title 10 CFR Sections: 30.13, *Carriers*, 40.12, *Carriers*, and 70.12, *Carriers*. **(T-0)**.

3.5.2. Permittees, in accordance with 10 CFR Part 21, must also post a copy of Section 206 of the Energy Reorganization Act of 1974 and a notice regarding the availability of the regulations and procedures adopted according to Title 10 CFR Section 21.6, *Posting Requirements*. **(T-0)**.

3.6. Control of Radioactive Material, and Information Concerning Radioactive Material.

3.6.1. All exempt and non-exempt RAM (e.g., residual radioactive material from past nuclear weapon accidents, incidents, research, maintenance activities, and dismantled/decommissioned reactor 91(b) material still under USAF possession), must be secured from unauthorized removal or access. **(T-1)**. Radioactive materials that are used in unrestricted areas must be under the constant surveillance of an individual authorized under a valid USAF permit or NRC/agreement state license when not in storage. **(T-0)**.

3.6.2. All permitted and licensed radioactive sources and devices must be inventoried as follows: **(T-0)**.

3.6.2.1. Permitted RAM or devices shall be inventoried at the frequency specified in the permit. **(T-0)**.

3.6.2.2. Licensed RAM or devices not requiring a permit (e.g. Generally Licensed Devices) shall be inventoried in accordance with the applicable CFR, Technical Order or AFI/AFMAN. **(T-0)**.

3.6.2.3. Unless otherwise specified, inventories of permitted or licensed materials SHALL be conducted at intervals not to exceed six (6) months. **(T-0)**.

3.6.3. Inventory documentation must be retained in accordance with the applicable CFRs. **(T-0)**. Documentation must include the following:

3.6.3.1. Date of the inventory; **(T-0)**.

3.6.3.2. Model number and serial number of each source, if assigned; **(T-0)**.

3.6.3.3. The identity of the radionuclide, manufacturer date, and source activity **(T-0)**;

3.6.3.4. The location of each source; **(T-0)**.

3.6.3.5. The name of the individual conducting inventory; **(T-0)**.

3.6.3.6. The signature of the PRSO endorsing the inventory **(T-3)**.; and

3.6.3.7. NSN, if applicable. **(T-3)**.

3.6.4. Information Security and Increased Controls for Certain Quantities of RAM: All RAM and information about this RAM shall be protected from unauthorized access/use. **(T-0)**. Specific requirements are provided in 10 CFR Part 37, NRC Regulatory Issue Summary 2005-31, *Control of Security-related Sensitive Unclassified Nonsafeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material*, and any RIC directions. The thresholds for NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and Category 3 sources requiring sensitive unclassified non-safeguards information (SUNSI) protection, are listed in 10 CFR Part 37 Appendix A, 10 CFR Part 20 Appendix E, and NRC Regulatory Issue Summary 2005-31, respectively). Consider “aggregation” of several RAM sources when determining exceedance of thresholds. **(T-0)**.

3.7. Transferring Permitted Radioactive Material.

3.7.1. Permitted or licensed RAM shall only be transferred to:

3.7.1.1. An organization or person authorized to receive the materials under the terms of a USAF, US Navy, or Veterans Affairs RAM permit; NRC license; or Agreement State License. **(T-0)**.

3.7.1.2. USAF agencies with written authorization from the RICS or AFSEC/SEW, as appropriate. **(T-0)**.

3.7.1.3. DOE and DOE prime contractors who certify, in writing, that they are authorized to receive the materials. **(T-0)**.

3.7.1.4. Organizations or persons outside the US under an export license issued in accordance with Title 10 CFR Part 110, *Export and Import of Nuclear Equipment and Material*. **(T-0)**. Permission to transfer USAF RAM between the USAF and a foreign government requires pre-coordination with the RICS and is determined on a case-by-case basis. **(T-1)**.

3.7.1.5. Common and contract carriers, freight forwarders, and warehouse workers, for transporting or storing materials subject to 10 CFR §30.13, 10 CFR §40.12, and 10 CFR §70.12. **(T-0)**. Package, label, and consign materials for shipment according to 10 CFR Part 71 and Title 49 CFR Part 173, *Shippers—General Requirements for Shipments and Packaging*. **(T-0)**

3.7.2. Permittees shall ensure that any recipient has authority to receive the RAM before making the transfer by: **(T-0)**.

3.7.2.1. Obtaining a copy of the recipient's NRC license, USAF, US Navy, or Veterans Affairs RAM permit, or Agreement State license giving authority to receive the RAM, or

3.7.2.2. Obtaining a letter from the recipient RSO or Permittee to receive the materials, to include the license or permit number, issuing agency, expiration date, type, form of RAM, and the authorized amount.

3.7.2.3. In emergencies, telephonic certification is authorized when followed up with a letter or message within 10 days.

3.7.3. Reports of Nuclear Material Transaction Reports, when required by Title 10 CFR Section 40.64, *Reports*, or 10 CFR §74.15 respectively, must be used for specific transfers **(T-0)**; see [paragraphs 2.17.10, 2.17.12](#) and [2.17.16.12](#).

3.7.4. When shipping NRC specifically licensed, generally licensed or permitted RAM, a RAM owning organization member (e.g. PRSO) will verify the RAM is received by the ship-to-address and/or the intended destination. **(T-0)**. Verification of receipt, in writing, by the recipient is the preferred method; this includes the use of a receipt to show change of custody whenever transferring RAM from the permitted unit to a shipper/carrier, vendor, or another unit. If for some reason written verification cannot be accomplished, then telephonic confirmation may be used provided it is documented and includes name, number and title of the person verifying the receipt and date of the telephonic conversation. When receiving materials from another USAF organization or when requested by a non-USAF shipper, confirm receipt in writing. **(T-0)**. For items shipped to and from Distribution Depots, documentation in Defense Logistics Agency's Defense Logistics Management System is acceptable. Transfer (turn-in/shipment and receipt at receiving end) documentation associated with termination of permitted activities must be provided to the RICS to document applicable permit amendments and permit termination requests. **(T-0)**. Reference DTR 4500.9-R-Part II, *Cargo Movement*, and 49 CFR Chapter I, Subchapter C.

3.7.5. Report to the RICS the transfer of generally licensed material with the information required by the NRC in accordance with Title 10 CFR Section 31.5, *Certain Detecting, Measuring, Gauging, or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere*. **(T-0)**.

3.7.6. Coordinate with the RICS (or AFSEC/SEW, as appropriate) at least six (6) months in advance, for transfer of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, in accordance with 10 CFR Part 37, Appendix A and 10 CFR Part 20 Appendix E, respectively). **(T-2)**. Consider "aggregation" of several RAM sources when determining exceedance of thresholds. **(T-0)**.

3.7.7. Keep records of all transfers in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**. The transfer receipt format shall at a minimum include the date of physical receipt of the item(s); serial number(s); description and quantity of the item(s); and, the name and signature of the recipient. **(T-1)**. **Note:** Transfer of permitted radioactive material from office to office at an installation, including the logistics readiness squadron cargo movement section, should be documented. The AF Form 1297, *Temporary Issue Receipt*, or alternate form will be retained as a record of transfer. **(T-3)**.

Note: Transfer of all RAM from one permit to another does not constitute termination or relieve the Permittee from notifying the RICS or AFSEC/SEW as appropriate and providing information on decommissioning. Accordingly, such permits are considered in full force and effect and subject to inspection by AFIA/SG until the conditions of [paragraph 3.11](#) are met.

3.8. Transporting Radioactive Material.

3.8.1. USAF organizations shipping or transporting RAM must comply with 49 CFR Chapter I Subchapter C, 10 CFR Part 71, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, IATA, and this manual. **(T-0)**.

3.8.2. Anyone desiring to ship or transport RAM shall contact the Transportation Officer within the logistics readiness squadron for information on transportation requirements. **(T-3)**.

3.8.3. The generating activity must properly identify RAM and items containing RAM when sending to the logistics readiness squadron cargo movement section for packaging and shipping. **(T-0)**. Identification of these items and/or RAM shall be in accordance with Title 49 CFR Section 172.202, *Description of Hazardous Material on Shipping Papers*, and shall include the following: **(T-0)**.

3.8.3.1. Radionuclide(s);

3.8.3.2. Description and number of items;

3.8.3.3. Item nomenclature and, if applicable, NSN, proper shipping name and UN number;

3.8.3.4. Individual and total activity in units of Becquerel with Curies in parentheses; and

3.8.3.5. Chemical and physical form.

3.8.4. When shipping between or to outside the continental United States locations, compliance with applicable status of forces agreement, IATA and International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*, are required. **(T-0)**.

3.8.5. Local AF installation logistics personnel (and AFRRAD personnel when applicable) will complete transportation/shipping discrepancy reports in accordance with the Defense Transportation Regulations upon receipt of an improperly shipped RAM package and will forward copies of submitted transportation/shipping discrepancy report information to the RICS and to the RIC members representing AF/A4. **(T-1)**.

3.9. Minimum Training and Experience Required for PRSO and Permit Instructors of Manufacture's Device Training.

3.9.1. Required Training for PRSOs. PRSOs must have formal training, and for some permits experience, commensurate with the type and quantity of radioactive material (RAM) possessed. **(T-0)**. General criteria used by the RICS includes the education, training and experience of the individual, regulatory requirements specified in 10 CFR Chapter I (if any) and guidance provided in the applicable NUREG 1556 volume for the type of permitted material. **Note:** Training for IRSOs and Unit Radiation Safety Officers is listed in AFI 48-148. All RSO training curricula must be approved by the RICS. **(T-0)**. Specific requirements for a RICS approved 40 hour PRSO course are listed in [paragraph 3.9.3](#). A summary of training requirements are listed in Table 1, *PRSO Training Requirements*.

3.9.2. Qualifications for Permit Instructors of Manufacturer's Device Training ("Train the Trainer" concept). Authorized users may provide the manufacturer's device training to others if they have the specific qualifications listed below. **(T-1)**. All manufacturer's device instructor training curricula and permit device training instructors shall be approved by the RICS. **(T-1)**. A summary of requirements is listed in [Table 3.2](#), *Permit Instructor for Device Training*; for permit types not listed, instructor qualifications for all other permitted devices shall be approved by the RICS on a case-by-case basis. **(T-1)**.

3.9.3. Radiation Safety Officer Course Curricula: An RSO course designed for training personnel to manage basic radiation safety programs involving non-template permits, shall, at a minimum, include:

3.9.3.1. Radiation safety topics: **(T-0)**.

- 3.9.3.1.1. Radiation vs. contamination,
- 3.9.3.1.2. Internal vs. external exposure and dose equivalents,
- 3.9.3.1.3. Biological effects of radiation,
- 3.9.3.1.4. Types and hazards associated with RAM possessed,
- 3.9.3.1.5. As Low As is Reasonably Achievable (ALARA) concept,
- 3.9.3.1.6. Time, distance, and shielding to minimize exposure,
- 3.9.3.1.7. Sealed source location within the gauge,
- 3.9.3.1.8. "Lessons learned" from prior events involving permitted material, and
- 3.9.3.1.9. Inspection by regulatory agencies.

3.9.3.2. Regulatory requirements for the following topics: **(T-0)**.

- 3.9.3.2.1. Applicable regulations,
- 3.9.3.2.2. License/Permit conditions, amendments, renewals,
- 3.9.3.2.3. Locations of use and storage of RAM,
- 3.9.3.2.4. Material control and accountability,
- 3.9.3.2.5. Annual audit of radiation safety program,
- 3.9.3.2.6. Transfer and disposal,
- 3.9.3.2.7. Record keeping,

- 3.9.3.2.8. Managing incidents/mishaps,
- 3.9.3.2.9. Recognition and assurance of radiation warning signs; visibility and legibility,
- 3.9.3.2.10. Requirement for complete and accurate information,
- 3.9.3.2.11. Employee protection, and
- 3.9.3.2.12. Deliberate misconduct.

3.9.3.3. The RICS may temporarily waive certain requirements for training (e.g., time of experience) based on mission need. However, the PRSO will work under a preceptor or limitations imposed by the RICS. **(T-1).**

Table 3.1. PRSO Training Requirements. (T-1).

PRSO Training Requirements						
Permit Type ⁴	Manufacturer's Training	RIC Approved Training Course ¹	Manufacturer's RSO Training ²	RIC Approved 40-hr Training Course	Experience with permitted RAM; requirements in 10 CFR 33 and NUREG 1556 V 11	Requirements in 10 CFR 35 and NUREG 1156 V 9
Template Permits (Depleted Uranium, IBIS, Niton, and AINS)		X				
Moisture Density Gauges (Non- Template)	X		X			
Fixed Gauges	X			X		
Cargo and Vehicle Inspection System	X			X		
Personal Security Screening System	X	X				
Limited Scope				X		
Broad Scope (A or B)					X	
Medical ³						X

¹The training course must be RICS-approved and must have an end of course test. Training materials will be provided by the IRSO.

²Must have at least an 8-hr RICS-approved PRSO course.

³Training programs for nuclear medicine technicians assigned as a medical PRSO must be reviewed and approved by their regional medical physics office.

⁴Contact the RICS for the minimum training requirements for PRSOs responsible for multiple permit types.

Note: Permits with quantities pursuant to 10 CFR Part 37 will require RICS approved 10 CFR Part 37 training.

Table 3.2. Permit Instructor for Device Training. (T-1).

Permit Instructor for Device Training					
Permit Type	One Year as a Full Time or 500 hrs Logged as an Authorized User	Manufacturer's RSO Course	RIC Approved Training Course¹	RIC Approved 40-hr Training Course	Manufacturer's Instructor Training Course
Moisture Density Gauges (Non-Template)	X	X			X
Vehicle and Cargo Inspection System	X			X	X
Personal Security Screening System	X		X		X
¹ The PRSO training course must be RICS approved.					

3.10. Managing Generally Licensed Devices.

3.10.1. Generally Licensed Devices (GLDs). The NRC or Agreement State issues a general license to acquire, receive, use, store or transfer certain devices that contain radioactive material (RAM) which have been manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued to the manufacturer by the NRC or an Agreement State. 10 CFR Part 31 details requirements of GLDs. GLDs are not normally specifically permitted by the RICS, since they have a NRC general license regulating the device. This NRC license is held by the purchaser of the device normally the Sq/CC. However, RICS reserves the right to permit a GLD if needed. GLDs are subject to direct inspection by the NRC and is not part of the AF MML, or AFIA process.

3.10.2. Acquisition of GLDs. GLDs will be purchased using Defense Federal Acquisition Regulations, assigned an NSN and registered in the Federal Logistics Information System and Hazardous Material Information Resource System. GLDs shall be registered in the USAF logistics system and identified as radioactive and inventoried in RAMMIS. (T-1). Additionally, see [paragraph 3.2](#) requirements.

3.10.3. Requirements for Possession of GLDs under 10 CFR §31. 5. All USAF units will comply with Sealed Source and Device Registry (SSDR) requirements for each specific GLD device type. **(T-0)**. In addition:

3.10.3.1. Unit responsibilities. Units with GLDs that do not possess a USAF RAM permit will appoint a responsible individual. **(T-1)**. For units with issued permits, the PRSO will be the responsible individual. **(T-1)**. The responsible individual shall:

3.10.3.1.1. Maintain a copy of the SSDR for the GLD on file. **(T-1)**.

3.10.3.1.2. Ensure that the requirements of the SSDR are met. **(T-0)**.

3.10.3.1.3. Provide the IRSO an updated inventory at least every six months so that the IRSO can input the data into RAMMIS. **(T-2)**.

3.10.3.1.4. Preserve all labels affixed to the device and ensure all instructions are followed (10 CFR Part 31). **(T-0)**.

3.10.3.1.5. If required by the SSDR, the device shall be tested for leakage, and proper operation of any on-off mechanism or indicator, if any, tested at no longer than six month intervals, or as specified by the SSDR (10 CFR Part 31). **(T-0)**. All leak tests will be coordinated with the IRSO so that appropriate protocols and materials are used. **(T-1)**.

3.10.3.1.6. Units shall suspend operation of the device if there is damage/failure to the device's shielding, detection of removable contamination exceeding 0.005 microCuries, failure of its on/off mechanism or for any defects that could affect radiation safety. **(T-0)**. Defects shall be reported to the RIC in accordance with 10 CFR Part 21, this manual, and any RIC directions. **(T-0)**.

3.10.3.1.7. Report any incidents, thefts or loss of GLDs to the IRSO. **(T-1)**. The IRSO will in turn comply with the reporting requirements of this manual and any RIC directions. **(T-1)**.

3.10.3.2. IRSO responsibilities. Installation IRSO will assist units with GLD management to include: **(T-1)**.

3.10.3.2.1. Maintain a copy of the SSDR for the GLD on file **(T-1)**.

3.10.3.2.2. Assist and support units to maintain compliance with SSDR requirements, e.g. leak testing if required. **(T-1)**.

3.10.3.2.3. Shall update in RAMMIS, all relevant GLD use information, including changes to the storage location, the responsible unit, and current address. **(T-1)**.

3.10.3.2.4. Report any incidents, thefts or loss of GLDs in accordance with this manual any RIC directions. **(T-1)**.

3.10.4. Transfer of GLDs. Units shall not transfer GLDs, unless the entity possesses a specific license or permit for the item(s) (10 CFR Part 31). **(T-0)**.

3.10.4.1. All transfers of GLDs shall be coordinated through the IRSO. **(T-1)**.

3.10.4.2. Inventories must be updated in RAMMIS to reflect the transfer or movement. **(T-1)**. Report the transfer of generally licensed material to the RICS, with the information

required by the NRC in 10 CFR §31.5 and, provide a copy of the SSDR to the gaining unit. **(T-0)**. The gaining unit shall provide verification of receipt, to include serial numbers, to the losing unit. **(T-1)**.

3.10.4.3. A leak test and shutter test, if required by the SSDR, must be performed prior to transferring the device, and shipping procedures must be in accordance with 49 CFR Chapter I Subchapter C, DTR 4500.9-R-Part II, AFJI 23-504, AFMAN 24-204 and this manual. **(T-0)**

3.10.4.4. If a GLD is transferred to another unit, a RIC permit is required; transfer will not be authorized until a RIC permit is in place **(T-0)**. **Note:** Air Force Radioactive Recycling and Disposal (AFRRAD) has a permit to accept GLDs for disposition.

3.10.4.5. IRSO will assist unit gaining a transferred GLD with RIC permit application. **(T-1)**.

3.10.5. Disposition of GLDs. GLDs shall be properly disposed of in accordance with **Chapter 4** and AFJI 23-504. **(T-1)**. Transfer of GLDs to any organization, including AFRRAD, AF will be coordinated with IRSOs and the RICS. **(T-1)**. Disposition of GLDs in the AF will be coordinated with AFRRAD. **(T-1)**. **Note:** GLDs will not be transferred the Defense Reutilization Management Office/system, or a Disposition Services Field Office. **(T-1)**.

3.10.6. Work with the IRSO and RICS to know which parts apply to your RAM (as many will not apply to your situation). **(T-1)**. You may consult the RICS with any questions. If a conflict exists, then maintain records with the more stringent retention period. **(T-0)**.

3.11. Cessation of Operations and Terminating Permits.

3.11.1. If permitted operations cease, the Permittee must initiate decommissioning operations within two years of the date when use of the permitted operation stops. **(T-0)**. For permits that are anticipated to be in a no-operations and/or storage only status for an extended period of time (greater than one year) the Permittee should request a permit amendment to place the permit in a no-operations and/or storage only status. **(T-2)**. This also applies to permits in decommissioning status for which decommissioning actions are in abeyance for an extended duration.

3.11.2. An organization shall request termination of their permit within 30 days after appropriate disposal or transfer of all regulated RAM and conclusion of any required decommissioning operations. **(T-2)**.

3.11.3. Permittees shall execute the RICS-approved decommissioning plan, and properly dispose of all RAM through AFRRAD or in accordance with the decommissioning plan. **(T-1)**.

3.11.4. Permittees shall request an amendment to terminate a permit by submitting:

3.11.4.1. A completed NRC Form 314; **(T-0)**.

3.11.4.2. The last inventory and confirmation that the RAM was transferred and received by another Permittee, or NRC or Agreement State licensee, or shipped to a licensed broker for disposal. **(T-0)**. **Note:** Do not simply send documents showing stock listed items were turned into installation supply. Demonstrate that all materials received were either

disposed of, or transferred properly, and no permitted materials remain associated with the permit; (T-0).

3.11.4.3. Demonstrate, as applicable (e.g. final status survey), no RAM or residual contamination above limits for unrestricted release as prescribed in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, NUREG 1757, *Consolidated Decommissioning Guidance, Volume II, Characterization, Survey, and Determination of Radiological Criteria*, and Title 10 CFR Section 20.1402, *Radiological Criteria for Unrestricted Use*; and (T-0).

3.11.4.4. For permits authorizing possession only sealed or plated sources, a final leak test demonstrating source integrity. (T-0).

3.11.5. Upon termination of the permit, the RICS will determine the records required for retention. Documents such as records of personnel exposure investigations, spills and contamination are of relevancy. Store the files electronically for permanent archival storage after permit termination. (T-1).

3.12. Retaining Records. Records shall be retained for the receipt, storage, distribution, use, transfer, disposal and incident involving permitted or licensed RAM in accordance with criteria in 10 CFR Parts: 19 (notices, instructions, and reports to workers), 20 (radiation protection standards), 21 (defects and noncompliance), 30 (byproduct material), 31 (general byproduct license), 32 (specific byproduct license), 33 (broad scope byproduct license), 34 (industrial radiography), 35 (medical use), 36 (irradiators), 37 (increased controls), 40 (source material license), 51 (environmental protection), 70 (special nuclear material license), 71 (transportation), and 74 (control/accounting of SNM); and, as implemented in <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>. (T-0). **Note:** You may consult the RICS with any questions.

Chapter 4

RADIOACTIVE MATERIAL REMEDIATION AND DISPOSAL

4.1. Managing and Remediating Radioactive Material.

4.1.1. Manage and remediate radioactive waste sites according to AFI 32-7020, *The Environmental Restoration Program*, and policies established by USAF/A4. **(T-2)**.

4.1.2. Radioactive material remediation is a complex multi-phase, multi-agency process that is outlined in NUREG 1575. This chapter contains the major responsibilities for each agency and provides a chronological sequence of events, Figure 1, *Generalized Sequencing of Radiation Material Remediation Work*, that should be followed in order to ensure regulatory compliance.

4.1.3. USAF organizations are not authorized to possess radioactive investigation derived waste or radioactive remediation waste unless authorized by a specific permit. **(T-1)**.

4.1.4. Any USAF organization, or agency acting on behalf of the USAF, performing intrusive characterization or site remediation involving radioactive material (RAM), must have:

4.1.4.1. An NRC RAM license, Agreement State RAM license, USAF RAM permit, Veterans Affairs, or US Navy RAM permit that authorizes site remediation activities; and **(T-0)**.

4.1.4.2. Approval of the RICS or AFSEC/SEW, as appropriate; and **(T-1)**.

4.1.4.3. Experience with site remediation. **(T-3)**.

4.1.5. Remediating a site generates radioactive waste that must be controlled and properly disposed of in accordance with current AFCEC guidance. **(T-1)**. Remediating a site may also release waste in quantities that dictate a prompt total exhumation.

4.1.6. Work and health and safety plans for remediation of radioactive sites, to include waste disposal procedures, must be coordinated as detailed in this chapter. **(T-2)**. If, during the course of remediation, a site is found to contain RAM which was not anticipated, then work must be temporarily ceased and the IRSO must immediately notify the RICS or AFSEC/SEW as appropriate, to determine requirements for continuation of field activities. **(T-1)**.

4.1.6.1. Plans for sites containing or suspected to contain only 91(a) or 91(b) materials shall be submitted to the Weapons Safety Division of the AFSEC/SEW. **(T-2)**.

4.1.6.2. Plans for all other sites shall be submitted to the RICS for review. **(T-1)**. Those sites containing or potentially containing byproduct, source, NARM, and SNM covered under the MML will be forwarded by the RICS to the NRC for their review. **(T-1)**.

4.1.7. Final reports of remediation of all sites containing RAM shall be sent to the RICS or AFSEC/SEW, as appropriate, for archival purposes. **(T-1)**. The Air Force Radioactive Recycling and Disposal (AFRRAD) office will maintain and archive all disposal records and manifests for radioactive waste generated from a remediation. **(T-1)**.

4.1.8. The RICS will:

4.1.8.1. Conduct historical search of documents, maintained at AFMSA/SG3PB, pertaining to potential Radioactive Waste Sites (RWS) upon request.

4.1.8.2. Issue permits for those sites that are either confirmed to have material contamination or will require intrusive investigation to identify scope of contamination, with the exception of sites containing only 91(a) or 91(b) material. **Note:** the permit may be issued under the MML or this manual.

4.1.8.3. Act as an advisor for the AFCEC/Remedial Project Manager (RPM) for engaging with and addressing regulatory authority issues.

4.1.8.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans as appropriate.

4.1.8.5. Conduct site visits if needed before and during remediation and/or decommissioning to ensure compliance with RICS approved procedures.

4.1.8.6. Advise AFIA on inspection protocol for each USAF permitted remediation activities.

4.1.8.7. Terminate permits for those sites that satisfy unrestricted release criteria, in accordance with 10 CFR 20.1402.

4.1.8.8. Assist AF/A4C in maintaining site registry.

4.1.9. AFSEC/SEW will:

4.1.9.1. Conduct historical search of documents maintained by the AFSEC pertaining to potential RWS containing 91(a) or 91 (b) materials upon request.

4.1.9.2. Issue possession only permits for those registered sites that are either confirmed to have 91(a) or 91(b) material contamination or will require intrusive investigation to identify scope of contamination.

4.1.9.3. Provide weapons related information, as required, to assist AFCEC/Remedial Project Manager (RPM), USAFSAM, Air Force Radioactive Recycling and Disposal (AFRRAD), and AFMSA/SG3PB in determining the radionuclides present at a 91(b) site and act as an advisor for the AFCEC/RPM for engaging with and addressing regulatory authority issues.

4.1.9.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans as appropriate.

4.1.9.5. Conduct site visits before and during remediation and/or decommissioning to ensure compliance with AFSEC approved procedures.

4.1.9.6. Terminate possession only permits for those sites that satisfy unrestricted release criteria.

4.1.9.7. Assist AF/A4C in maintaining site registry.

4.1.10. AF/A4C will:

4.1.10.1. Maintain and manage the USAF Radioactive Waste Site Registry (RWS) that is an identification and tracking database of all suspected and confirmed USAF RWS.

4.1.10.1.1. Present RWS Area of Concern documentation to the RICS for review and validation.

4.1.10.1.2. Register RWS Area of Concern data, upon RICS approval, into the AF Radioactive Waste Registry. Provide an updated list of USAF RWS registry to the RICS before 31 December of each year.

4.1.10.2. AFCEC will: confirm with USAF/A4C or AFSEC/SEW the registration of the site in the AF Radioactive Waste Site Registry projects involving the remediation of known or suspected RWSs, and confirm with the RICS the status of permitting requirements. In the absence of an installation RPM, AFCEC will assume responsibilities of section 4.1.13.

4.1.11. USAFSAM will:

4.1.11.1. Consult with the RPM in evaluating information pertaining to a suspected impacted site. **(T-1)**.

4.1.11.1.1. Search historical records and coordinate with the RICS and AFSEC/SEW for data collection and information validation. **(T-1)**.

4.1.11.1.2. Assess potential source terms and conduct a preliminary risk assessment to assist with a relative risk determination. **(T-1)**.

4.1.11.2. Provide technical consultation and expert remediation guidance to the RPM. **(T-1)**.

4.1.11.3. Assist the RPM, installation staff judge advocate, and the RICS in determining cleanup levels and regulatory requirements. **(T-1)**.

4.1.11.4. Conduct scoping surveys of suspected impacted sites as requested by the IRSO. **(T-1)**.

4.1.11.5. Consult as requested on all installation level actions, analysis, reports and recommendations with the IRSO. **(T-1)**.

4.1.11.6. Act as technical advisor to AFMSA/SG3PB, the RIC and AFSEC/SEW. **(T-1)**.

4.1.11.6.1. Provide technical review for all remediation plans, decommissioning plans, and final status surveys, and provide recommendation of approval or disapproval to the RICS. **(T-1)**.

4.1.11.6.2. Provide a quality assurance function to the Remedial Action and Final Status Survey process (e.g., review of plan requirements, data quality review, adequacy of work, and review of findings). **(T-1)**.

4.1.11.6.2.1. Provide quality assurance sample analysis, (e.g., 10% splits, duplicates and spikes) and confirmatory survey analysis for any contracted remedial action at the request of the RICS. **(T-1)**.

4.1.11.6.2.2. Perform a field confirmatory survey (e.g. 10% scan, in-situ and removable swipe samples) for any contracted remedial action at the request of the RICS. **(T-1)**.

4.1.11.6.2.3. Coordinate funding of this requested work through RPM, if not a DHP supported activity. **(T-1)**.

4.1.12. The Base Civil Engineer will:

4.1.12.1. Contact the IRSO upon the discovery or knowledge of a location that may contain radioactive waste. **(T-1)**.

4.1.12.2. Ensure all areas of concern, to include permitted sites, are identified in Tab C-1 of the Installation Master Plan and that the site is not disturbed until a proper assessment is performed. **(T-1)**.

4.1.12.3. Ensure that confirmed or suspected RWS that present a health or environmental risk have:

4.1.12.3.1. Site access limited with a strong physical barrier such as a chain link fence or other measures, to prevent exposure of individuals to radioactive material (RAM). An inspection of physical barriers shall be conducted, at a minimum, annually. **(T-1)**.

4.1.12.3.2. Post site boundaries for each accessible side with RAM warning signs stating that the site contains buried RAM. Ensure the signs are properly maintained (condition, visibility and legibility). Inspection of signs shall be conducted, at a minimum, annually. Design and display shall be in accordance with Title 10 CFR Sections: 20.1901, *Caution Signs*, 20.1902, *Posting Requirements*, and 20.1903, *Exemptions to Posting Requirements*. **(T-0)**.

4.1.12.3.3. Protect the soil surface against erosion using grasses or other ground covers (such as stone or gravel) to maintain site stability. **(T-2)**. Keep the site clear of deep-rooted shrubs and trees. **(T-2)**.

4.1.12.4. Ensure no RWS is removed from the Installation Master Plan, transferred, released, or disregarded as a RWS until approved by the RICS. (T-1) AFSEC/SEW and/or USAFSAM are available for assistance.

4.1.13. The Remedial Project Manager (RPM) will:

4.1.13.1. Serve as the responsible agent for the overall management, budgeting, and execution of a radioactive material remediation project. **(T-2)**. The RPM will usually be a member of the installation environmental management office. **(T-2)**. RPM will budget for USAFSAM verification survey if it is an environmental site. **(T-2)**.

4.1.13.2. Ensure a suspected area of concern is registered through their chain of command with the RWS registry maintained by AF/A4C. **(T-1)**. **Note:** radioactive waste may be discovered on an existing Installation Restoration Program (IRP) site.

4.1.13.3. Contact the IRSO to request assistance from USAFSAM in conducting a scoping survey of a suspected RWS area of concern. **(T-2)**.

4.1.13.4. Develop and submit an application for a permit to the IRSO once a registered site is identified as positive for radioactive waste or before intrusive investigation commences. **(T-1)**. **Note:** classified sites or material will require special procedures.

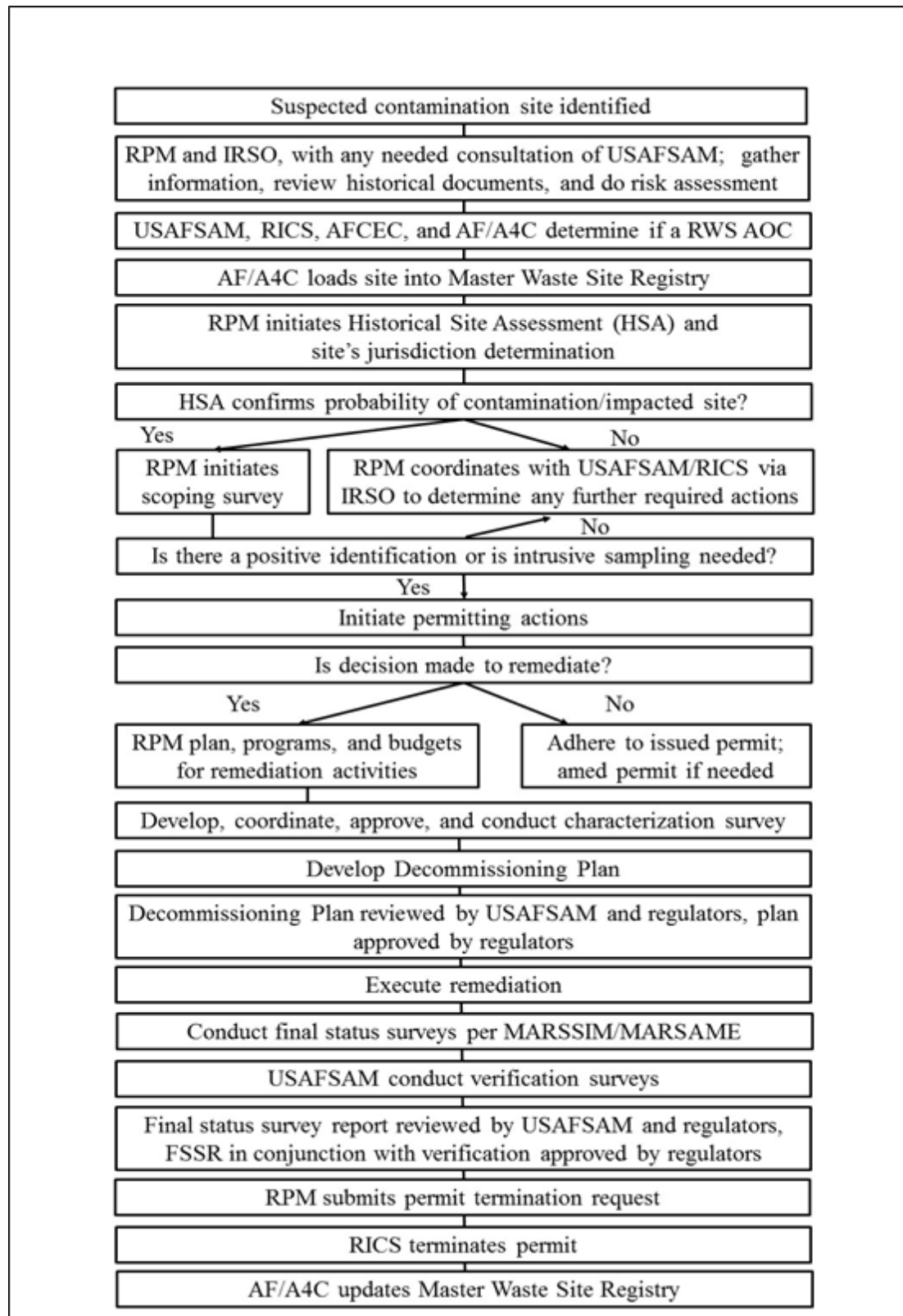
4.1.13.5. In conjunction with the IRSO:

4.1.13.5.1. Consult with AFCEC, as appropriate, for assistance in selecting a qualified contractor. **(T-2)**.

4.1.13.5.2. Consult with USAFSAM, the RICS, and regulatory agencies in selecting appropriate cleanup levels for remediation. **(T-1)**.

- 4.1.13.5.3. Request technical assistance from USAFSAM and the RICS in developing and executing decommissioning plans, site safety and health plans, and final status surveys. **(T-2)**.
- 4.1.13.6. Apply Multi-Agency Radiation Survey and Site Investigation Manual, and Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual survey methodologies (see NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, including *Supplement 1*) in developing all investigation and remediation work plans. **(T-1)**.
- 4.1.13.7. Submit for review and approval, decommissioning plans, site safety and health plans, and final status surveys to the IRSO who in turn submits them to the RICS. **(T-1)**.
- 4.1.14. The Installation Radiation Safety Officer (IRSO) will:
 - 4.1.14.1. Advise the Civil Engineer, RPM, commanders, and other base personnel on identification and remediation of potential public and occupational health risks associated with suspected or confirmed contaminated sites. **(T-1)**.
 - 4.1.14.2. Serve as the interface between the installation and the RICS, AFSEC/SEW and USAFSAM for all radiation related issues. **(T-2)**. When requested by the RPM, contacts USAFSAM and the RICS for technical assistance in developing decommissioning plans, remediation work site safety and health plans, and final status surveys. **(T-2)**.
 - 4.1.14.3. Submit an application for a permit to the RICS once a radioactive material impacted site is identified as positive or before intrusive investigation commences. **(T-1)**.
 - 4.1.14.4. Consult with AFCEC for assistance in selecting a qualified contractor. **(T-2)**.
 - 4.1.14.5. Review decommissioning plans, remediation work site safety and health plans, and final status surveys for the installation and submit them to the RICS for approval. **(T-1)**. Assures appropriate health physics oversight of the effort. **(T-1)**.
 - 4.1.14.6. Conduct annual surveys of radioactive waste sites to include:
 - 4.1.14.6.1. Visual inspection of the integrity of pipe caps or other closure devices that extend above ground. **(T-2)**.
 - 4.1.14.6.2. Conduct radiation surveys if there is an indication of intrusion or damage to the site. **(T-2)**.
 - 4.1.14.6.3. Ensure that fencing, security devices, and signage are in good order. **(T-2)**.
 - 4.1.14.7. Report to the RIC a release or exposure to RAM in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**.
- 4.1.15. The Air Force Inspection Agency will:
 - 4.1.15.1. Inspect, as appropriate, sites permitted under this chapter.
 - 4.1.15.2. Only inspect sites permitted by AFSEC upon their request.
- 4.1.16. The installation staff judge advocate will:
 - 4.1.16.1. Assist the RPM and the RICS in determining the legislative jurisdiction of contaminated sites where contractors will be performing work under their own (e.g., NRC or Agreement State) license. **(T-2)**.

4.1.16.2. Assist the RPM, USAFSAM, and the RICS in identifying applicable statutory and regulatory requirements and determining appropriate cleanup levels. **(T-2).**

Figure 4.1. Generalized Sequencing of Radiation Material Remediation Work.**4.2. Managing and Disposal of Radioactive Materials.**

4.2.1. IRSO and PRSOs jointly prepare requirements for waste management by considering local conditions such as quantities and types of waste produced, where waste is generated, and the location and configuration of available storage. **(T-2).**

4.2.1.1. The base Civil Engineer provides environmental consultation to generating units, the IRSO, and the Air Force Radioactive Recycling and Disposal (AFRRAD) office on the RCRA hazardous waste requirements of 91(b) mixed waste as related to the proper identification, handling, segregation, and storage of such waste. **(T-2).**

4.2.1.2. The base Civil Engineer oversees compliance with installation RCRA permits, if applicable, and/or RCRA requirements for storage, treatment, and disposal of mixed waste in accordance with applicable Federal, state, and local requirements, AFI 32-7042, *Waste Management*, and in coordination with the IRSO and the AFRRAD office. **(T-1).**

4.2.1.3. Installation generators will coordinate the disposal of radioactive waste and mixed waste with the IRSO, who will in turn, coordinate with the AFRRAD office. **(T-1).**

4.2.2. A USAF RAM permit is required for all radioactive waste storage areas used for permitted or licensed quantities of NRC regulated waste. **(T-1).**

4.2.2.1. Radioactive waste storage from more than one permit at a single location or otherwise co-mingling radioactive waste from more than one permit is prohibited unless specifically authorized by the RICS or AFSEC/SEW, as appropriate. **(T-1).**

4.2.2.2. Mixed waste from nuclear munitions maintenance shall not be commingled or stored with waste from a permit issued by the RICS unless approved by the RICS and AFSEC/SEW. **(T-1).**

4.2.3. Permittees shall ensure an inventory is maintained and all RAM and items containing or contaminated with RAM is secured pending disposal or transfer. **(T-0).**

4.2.4. Permittees shall also comply with all other applicable Federal, state, and local regulations and instructions regulating all hazardous and mixed waste at the site. **(T-0).** Coordinate with the base Civil Engineer to determine local requirements for managing and staging mixed waste. **(T-1).**

4.2.5. Radioactive waste shall be disposed of as soon as practical. **(T-3).** Under no condition shall mixed waste be staged for longer than 90 calendar days unless a RCRA permit authorizing storage for a longer period has been secured through the base Civil Engineer. **(T-1).** Do not collect or store radioactive waste for a period longer than 365 days. **(T-1).** Coordinate promptly with the AFRRAD office via the PRSO and IRSO. **(T-3).**

4.2.6. Dispose of RAM using one of the following methods:

4.2.6.1. Transfer to an authorized recipient (reference [paragraph 3.7](#)), subject to the restrictions of Title 10 CFR Section 20.2001, *General Requirements*; **(T-0).**

4.2.6.2. Decay in storage (for RAM having a physical half-life less than 120 days) provided:

4.2.6.2.1. Prior to disposal as ordinary trash, the container's surface and contents shall be surveyed with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from natural background; and **(T-0).**

- 4.2.6.2.2. All radiation labels and markings shall be removed or obliterated; and (T-0)
- 4.2.6.2.3. A record of each disposal shall be retained for 3 years. (T-0).
- 4.2.6.2.3.1. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal. (T-0).
- 4.2.6.2.3.2. Medical permittees must adhere to Title 10 CFR Section 35.92, *Decay-in-storage*. (T-0).
- 4.2.6.2.4. Permittees authorized to dispose by decay-in-storage will comply with the record keeping requirements prescribed in 10 CFR §35.92. (T-0).
- 4.2.6.3. Release to effluents in accordance with 10 CFR §20.2001, if authorized by the RICS. (T-0).
- 4.2.6.4. Release to the sanitary sewer in accordance with Title 10 CFR Section 20.2003, *Disposal by Release Into Sanitary Sewerage*, only if doing so has been determined by the base Civil Engineer to be permissible under the terms of the Clean Water Act permit and other applicable Federal, state, or local regulations (T-0); disposal by sanitary sewer, as described in 10 CFR §20.2003, applies only to circumstances where an installation is discharging effluent to a publicly owned treatment facility. Installations with their own sewage treatment facility must apply to the RICS for authorization to dispose of RAM in effluents in accordance with 10 CFR §20.2003; (T-0). or
- 4.2.6.5. Release Carbon-14 and Hydrogen-3 as non-RAM if it meets the requirements of Title 10 CFR Section 20.2005, *Disposal of Specific Wastes*, or other more stringent applicable Federal, state, or local regulations. (T-0).
- 4.2.7. Disposal by land-burial must be authorized by the AFRRAD office in accordance with [Chapter 4](#), to include adherence to Title 10 CFR Section 20.2006, *Transfer for Disposal and Manifests*. (T-0). Do not ship radioactive waste from an USAF installation without coordinating with AFRRAD and determining any required written instructions from AFRRAD. (T-1).
- 4.2.8. Permittees may propose alternative disposal procedures, in accordance with Title 10 CFR Section 20.2002, *Method for Obtaining Approval of Proposed Disposal Procedures*, to the RICS for approval.
- 4.2.9. PRSOs shall maintain RAM disposal records in accordance with Title 10 CFR Section 20.2108, *Records of Waste Disposal*, and as required in any RIC directions (T-0); IRSOs will assist PRSOs in the archival of disposal records with civil engineering, the RICS, etc. as appropriate. (T-3).
- 4.2.10. Organizations must be specifically permitted/licensed to receive waste containing RAM for (10 CFR 20.2108):
- 4.2.10.1. Treatment prior to disposal; (T-0).
- 4.2.10.2. Treatment or disposal by incineration; (T-0).

4.2.10.3. Decay in storage; **(T-0)**.

4.2.10.4. Disposal at a land disposal facility licensed under Title 10 CFR Part 61, *Licensing Requirement for Land Disposal of Radioactive Waste*; or **(T-0)**.

4.2.10.5. Disposal at a geologic repository under Title 10 CFR Part 60, *Disposal of High-level Radioactive Waste in Geologic Repositories*, or Title 10 CFR Part 63, *Disposal of High-level Radioactive Waste in a Geologic Repository at Yucca Mountain, Nevada*. **(T-0)**.

4.2.11. Requirements for Waste Generating Activities.

4.2.11.1. The PRSO will control access to laboratories or rooms where radioactive waste is generated or stored (storage area must provide sufficient protection to prevent degradation of packaging or the waste) when they are vacant or unattended. **(T-1)**.

4.2.11.2. The PRSO will maintain a log for information about radioactive material (RAM) placed into radioactive waste containers and record radiation levels. **(T-0)**. The log shall include: **(T-0)**.

4.2.11.2.1. Name of the installation;

4.2.11.2.2. The building and number of the room containing radioactive waste containers;

4.2.11.2.3. The types of containers and the identification number assigned to each container;

4.2.11.2.4. The date items were placed in the container;

4.2.11.2.5. A description of items placed in each container. Stock listed items shall contain a record each item's name and stock number. Sealed sources shall contain a record of the manufacturer; date manufactured, model, and serial number, if available. Identify other articles by their common names, for example, contaminated gloves, rags, and paper chucks;

4.2.11.2.6. The radionuclide(s) contained in the item;

4.2.11.2.7. The known or estimated radioactivity in curie or becquerel units. Do not abbreviate unit or prefixes;

4.2.11.2.8. The physical form of each radionuclide, for example, gas, solid, or liquid. **Note:** Do not treat radioactive waste by absorption of liquids, solidification of liquids or any other procedures that is designated for burial unless approval is obtained from the Air Force Radioactive Recycling and Disposal (AFRRAD) (reference [paragraph 4.2.13](#));

4.2.11.2.9. The chemical form of each radionuclide, for example, oxide, chloride, and the chemical name of the labeled compound;

4.2.11.2.10. The name and initials of the individual making the entry;

4.2.11.2.11. Meter readings in millirem or milliSievert per hour (mrem/hr or mSv/hr) measured outside the containers;

4.2.11.2.12. The name and initials of the individual conducting the survey; and

- 4.2.11.2.13. Evidence of PRSO and IRSO coordination, as applicable.
- 4.2.11.3. The PRSO will survey radioactive waste storage areas periodically to ensure compliance with 10 CFR Part 20 and document the results. **(T-0)**.
- 4.2.11.4. The PRSO will maintain records of all disposals of radioactive waste for the duration of the permit. **(T-0)**.
- 4.2.11.5. Before sealing a waste container, the PRSO must: **(T-1)**.
- 4.2.11.5.1. Verify for each waste container, the legibility and completeness of each waste entry, and visually inspect the containerized waste. To prevent contamination of personnel or the area, do not physically remove or handle the waste from the container.
- 4.2.11.5.2. Survey the container to ensure that detected radiation levels correspond to the entries recorded in the waste log. **Note:** A container storing a low-energy beta emitters or small quantities of a low-energy gamma emitter (e.g., Iodine-125) would not have high levels of x-ray or gamma radiation. Gamma surveys shall be conducted on these containers to ensure that high energy gamma emitting sources were not improperly placed in the container or that Bremsstrahlung radiation is not being produced at significant levels to cause a potential hazard.
- 4.2.11.5.3. The PRSO must secure the waste and records and investigate to resolve discrepancies if observations or measurements give unusual results.
- 4.2.11.6. Close and seal the plastic bag or container for transfer and disposal after the PRSO's audit. **(T-2)**.
- 4.2.12. Requirements and Rules for Storage of Radioactive Waste Containers.
- 4.2.12.1. Long-term storage is not encouraged and should be avoided. In general, store radioactive waste for no longer than one (1) year. **(T-1)**.
- 4.2.12.2. PRSOs must maintain a listing of all sealed radioactive waste storage containers and account for and inspect semiannually the integrity of each container. **(T-0)**. A record of the inspection shall be maintained for three (3) years. **(T-0)**.
- 4.2.12.3. A copy of the waste inventory sheet must be attached to each waste container held in long-term storage. **(T-1)**.
- 4.2.12.4. Do not open waste containers to conduct periodic inspections. **(T-1)**.
- 4.2.12.5. Ensure storage areas are properly ventilated prior to survey. **(T-1)**.
- 4.2.12.6. The PRSO shall conduct a final inspection of radioactive waste containers for integrity of the container and container seal; accuracy and completeness of log entries; proper markings and labels; and perform required surveys prior to removing the containers for transfer or disposal. **(T-1)**.
- 4.2.12.7. The PRSO will file inventory sheets and waste logs in the PRSO's permanent records of the permit authorizing long-term storage of the waste after disposal or transfer of each waste container. **(T-0)**.
- 4.2.12.8. Do not store liquid waste more than one (1) year. **(T-1)**. Solidify the waste with the help of AFRRAD. **(T-1)**.

4.2.13. Disposal by Burial or Recycling.

4.2.13.1. Radioactive sources no longer needed by the Permittee, and not authorized for decay-in-storage, may be disposed by burial or recycling. All requests for disposal by burial or recycling will be made, in writing, to AFRRAD. **(T-1)**. Written requests shall include the following information: **(T-1)**.

4.2.13.1.1. NSN or part number and manufacturer's name or code of the radioactive source, if applicable;

4.2.13.1.2. Nomenclature (e.g., lensatic/military compass, tube assembly, test sample);

4.2.13.1.3. Quantity of each item or amount of waste in terms of cubic feet;

4.2.13.1.4. Radionuclide(s);

4.2.13.1.5. Physical Form (e.g., solid, liquid, gas) to include any known hazardous waste constituents;

4.2.13.1.6. Chemical form;

4.2.13.1.7. Estimated radioactivity per item, and total radioactivity in milliCuries, and in becquerels, for each container; and

4.2.13.1.8. Radiation exposure rate in millirem per hour (milliSievert per hour) at 4 inches from surface of unpackaged item (for items only).

4.2.13.2. Installations located overseas are authorized to dispose of waste in the host country where they are geographically located to the extent that such disposal is in compliance with applicable host nation regulations and agreements and has been approved by the responsible (cognizant) host nation authority, approved by the RICS, and determined to be consistent with applicable Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive.

4.2.14. Exempt Quantity Item Disposal. Electron tubes and spark gaps containing RAM can be disposed of as normal trash providing the following conditions are satisfied:

4.2.14.1. Store electron tubes or spark gaps in a way that will prevent breakage. Each tube or spark gap must contain less than the quantities listed in 10 CFR 30.15 (do not accumulate exempt quantities) or does not contain more than the exempt quantity of NARM materials specified in [paragraph 3.10](#); **(T-0)**. and

4.2.14.2. The levels of radiation from each electron tube or spark gap does not exceed one (1) milliRoentgen per hour on contact when measured with a proper radiation detection instrument; **(T-1)**. and

4.2.14.3. Disposal is authorized by applicable host nation, state or country statutes and regulations. In overseas locations make the further determination that burial is determined to be consistent with applicable Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive. **(T-0)**.

Chapter 5

RADIOACTIVE MATERIAL INCIDENTS AND MISHAPS

5.1. Reporting Radioactive Material Incidents and Mishaps.

5.1.1. Follow reporting criteria and time limits in 10 CFR Parts 19 (notices, instructions, and reports to workers), 20 (radiation protection standards), 21 (defects and noncompliance), 30 (byproduct material), 31 (general byproduct license), 32 (specific byproduct license), 33 (broad scope byproduct license), 34 (industrial radiography), 35 (medical use), 36 (irradiator), 37 (increased controls), 40 (source material license), 51 (environmental protection), 70 (special nuclear material license), 71 (transportation), and 74 (control/accounting of SNM). **(T-0)**. Make reports to the RICS, not the NRC. **(T-1)**. **Note:** You may consult the the IRSO and/or RICS to know which parts apply to your RAM.

5.1.2. The Permittee, the PRSO, and the IRSO must reinforce each other to ensure the RICS receives reports required by 10 CFR Chapter I. **(T-1)**. Report an incident if you have any reservations about whether reporting is required. **(T-1)**.

5.1.3. Report incidents initially by telephone (installations outside the US may report by message/email) and confirm by fax or message. **(T-1)**. Report to AFMSA/SG3PB (RICS). **(T-1)**.

5.1.3.1. To report after normal duty hours, call the Andrews Regional Command Post, DSN 858-5058, or (301) 981-5058. **(T-1)**. Give your name, organization, DSN and commercial phone numbers. **(T-1)**. State that you are calling with a "radioactive material incident report" and ask for the AFMSA/SG3PB (RICS) duty officer. **(T-1)**.

5.1.3.2. Inform the Installation Chief of Safety, MAJCOM/SEW, and IRSO of any INRAD or 91(b) material mishaps in accordance with AFI 91-204, *Safety Investigations and Reports*. **(T-2)**.

5.1.3.3. The Unit Radiation Safety Officer or Weapons Safety Officer, in accordance with AFI 91-108, will inform HQ AFSEC/SEW through AF Safety Automated System of any abnormal exposures and/or suspected overexposures to personnel or the public from a mishap involving INRAD or 91(b) material. **(T-2)**.

5.1.4. Time limits for reports begin when the event occurs or is first discovered. Incidents requiring an immediate report must be forwarded within three (3) hours. **(T-1)**. Realize the RICS must contact the NRC in turn and the Air Force has a total of four (4) hours to make an immediate report notification to the NRC **(T-0)**.—make every effort to report well before the stated reporting suspense. **(T-1)**. Include as much of the information as possible, but do not delay reporting if you have not collected all the pertinent information. **(T-0)**.

5.1.5. The RICS directs follow-on written reports or information needed to comply with NRC regulations.

5.1.6. A copy of all written reports must be forwarded to the IRSO, Installation Commander, MAJCOM bioenvironmental engineer, and AFIA/SG. **(T-2)**.

5.1.7. The requirements in [paragraphs 5.1.1](#) through [5.1.6](#) are separate from the reporting requirements of AFMAN 10-206, *Operational Reporting*, and AFI 91-204. This manual does

not prescribe the reporting requirements of incidents or mishaps involving only nuclear weapons, nuclear weapons parts, reactors and fuel assemblies, and space systems exempted from NRC regulatory authority under AEA, Section 91(b).

5.1.8. EPA regulations require reporting releases of RAM characterized as hazardous substances under 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*. **(T-0)** The EPA lists some of the chemical forms of radionuclides and many of the non-radioactive chemical constituents that may be part of the release with radionuclides as a result of an industrial process. Report spills of radionuclides or mixed hazardous materials to the environment in accordance with AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*. **(T-2)**. These reports will typically be separate from the reporting requirements described in this manual.

5.1.9. Radiological incidents that could potentially expose members of the general public or accidental releases of RAM to the environment must be reported to civilian authorities (Emergency Planning and Community Right-to-Know Act). **(T-0)**. The IRSO provides information, approved by the installation commander, and released through the installation public affairs office, of these types of incidents. **(T-2)**. Security restrictions on classified or sensitive information shall be adhered to except in cases of immediate risk to health and/or significant environmental impact. **(T-0)**.

5.1.10. Safeguard classified information when making reports. **(T-0)**. Special care shall be taken when reporting and investigating an incident or mishap under AFI 91-204 to ensure that reports forwarded to the RICS do not contain classified or sensitive unclassified information. All information will be properly marked and secured from unauthorized access, as applicable. **(T-0)**. All reports involving RAM exceeding NRC quantities of concern shall be handled as sensitive information and transmitted as directed by the RICS per NRC requirements of 10 CFR Part 37. **(T-0)**.

5.1.11. By Federal law, the USAF must give the NRC certain types of information normally protected from public release, to include personally identifiable information and exact locations of RAM. **(T-0)**. When investigating the cause of an incident or mishap and the involvement of persons for reports under this manual, maintain confidentiality of information. **(T-0)**.

5.2. Investigating Radioactive Materials Incidents and Mishaps.

5.2.1. The Permittee is responsible for investigating, performing a root cause analysis in accordance with accepted AF methodologies, and preparing a report on events, such as overexposure or loss of material, exact requirements are dependent on RAM and referenced [paragraph 5.1.1](#), in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**.

5.2.2. The Commander of the permit holding organization is responsible for the investigation and report for reportable events involving non-permitted radioactive material (RAM). **(T-1)**. The PRSO, assisted by the IRSO, normally performs the investigation. **(T-3)**.

5.2.3. Investigating a mishap or incident according to AFI 91-204 may generate information requiring a separate report that can be forwarded to the NRC. Reference [paragraphs 5.1.10](#) and [5.1.11](#). about protecting classified information. Installations may consult with the RICS as needed.

5.2.4. Forward reports to organizations listed in [paragraph 5.1.6](#). (T-1).

5.2.5. The RICS will decide when an investigation of an event involving RAM governed by this manual is complete.

5.2.6. The NRC, AFIA/SG, or the RICS reserves the right to independently investigate an incident or mishap involving permitted or NRC-licensed RAM to confirm USAF reports or to decide whether the installation violated permit conditions, this manual or Federal regulations.

Chapter 6

INSPECTION AND ENFORCEMENT

6.1. Inspecting Permit Holders and Enforcing Compliance.

6.1.1. Inspections: Inspections of permittees' issued USAF radioactive material (RAM) permits shall be conducted by AFIA/SG, the RICS, and/or the NRC. Unannounced inspections are routinely conducted to assess compliance with permit conditions, AF instructions, and Federal regulations. Detailed inspection policy for permits is provided in [paragraph 6.2](#).

6.1.1.1. The permit type and scope sets the frequency and content of routine AFIA/SG inspections.

6.1.1.2. An inspection category is assigned to each permit along with the corresponding inspection frequency, which is stated on the cover letter issued with the permit, or its amendment or renewal. More frequent inspections may be made based on scale of economies during travel, to enforce compliance, evaluate a specific problem or follow-up to determine if corrective actions have been taken.

6.1.1.3. Copies of USAF inspection reports are forwarded to:

6.1.1.3.1. The Permittee and PRSO;

6.1.1.3.2. The owning MAJCOM bioenvironmental engineer;

6.1.1.3.3. The RICS (AFMSA/SG3PB); and

6.1.1.3.4. The NRC, if the permit is issued under the MML.

6.1.1.4. Mark, handle and safeguard these reports according to AFI 90-201.

6.1.1.5. Permittees must report corrective actions for noncompliance in accordance with this manual and AFIA/SG. **(T-1)**.

6.1.1.6. The NRC regional offices conduct permit compliance inspections without notice as part of the NRC's continual assessment of the USAF's permitting and inspection program.

6.1.1.6.1. NRC inspections may be concurrent with, or separate from, the USAF's permit compliance inspections.

6.1.1.6.2. The NRC will send a formal inspection report to the RICS with a Notice of Violation (NOV) for any areas of non-compliance noted during an NRC inspection.

6.1.1.6.3. The RICS will subsequently send a copy of the inspection to the Permittee, and when required, request a written response detailing any corrective actions for NOV's noted.

6.1.1.6.4. The RICS will provide copies of both the NRC inspection report and any written response from the Permittee to AFIA/SG.

6.1.2. Enforcement: The RICS may take enforcement action as a result of reported incidents, inspection findings, or identified violations. Enforcement details are provided in [paragraph 6.3](#).

6.1.2.1. The RICS takes administrative enforcement actions including:

6.1.2.1.1. Issuances of NOVs;

6.1.2.1.2. Adjusting AFIA/SG findings and NOVs;

6.1.2.1.3. Suspending or rescinding authority to possess or use RAM;

6.1.2.1.4. Implementing additional control measures to permits; and/or

6.1.2.1.5. Rescinding a person's authority to use or supervise use of RAM.

6.1.2.2. Commanders retain responsibility for the discipline of individuals according to the Uniform Code of Military Justice. **(T-3)**.

6.1.2.3. The NRC can also enforce regulatory compliance in accordance with Title 10 CFR Part 2, *Agency Rules of Practice and Procedure*. The NRC's enforcement policy and enforcement procedures can be found on the NRC's website.. **Note:** The NRC also issues press releases on enforcement actions.

6.1.2.4. Approval and acceptance of Permittee corrective actions are completed by the RICS.

6.2. Inspection Policy.

6.2.1. Introduction. The inspection program for permitted and generally licensed radioactive material (RAM) serves to assess compliance with permit conditions and Federal regulations (e.g., NRC and Department of Transportation). The frequency and duration of the inspection shall be based on the inspection category assigned by the RICS, complexity of the permit, overall risks of the permitted activity, and opportunity to witness infrequent or unique procedures. In addition to AFI 90-201, *The Air Force Inspection System*, requirements:

6.2.2. Inspection Protocol.

6.2.2.1. The U.S. Nuclear Regulatory Commission (NRC) shall have identification and, as necessary, be able to demonstrate appropriate clearance. The Permittee has a right and duty to challenge unknown individuals presenting themselves as inspectors.

6.2.2.2. Inspections are conducted in accordance with AFI 90-201. Inspections may be conducted at times outside of normal duty hours; specifically, when the use or receipt of permitted material is outside of normal duty hours.

6.2.2.3. A unit that has deployed the PRSO and does not have an available alternate PRSO is still subject to inspection. The permit shall be revised to possession only during the PRSO deployment and an administrative officer should be named to the permit. **(T-1)**. Failure to comply with the conditions of the permit, this manual or applicable Federal regulations may result in a violation for non-compliance; particularly, if permitted material is not properly secured and controlled.

6.2.2.4. The RICS will receive and forward all NRC inspection reports as appropriate. The RICS will ensure NRC violations get loaded into Inspector General Management Evaluation System for appropriate tracking and closure.

6.2.3. Inspection Types.

6.2.3.1. New Permit Inspections (Announced) shall be conducted approximately six months after permitted materials are received. Permittees are required to immediately notify AFIA/SG when permitted materials have been received.

6.2.3.2. Routine Permit Inspections (Unannounced) shall be conducted at intervals established by the permit. Inspection frequency may be changed based on Permittee performance.

6.2.3.3. Follow-up Permit Inspections (Announced) shall be conducted when permittees receive Severity Level I-III violations as the result of an AF or NRC inspection. Inspections of this type will be requested by the RICS and conducted by AFIA/SG. They will occur no later than six months following closure of corrective actions. In addition, RICS and AFIA staff will review like permits with the potential for similar violations and may direct off cycle inspection or staff assistance visits.

6.2.3.4. Collaborative Permit Inspections: AFIA/SG may choose to accompany the NRC during an inspection. NRC inspections may occur at any time and are not bound by the intervals established by the permit or recentness of the last AFIA/SG inspection. Normally AFIA will accompany the NRC during their inspections; however if they are unavailable, a member from the RICS may accompany the NRC inspector. Conversely, the NRC may choose to accompany AFIA/SG during an inspection. Typically, the NRC does not issue a report under these conditions.

6.2.3.5. Incident Inspections (Announced) may be conducted based on concern expressed by the RICS, the NRC or following a significant event (e.g., personnel health and safety violations, loss of control of RAM, radiation exposure exceeding regulatory guidelines, natural disaster or equipment failures). In these instances, AFIA/SG or AFMSA/SG3PB may conduct an off- cycle visit or inspection either unannounced or scheduled. This type of inspection is generally not rated but a report may be generated.

6.2.3.6. Consultancy Inspections (Announced), upon request of the Permittee, AFIA/SG or AFMSA/SG3PB, may conduct a scheduled visit to identify areas where assistance and improvements can be made. Furthermore, AFIA/SG or AFMSA/SG3PB may conduct a scheduled visit to advise the Permittee on how to implement new AFIs or Federal regulations. Consultancy visits, requested by the Permittee, are generally funded by the requesting organization. This type of visit shall not be rated but a report should be generated.

6.2.3.7. Permit Termination Audits (Announced): a termination audit may be scheduled and conducted during or following the termination of a broad scope permit, remediation activity or permitted activity involving significant amounts of unsealed RAM, to assure the criteria of 10 CFR 20, Subpart E are met. This type of audit shall not be rated but a report may be generated. **Note:** auditable records include the decommissioning plan if applicable, the final status survey report if applicable, NRC or Agreement State memoranda documenting acceptance of the final status survey report and approval for permit termination as applicable, the NRC Form 314, *Certificate of Disposition of Materials* (with all applicable attachments), the signed termination permit amendment from the RICS, and RICS memoranda documenting any long-term alternate or additional instructions.

6.2.3.8. Special Emphasis Inspections (Announced/Unannounced): certain topics to be researched, as requested by the RICS are conducted by AFIA/SG. These Special Emphasis Item (SEI) studies are conducted according to AFI 90-201. SEIs are normally terminated within 6-12 months, and the results are briefed at the IG-SG Annual Review.

6.2.4. Severity Levels of Violations.

6.2.4.1. AF-issued violations will be consistent with the categories defined in the NRC Enforcement Manual and NRC Enforcement Policy: Minor, Non-Cited, and Severity Levels I through IV.

6.2.4.2. Comparisons of severity between disparate activities (e.g., nuclear medicine vs. gauges) will not be made. Severity is assigned on a case-by-case basis. Repeat violations, willfulness and false representations will influence the severity of a violation.

6.2.5. Inspection Violations and Actions.

6.2.5.1. Minor and Non-cited. Permittees have no follow-up actions resulting from minor and non-cited violations.

6.2.5.2. Severity Level IV. Permittees shall have five (5) duty days from the receipt of the report to respond in writing to the RICS, AFIA/SG and their respective MAJCOM. **(T-1)**. The RICS reserves the right to accelerate the time of the response. The RICS may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

6.2.5.3. Severity Level I-III. Permittees shall have five (5) duty days from the receipt of the report to respond in writing to the RICS, AFIA/SG and their respective MAJCOM. **(T-1)**. Permittees shall respond by email or in writing, within 24 hours upon verbal notification to the RICS; the Permittee shall provide immediate actions taken to mitigate the violation. **(T-1)**. The RICS will coordinate/seek concurrence with the NRC on mitigation actions and timelines. The RICS reserves the right to accelerate the time of the response. The RICS may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

6.2.5.4. The Permittee must initiate corrective actions in advance of any report. **(T-1)**.

6.2.6. Ratings. AFIA/SG will issue either a rating of "Compliant" or "Not Fully Compliant" in the final report.

6.2.7. Corrective Actions. Permittees shall respond to the violations according to the provisions of this chapter. **(T-1)**. Response to violations shall contain, at a minimum, the following:

6.2.7.1. Reference to the violation(s). **(T-1)**.

6.2.7.2. Complete description of how the violations(s) were or will be corrected to include: **(T-1)**.

6.2.7.2.1. The root cause for the violation(s) or, if contested, the basis for disputing it,

6.2.7.2.2. Corrective actions that have been taken and the results achieved,

6.2.7.2.3. Corrective actions that will be taken to avoid future violations, and

6.2.7.2.4. Timeline, with milestones, for corrective actions and date when full compliance was or will be achieved.

6.2.7.3. Designation of an office for monitoring corrective measures, to include a point of contact. (T-1).

6.2.8. Disposition.

6.2.8.1. Closure: upon receipt of a response to the violation from the Permittee, the RICS shall consider the merit of the corrective actions and, if satisfied, close out the deficiency in Inspector General Management Evaluation System.

6.2.8.2. Non-Closure: if the RICS determines corrective actions are not acceptable to close the violations, enforcement actions may be taken according to [paragraph 6.3](#). Enforcement actions shall be submitted to the Permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

6.3. Enforcement Actions.

6.3.1. Introduction and Basic Enforcement Actions. This section describes the enforcement actions available to the RICS in the administration of the USAF MML, and specifies the conditions under which each may be used. The basic enforcement actions are Notices of Violation and Orders of various types. Enforcement action is usually taken whenever a violation of permit requirements or regulations of more than a minor concern is identified. The nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved. For the vast majority of violations, a Notice of Violation (NOV) is the usual action. NOVs are sent to the Permittee, with copies to AFIA/SG (when not issued by AFIA), and MAJCOM Bioenvironmental Engineer. They specify the nature of the violation(s) (e.g., permit condition, this manual, or Federal regulations) and require a response for corrective action by a set date. The RICS shall, in the administration of the MML, keep the assigned NRC Program Manager informed regarding enforcement actions.

6.3.2. Escalated Enforcement Actions, RIC and RIC Secretariat Directives. Whenever inspections identify conditions or violations that result in significant regulatory concern, escalated enforcement action through an issued order is considered. As authorized by this manual and AFPD 40-2, a directive order is a mandatory written order to modify, suspend, or to cease and desist from a given practice or activity; or to take additional action as deemed appropriate. Orders may be issued in lieu of, or in addition to NOVs, generally for Severity Level I, II, or III violations or other conditions that cause significant regulatory concern. Orders are mandatory and made effective immediately. Orders may be executed without prior notice or consultation with the Permittee whenever it is determined that the public health, interest, or safety requires, or when the order is responding to a violation involving willful negligence. For other cases, the Permittee shall be afforded an opportunity to demonstrate why the order should not be issued. Orders may be issued as follows:

6.3.2.1. Permit Modification Orders are issued by the RICS when a change in Permittee equipment, procedures, personnel, or management controls is necessary.

6.3.2.2. Suspension Orders are issued by the RICS and signed by AFMSA/SG3P and may apply to all or part of the permitted activity. Ordinarily, a permitted activity is not suspended (nor is a suspension prolonged) for failure to comply with requirements where

such failure is not of willful intent and adequate corrective action has been taken. Suspension Orders may be used to remove a threat to the public health and safety, or the environment:

6.3.2.2.1. When the Permittee has not responded adequately to other enforcement action;

6.3.2.2.2. When the Permittee interferes with the conduct of an inspection or investigation; or

6.3.2.2.3. For any reason not mentioned above for which permit activity suspension is authorized by the RICS in coordination with AFMSA/SG3P.

6.3.2.3. Revocation/Termination Orders are issued by RICS and signed by AFMSA/SG3P:

6.3.2.3.1. When a Permittee is unable or unwilling to comply with permit requirements;

6.3.2.3.2. When a Permittee refuses to correct a violation;

6.3.2.3.3. When a Permittee does not respond to a NOV when a response was required by the RICS; or

6.3.2.3.4. For any other reason for which revocation is authorized by the RICS in coordination with AF/SG3P (i.e., any condition that would warrant refusal of a permit on an original application).

6.3.2.4. Cease and Desist Orders are issued by the RICS and may be used to stop an unauthorized activity that continues after being notified by the RICS that the activity has been deemed unauthorized.

6.3.2.5. Confirmatory Action Letters are issued by the RICS confirming a Permittee's agreement to take certain actions to eliminate significant concerns about health and safety, safeguards, or the environment.

6.3.2.6. Demands for Information are mandated requests of information from permittees or other persons for the purpose of enabling the RICS to determine whether an order or other enforcement action should be issued. Demands for Information may be issued by either the RIC or the RICS.

6.3.2.7. Other Orders: in addition to the Orders describe above, Orders may be issued to permittees that include but are not limited to:

6.3.2.7.1. Divert facility financial resources to purchase, replace, or excess and dispose of certain equipment;

6.3.2.7.2. Increase the frequency of facility safety committee meetings;

6.3.2.7.3. Implement meetings between the facility executive management and the RSO on a frequent and routine basis;

6.3.2.7.4. Perform additional or supplemental training to Permittee staff;

6.3.2.7.5. Increase frequencies of facility internal audits or other internal surveillance; and/or

6.3.2.7.6. Appear before the RIC to present corrective actions and associated implementation timelines.

6.3.3. Factors Impacting Escalated Enforcement Actions.

6.3.3.1. Initial Escalated Action: When the RICS is made aware of conditions or violations where escalated enforcement action may be necessary, deliberations are held to determine the severity level of the findings and factors that may affect that level. Serious findings will often include deliberations with the NRC. If it is established that a willful Severity Level III violation or problem has occurred, and the Permittee has not had any previous escalated actions (regardless of the activity area) during the past two (2) years or two (2) inspection cycles, whichever is longer, the RICS will consider whether the Permittee's corrective action for the noted violation or problem is reasonably prompt and comprehensive. The starting point of this period shall be considered the date when the Permittee was put on notice to take corrective action.

6.3.3.2. Credit for Actions Related to Identification: If a Severity Level I or II violation or a willful Severity Level III violation has occurred, or if, during the past two (2) years or two (2) inspection cycles, whichever is longer, and the Permittee has been issued at least one other escalated action, the escalated enforcement actions shall consider the factor of identification in addition to corrective action. The decision on identification requires considering all the circumstances of identification including:

6.3.3.2.1. Whether the problem requiring corrective action was AFIA/SG-identified, RICS-identified, Permittee-identified, or discovered through an event;

6.3.3.2.2. Whether prior opportunities existed to identify the problem requiring corrective action and if so, the age and number of those opportunities;

6.3.3.2.3. Whether the problem was discovered as the result of a Permittee's self-monitoring effort, such as conducting an audit, a test, a surveillance, a design review, or troubleshooting;

6.3.3.2.4. For a problem discovered through an event, the ease of discovery, and the degree of Permittee initiative in identifying the root cause of the problem and any associated violations;

6.3.3.2.5. For AFIA/SG identified issues, whether the Permittee would have likely identified the issue in the same time-period if the Agency had not been involved;

6.3.3.2.6. For AFIA/SG identified issues, whether the Permittee should have identified the issue (and taken action) earlier; and

6.3.3.2.7. For cases in which AFIA/SG identifies the overall problem requiring corrective action (i.e., a programmatic issue), the degree of Permittee initiative or lack of initiative in identifying the problem or problems requiring corrective action.

6.3.3.3. Prompt and Comprehensive Corrective Action is required for all MML violations. **(T-0).** In most cases, the RICS does not propose escalated enforcement actions where the Permittee promptly identifies and comprehensively corrects violations. However, a Severity Level III violation or higher will almost always result in escalated enforcement actions if a Permittee does not take prompt and comprehensive corrective actions to address the violation. The following factors are considered:

6.3.3.3.1. Timeliness and Extent of Corrective Action.

6.3.3.3.1.1. Consideration will be given to the:

6.3.3.3.1.1.1. Timeliness of the corrective action (including the promptness in developing the schedule for long term corrective action);

6.3.3.3.1.1.2. Adequacy of the Permittee's root cause analysis for the violation; and

6.3.3.3.1.1.3. Comprehensive nature of the corrective action (i.e., whether the action is focused narrowly to the specific violation or broadly to the general area of concern).

6.3.3.3.1.2. Whether or not the Permittee has taken immediate actions necessary, upon discovery of a violation, that will restore safety, and return the permit to full compliance; and

6.3.3.3.1.3. Whether or not the Permittee has developed and implemented lasting actions that will not only prevent recurrence of the violation, but will be comprehensive enough, given the significance and complexity of the violation, to prevent occurrence of violations with similar root causes.

6.3.3.3.2. Adequacy of Corrective Actions: AFIA/SG will assist the RICS to determine adequacy of correction actions to violations. The RICS shall determine the adequacy of corrective actions to violations that are self-identified, result from an event, or are MML identified. The judgment of the adequacy of corrective actions may also occur at the time of an enforcement conference (i.e., by outlining substantive additional areas where corrective action is needed).

6.3.3.3.3. Corrective Action Process: the following shall be used for developing and implementing corrective actions. Corrective action shall be comprehensive enough to not only prevent recurrence of the violation at issue, but also to prevent occurrence of similar violations. These items should help in focusing broad corrective actions to the general area of concern rather than to specific violations. The actions that need to be taken are dependent on the facts and circumstances of the particular case. The corrective action process should involve the following steps:

6.3.3.3.3.1. Conduct a complete and thorough review of the circumstances that led to the violation;

6.3.3.3.3.2. Identify the root cause of the violation; and

6.3.3.3.3.3. Take prompt and comprehensive corrective action that will address the immediate concerns and prevent recurrence of the violation.

6.3.4. Enforcement Conferences.

6.3.4.1. When a Permittee has been issued an NOV and fails to conform to effective corrective actions, the RICS may decide to initiate an enforcement conference with the Permittee to define the actions necessary to begin effective corrective measures to the violation. The RICS will issue official correspondence to the Permittee informing them of the enforcement conference. The enforcement conference can be implemented by any necessary means to affect a productive dialogue between the Permittee and the RICS.

6.3.4.2. The purpose of the conference is for the RICS to gather the necessary facts and information from the Permittee in order to make an informed decision about the violation. Objectives of the conference will include determining:

6.3.4.2.1. The root cause and analysis of the violation(s);

6.3.4.2.2. That a Permittee's response is deemed timely and appropriate; and

6.3.4.2.3. That corrective actions to prevent similar recurrence of the violation(s) have been taken.

6.3.4.3. Results of the enforcement conference will be formalized by the RICS with correspondence to the Permittee describing the actions the Permittee must perform to resolve the violation(s).

6.3.5. **Appealing Enforcement Actions.** The Permittee or any other person adversely affected by an NOV or Order may appeal said action. The Permittee may submit an appeal via official correspondence to the RICS for the violations and findings. The Permittee must provide ample regulatory justification in the correspondence to warrant an appeal of the violations. **(T-1).** The RICS shall review the appeal by the Permittee and decide actions to be taken based on the merit of the request, corrective actions taken by the Permittee, and the severity levels of the violations. The RICS may at its option, initiate a review of Permittee program operations concerning the enforcement action, grant the appeal to mitigate the severity level of the violation and/or enforcement actions, or deny the appeal.

6.3.6. **NRC Related Administrative Actions.** In addition to the enforcement actions by the RICS, the NRC also uses administrative actions, such as Notices of Violation, Notice of Deviation, Notices of Nonconformance, Confirmatory Action Letters, Letters of Reprimand, and Demands for Information to supplement its enforcement program. The NRC may issue orders and impose civil penalties for violations of NRC regulations and MML conditions. Note that any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued and any response must be posted by the Permittee in accordance with 10 CFR §19.11.

6.3.6.1. **Civil Penalty:** only the NRC may impose civil penalties. A civil penalty is a monetary penalty that may be imposed by the NRC for violation of certain specified licensing provisions of the Atomic Energy Act or supplementary NRC rules or orders, any requirement for which a MML permit or NRC license may be revoked, reporting requirements under Section 206 of the Energy Reorganization Act, and NRC Regulations and MML program conditions. If the application of the normal guidance in this policy does not result in an appropriate sanction, as warranted, then the NRC may apply its full enforcement authority where the action is warranted. NRC action may include civil penalties, issuing appropriate orders, and assessing civil penalties for continuing violations on a per day basis, up to the NRC limit per violation.

6.3.6.2. **Mitigation of Enforcement Actions:** the NRC may exercise discretion and refrain from enforcement action, if the outcome of the normal process described in this policy does not result in a sanction consistent with an appropriate regulatory message. In addition, even if the NRC exercises this discretion, when the Permittee failed to make a required report to AFIA/SG or the RICS, a separate enforcement action may be issued for the Permittee's failure to make a required report.

6.3.7. Enforcement Actions Involving Individuals. An enforcement action against an individual will be taken only when the RICS is satisfied that the individual fully understood, or should have understood, his or her responsibility; knew, or should have known, the required actions; and knowingly, or with careless disregard (i.e., with more than mere negligence) failed to take required actions which have actual or potential safety significance. Transgressions of individuals at the level of Severity Level III or IV violations will be handled by citing the facility Permittee with a requirement that specific actions concerning the individual be taken.

6.3.7.1. Management Failures: action against an individual will not be taken if it demonstrates that the improper action by the individual was caused by management failures. The following are examples of situations to illustrate this concept but do not represent all potential cases:

6.3.7.1.1. Inadvertent individual mistakes resulting from inadequate training or guidance provided by the Permittee;

6.3.7.1.2. Inadvertently missing an insignificant procedural requirement when the action is routine, fairly uncomplicated, and there is no unusual circumstance indicating that the procedures should be referred to and followed step-by-step;

6.3.7.1.3. Compliance with an express direction of management that resulted in a violation unless the individual did not express his or her concern or objection to the direction; or

6.3.7.1.4. Individual error directly resulting from following the technical advice of an expert (e.g., advisor or subcontractor) unless the advice was clearly unreasonable and the permitted individual should have recognized it as such.

6.3.8. Willful Violations and Actions of Individuals. This paragraph applies if the actions described in these examples are taken by Permittee authorized individuals or otherwise taken deliberately by an individual working under permitted activities. The RICS will promptly report all suspected deliberate violations of NRC requirements to NRC Region IV office. RIC enforcement action may consist of requiring actions be taken directly toward the individual. The RIC may address immediate and ongoing safety issues as well as initiate an investigation into suspected deliberate violations unless directed otherwise by the NRC. In addition, the Permittee or other personnel may report willful violations to AF investigative or legal agencies. Listed below are examples of situations that could result in enforcement actions against individuals.

6.3.8.1. The situations include, but are not limited to, violations that involve:

6.3.8.1.1. Willfully causing a Permittee to be in violation of permit requirements;

6.3.8.1.2. Willfully taking action that would have caused a Permittee to be in violation of requirements but the consequence(s) of the action did not occur because it was detected and corrective action was taken;

6.3.8.1.3. Recognizing a violation of procedural requirements and willfully not taking corrective action.

6.3.8.1.4. Willfully defeating alarms and/or interlocks that have safety significance;

6.3.8.1.5. Dereliction of duty;

6.3.8.1.6. Falsifying records required by MML requirements or by the Permittee;

6.3.8.1.7. Willfully providing, or causing a Permittee to provide, an Inspection Agency inspector with inaccurate or incomplete information on a matter material to the radiation protection program; or

6.3.8.1.8. Willfully withholding safety significant information rather than making such information known and available to appropriate supervisory or technical personnel in the Permittee's organization.

6.3.8.2. Factors in Deciding Enforcement Actions: In its determination of whether to issue requirements that actions be taken concerning an individual, the following factors will be considered:

6.3.8.2.1. The level of the individual within the organization;

6.3.8.2.2. The individual's training and experience as well as knowledge of the potential consequences of the misconduct;

6.3.8.2.3. The safety consequences of the misconduct;

6.3.8.2.4. The degree of supervision of the individual, i.e., how closely is the individual monitored or audited and the likelihood of detection;

6.3.8.2.5. The employer's response, (e.g., disciplinary action taken);

6.3.8.2.6. The attitude of the offender (e.g., admission of misconduct, acceptance of responsibility);

6.3.8.2.7. The degree of management responsibility or culpability; and

6.3.8.2.8. Who identified the misconduct.

6.3.8.3. Types of Enforcement Actions: any proposed enforcement action against individuals must be issued by the RICS. The particular sanction to be used should be determined on a case-by-case basis. Notices of Violation and Orders are examples of enforcement actions that may be appropriate involving individuals. Orders involving individuals might include provisions that would:

6.3.8.3.1. Prohibit involvement in MML permitted activities for a specified period of time (normally the period of suspension would not exceed five (5) years) or indefinitely until certain conditions are satisfied (e.g., completing specified training or meeting certain qualifications); or

6.3.8.3.2. Require retraining, additional oversight or independent verification of activities performed by the person, if the person is to be involved in permitted activities.

6.3.8.4. Disciplinary Enforcement: adverse personnel actions and other disciplinary actions are the responsibility of the organization to which the individual to be disciplined belongs. Discretion may be exercised by either escalating or mitigating enforcement action to ensure that the proposed enforcement action reflects the Inspection Agency and the RICS concerns regarding the violation(s) at issue and that it conveys the appropriate message to the Permittee.

6.3.9. Violations of Reporting Requirements or Submitting False Information.

6.3.9.1. Reporting: permittees are expected to provide complete, accurate, and timely information and reports when required. **(T-1)**. A Permittee will not usually be cited for a failure to report a condition or event unless the Permittee was actually aware of the condition or event that it failed to report. A Permittee will, on the other hand, usually be cited for a failure to report a condition or event if the Permittee knew of the information to be reported, but did not recognize the reporting requirements.

6.3.9.2. Inaccurate and Incomplete Information: a violation of MML requirements involving submittal of incomplete and/or inaccurate information can result in the full range of enforcement actions.

6.3.9.2.1. Identification of false information. The labeling of a communication failure as a material false statement will be made on a case-by-case basis and will be reserved for egregious violations. Violations involving inaccurate or incomplete information or the failure to provide significant information identified by a Permittee will be categorized based on:

- 6.3.9.2.1.1. The degree of knowledge that the communicator should have had, regarding the matter, in view of his or her position, training, and experience;
- 6.3.9.2.1.2. The opportunity and time available prior to the communication to assure the accuracy or completeness of the information;
- 6.3.9.2.1.3. The degree of intent or negligence, if any, involved;
- 6.3.9.2.1.4. The formality of the communication;
- 6.3.9.2.1.5. The importance of the information which was wrong or not provided;
- 6.3.9.2.1.6. The rationale of the explanation for not providing complete and accurate information;
- 6.3.9.2.1.7. Efforts taken to correct information that is later identified as false or incomplete; and/or
- 6.3.9.2.1.8. Failures to correct false or incomplete information.

Chapter 7

MANAGING ALLEGATIONS

7.1. Introduction. All Permittee employees are required to be aware of NRC Form 3, *Notice to Employees*, which must be posted for all employees to view, and their right to make an allegation (10 CFR Part 19). **(T-0).** Allegations will be investigated and reported in accordance with NRC Management Directive 8.8, *Management of Allegations*. It is the responsibility of employees to immediately identify conditions contrary to this and to work within an organization's resources to obtain corrective action. **(T-1).** If such cannot be accomplished due to a threatening environment, limitation of resources or unwillingness of management, an allegation can be made at any level, anytime, among the following hierarchy:

- 7.1.1. Supervisors;
- 7.1.2. PRSOs or IRSOs;
- 7.1.3. Commanders;
- 7.1.4. Inspector General;
- 7.1.5. USAF Radioisotope Committee Secretariat;
- 7.1.6. USAF Radioisotope Committee;
- 7.1.7. US Nuclear Regulatory Commission: although it is customary, and encouraged, for employees to use their supervisory chain to seek expedient resolution of problems at the lowest level, this is not mandatory. Anonymous allegations can be made; however, resolution may be impacted by quality of information received.

7.2. Reporting Allegations. Allegations containing the following information can be processed most effectively.

- 7.2.1. Name, occupation and contact information of person making the allegation;
- 7.2.2. Date and description of issue;
- 7.2.3. Individuals involved and witnesses;
- 7.2.4. Outcome and Consequences;
- 7.2.5. Details of previous reports, including who received them;
- 7.2.6. Any corrective actions to date; and
- 7.2.7. Expectations.

7.3. RICS Handling of Allegations.

7.3.1. In the event the RICS receives an allegation, the following measures will be taken:

- 7.3.1.1. If the allegation is against the RICS, it will be immediately referred to the appropriate NRC Regional Office for disposition and AF/SG3/5 shall be informed.
- 7.3.1.2. If the allegation is not against the RICS, the appropriate NRC Regional Office will be notified. A brief written report, provided by the individual making the allegation will be forwarded to AFMSA/SG3PB for review and determination of the main merits of

investigating the allegation. The allegation will then be presented to the Chief, RICS, and, if deemed necessary, an Allegation Review Board (ARB) will be formed to conduct an investigation. (MML)

7.3.2. The ARB will be comprised of the following representatives:

7.3.2.1. Chair, RIC (will serve as the Chair, ARB);

7.3.2.2. Chief, RICS (RIC member);

7.3.2.3. Member of the affected MAJCOM, Senior Health Physicist or Bioenvironmental Engineer;

7.3.2.4. AFIA/SGI (RIC member);

7.3.2.5. Officer within the affected unit; and

7.3.2.6. AFLOA/JAC (RIC member).

7.3.3. The ARB should document the allegation investigation in an inspection report. It is important that the inspection reports protect the identity of the individual(s) making the allegation(s) and not provide any information in the report that may reveal his/her identity. The inspection report should not contain any detailed information of the inspection that would correlate the inspection to an allegation. The inspection report findings should be included in the allegation file for the respective allegation case for final resolution by the RIC.

7.3.4. Once determined adequate by the RIC/JA, the ARB will provide a final allegation investigation report and recommended course(s) of action to the RIC. An allegation involving a health or safety issue will have a higher priority.

7.3.5. All suspected deliberate violations of NRC requirements involving immediate and ongoing safety issues will be reported to the appropriate NRC Regional Office for disposition by the RIC. Concurrently, an immediate investigation may be conducted by the supervisors; PRSOs or IRSOs; Commanders; Inspector General; RICS; RIC; or ARB, as appropriate.

7.4. Protecting the Identity of Individuals Making Allegations. The name of the individual(s) making the allegation(s) and other identifying information which could potentially identify the individual(s) will not be used in discussions of allegations or documents released to the Permittee or members of the public related to the allegation. The identity of the individual(s) will be protected, and the Inspection Agency will not advise a Permittee that an inspection is based on an allegation. Exceptions to this policy include:

7.4.1. The circumstance where the individual has no objection to the release of his/her identity and is documented in the allegation file;

7.4.2. Communications within and between the RIC, RIC Secretariat, the NRC, the AF Inspection Agency, and other parties that require knowledge of this identity to properly manage the allegation; or

7.4.3. The circumstance where such protection would impact worker health and safety.

7.5. Maintenance of Allegation Files. The RICS maintains the official file of all information pertaining to each allegation. It is important that the RICS and RIC members assure there is no unauthorized reproduction of information related to an allegation. Copies of allegation files may

be made following approval by the AFMSA/SG3P case representative and maintained appropriately. All copies made of an allegation file must be returned to the file or destroyed.

7.6. Allegation Information in Inspection Reports. The investigation into the allegation should be documented in an inspection report. It is important that the inspection reports protect the identity of the individual(s) making the allegation(s) and not provide any information in the report that may reveal his/her identity. The inspection report should not contain any detailed information of the inspection that would correlate the inspection to an allegation. The inspection report findings should be included in the allegation file for the respective allegation case for final resolution by the RIC.

7.7. Resolution of Allegations. The RIC will review all allegations received. Once all of the necessary information related to the allegation has been collected, the RIC will review the allegation file to determine if any further actions are required before a final decision is made. If any findings of an allegation investigation are in violation of the regulations, then the severity level of the violation will determine the response by the RIC to the command as described in the Enforcement Policy, [paragraph 6.3](#).

7.8. Allegation Close-Out Report. Once the final disposition of an allegation is approved by the RIC, a formal response and close-out report of the RIC findings will be forwarded to the individual(s) who made the allegation by the RICS. If the individual(s) does/do not agree with the findings of the RIC, then the individual(s) may appeal the findings of the RIC with any additional information necessary to support the appeal of the final allegation findings.

7.9. Allegation to the NRC. Nothing in this manual prevents an individual from making an allegation directly to the NRC, particularly as it pertains to allegations levied against the RICS. The AF IG can provide assistance.

Chapter 8

RADIOISOTOPE COMMITTEE PROTOCOL

8.1. USAF Radioisotope Committee (RIC) Charter. The RIC is responsible for providing regulatory oversight for the use of radioactive material (RAM) by USAF organizations except weapons related materials falling under AEA Section 91. The RIC approves controls for acquiring, receiving, storing, distributing, using, transferring, and disposing of RAM to ensure compliance with the USAF Master Materials License, NRC policy and guidance, other applicable regulatory requirements, and DoD and USAF directives, instructions, and manuals.

8.2. RIC Committee Members, Organization, and Responsibilities.

8.2.1. **Chapter 2** of this manual specifies the membership and general roles for each member of the RIC. At the request of the RICS or the RIC Chairman, additional advisors can be invited.

8.2.2. RIC Secretariat (RICS): Organization, scheduling and planning of the RIC meeting, and generation of meeting minutes.

8.2.3. RIC Chair: Open RIC meetings, and preside over their proceedings. Assist in maintaining the discussion focus of the agenda items, and resolve disagreements. Adjourn meeting once completed.

8.2.4. RIC Members: Ensure either they or their alternates attend scheduled RIC meetings and are prepared to address agenda items.

8.3. Business Practices.

8.3.1. The RIC Chair and the RICS will establish the detailed procedures for RIC meetings. In all cases, the meetings will meet the requirements of the USAF MML and other USAF requirements for meetings of this type.

8.3.1.1. In accordance with MML requirements, a formal RIC meeting shall occur as represented to and agreed upon by the AF and NRC. RIC meetings are scheduled by the RICS.

8.3.1.2. Ad hoc meetings can be called by the RIC Chair on an as needed basis. These meetings are called to address emergent issues that require timely action by the RIC.

8.3.1.3. Rapid staffing of an action can be approved by the RIC Chair to address emergent issues for which an ad hoc meeting cannot be convened. For a rapid staffing the RICS will prepare a staffing package that addresses the issue and provides the voting members of the RIC the ability to vote without meeting. All rapid staffing actions will be discussed at the next RIC meeting.

8.3.1.4. A quorum for a meeting is established by having at least one-half of the voting members present.

8.3.2. Meetings will be conducted in accordance with all applicable policies and procedures. The RIC Chair and the RICS will establish the specific procedures for the conduct of routine meetings, ad hoc meetings and rapid-staffing actions.

8.3.3. Motions and Voting.

8.3.3.1. Only members and guests recognized by the Chair may speak.

8.3.3.2. Only voting members may vote on an issue.

8.3.3.3. Generally, before any item can be discussed, there should be a motion made and seconded. Once a motion has been seconded, discussion will follow. After discussion, one of four things can happen:

8.3.3.3.1. There can be a vote on the motion. In the event of a tie, the Chair casts the deciding vote; or

8.3.3.3.2. The motion can be amended (second required). Then there can be discussion on the amendment. The amendment can be voted. If the amendment passes, the motion automatically passes. If the amendment fails, the motion still stands and can be discussed until voted; or

8.3.3.3.3. The motion can be tabled (second required). There can be no discussion on a motion to table--a vote must be taken immediately. If the vote is to table, no further discussion can take place on the motion; or

8.3.3.3.4. There may be no action on the motion--therefore it becomes old business at a future meeting.

8.3.3.4. Motions must be clear and concise. A motion to "improve permitting practices" would be vague and discussions could meander. However, a motion to "implement template permit processes for a new chemical agent monitor" is specific and could be effectively discussed and acted on.

8.4. Disagreement Resolution. The RIC Chair is responsible for maintaining order. On procedural questions, the Chair's ruling will be final.

8.5. Record Keeping.

8.5.1. The RICS will ensure that appropriate files for each meeting are maintained in accordance with all applicable requirements. This will include as a minimum, the agenda, meeting minutes, copy of all pertinent reference materials, background information, memoranda, standing reports, and presentations applicable to each meeting.

8.5.2. RICS will maintain correspondence, permit actions, Notices of Violations (NOVs) or enforcement actions, and other applicable materials during the quarter to ensure a complete agenda.

8.5.3. Records of RIC meetings, to include agendas, presentations, and meeting minutes, shall be kept for the duration of existence of the MML.

DOROTHY A. HOGG
Lieutenant General, USAF, NC
Surgeon General

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

AFPD 40-2, *Radioactive Materials (Non-Nuclear Weapons)*, 12 Jan 15

5 U.S.C. Section §552a, *Privacy Act of 1974*

10 CFR §20.2106, *Records of Individual Monitoring Results*

29 CFR §1910.1096(b), *Exposure of Individuals to Radiation in Restricted Areas*

29 CFR §1910.1096(n), *Records*

29 CFR §1910.1096(o), *Disclosure to former employee of individual employee's record*

SORN F044 AF SG O, *United States Air Force Master Radiation Exposure Registry*

AFMAN 33-363, *Management of Records*, 1 Mar 08, incorporating change, 9 Jun 16, certified current, 21 Jul 16, with guidance memo, 30 May 18

AFI 33-360, *Publications and Forms Management*, 1 Dec 15, with guidance memo, 15 Feb 18

10 CFR, Chapter I, *Nuclear Regulatory Commission*

42 U.S.C. §§ 2011-2021, 2022-2286i, and 2296a-2297h-13, *Atomic Energy Act of 1954*

PL 109-58, *Energy Policy Act of 2005*

PL 93-438, *Energy Reorganization Act of 1974*

42 U.S.C. §2011, *Congressional Declaration of Policy*

42 U.S.C. §2121, *Authority of Commission*

AFPD 91-1, *Nuclear Weapons and Systems Surety*, 30 Nov 16

AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(B) Radioactive Material Safety Program*, 12 Feb 15, certified current, 9 Sep 15

AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, 13 Jan 15

40 CFR, Chapter I, *Environmental Protection Agency*

40 CFR Part 266, Subpart N, *Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation, and Disposal*

40 CFR Part 261, *Identification and Listing of Hazardous Waste*

40 CFR Part 61, Subpart I, *National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees Not Covered by Subpart H*

10 CFR §20.1101, *Radiation Protection Programs*

AFPD 32-70, *Environmental Quality*, 20 Jul 94

AFI 32-7040, *Air Quality Compliance and Resource Management*, 4 Nov 14, incorporating changes, 14 Oct 16, certified current, 14 Oct 16

42 U.S.C., Chapter 103, *Comprehensive Environmental Response, Compensation, and Liability*

AFJMAN 23-209, *Storage and Handling of Hazardous Materials*, 13 Jan 99

42 U.S.C., Chapter 116, *Emergency Planning and Community Right-to-Know*

40 CFR Part 355, *Emergency Planning and Notification*

EO 13834, *Efficient Federal Operations*, 22 May 18

49 CFR, Chapter I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation*

DTR 4500.9-R-Part II, Chapter 204, *Hazardous Material*, 11 Apr 16

DTR 4500.9-R-Part II, Chapter 208, *Packaging and Handling*, 17 Apr 17

AFMAN 24-210, *Package of Hazardous Material*, 21 Apr 15

AFJI 23-504, *Radioactive Commodities in the DoD Supply System*, 10 Mar 04

AFJMAN 23-209, *Storage and Handling of Hazardous Materials*, 13 Jan 99

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*, 13 Jul 17

International Air Transport Association (IATA), *Dangerous Goods Regulation*, 59th Ed., 2018

International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*, 2012

10 CFR Part 31, *General Domestic Licenses for Byproduct Material*

10 CFR Part 30, *Rules for General Applicability to Domestic Licensing of Byproduct Material*

HAF MD 1-18, *Assistant Secretary of the Air Force (Installations, Environment and Energy)*, 10 Jul 14

10 CFR §30.35, *Financial Assurance and Recordkeeping for Decommissioning*

10 CFR §30.36, *Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas*

10 CFR §40.36, *Financial Assurance and Recordkeeping for Decommissioning*

10 CFR §70.25, *Financial Assurance and Recordkeeping for Decommissioning*

HAF MD 1-48, *The Air Force Surgeon General*, 7 May 15

10 CFR Part 20, *Standards for Protection Against Radiation*

10 CFR Part 35, *Medical Use of Byproduct Material*

10 CFR §74.13, *Material Status Reports*

10 CFR §74.15, *Nuclear Material Transaction Reports*

10 CFR §20.2207, *Reports of Transactions Involving Nationally Tracked Sources*

10 CFR Part 40, *Domestic Licensing of Source Material*

10 CFR Part 70, *Domestic Licensing of Special Nuclear Material*

10 CFR Part 21, *Reporting of Defects and Noncompliance*

10 CFR Part 37 Appendix A, *Category 1 and Category 2 Radioactive Materials*

10 CFR Part 20 Appendix E, *Nationally Tracked Source Thresholds*

10 CFR Part 30.72 Schedule C, *Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release*,

10 CFR Part 71, *Packaging and Transportation of Radioactive Material*

49 CFR Chapter I, Subchapter C, *Hazardous Materials Regulations*

AFI 65-601 Vol 1, *Budget Guidance and Procedures*, 24 Oct 18

AFI 48-148, *Ionizing Radiation Protection*, 20 Nov 14

AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 15 Aug 14, incorporating change, 27 Apr 16, certified current 10 Jul 17

AFMAN 23-122, *Materiel Management Procedures*, 14 Dec 16, with guidance memo, 5 Sep 18

NUREG 1556 Volume 9, Revision 2, *Program-Specific Guidance About Medical Use Licenses*, Jan 08

NUREG 1556 Volume 11, Revision 1, *Program-Specific Guidance about Licenses of Broad Scope*, Feb 17

10 CFR §19.12, *Instruction to Workers*

NUREG-1556, *Consolidated Guidance about Materials Licenses*, Volumes 1-21, most current

10 CFR Part 37, *Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material*

10 CFR §30.15, *Certain Items Containing Byproduct Material*

10 CFR §30.19, *Self-luminous Products Containing Tritium, Krypton-85, or Promethium-147*

10 CFR §30.20, *Gas and Aerosol Detectors Containing Byproduct Material*

10 CFR §30.18, *Exempt Quantities*

10 CFR §30.34, *Terms and Conditions of Licenses*

10 CFR §31.12, *General License for Certain Items and Self-luminous Products Containing Radium-226*

32 CFR Part 989, *Environmental Impact Construction*

10 CFR Part 51, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions*

10 CFR Part 71, Subpart H, *Quality Assurance*

10 CFR Part 71, Subpart G, *Operating Controls and Procedures*

NRC Regulatory Guide 7.10, *Establishing Quality Assurance Programs for Packaging Used in Transport of Radioactive Material*, Jun 15

NUREG 1556 Vol 20, *Guidance About Administrative Licensing Procedures*, Aug 18

10 CFR §150.20, *Recognition of Agreement State Licenses*

10 CFR Part 835, *Occupational Radiation Protection*

10 CFR §19.11, *Posting of Notices to Workers*

10 CFR §30.13, *Carriers*

10 CFR §40.12, *Carriers*

10 CFR §70.12, *Carriers*

10 CFR §21.6, *Posting Requirements*

NRC Regulatory Issue Summary 2005-31, *Control of Security-related Sensitive Unclassified Nonsafeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material*, Revision 1, 26 Dec 17

10 CFR Part 110, *Export and Import of Nuclear Equipment and Material*

49 CFR Part 173, *Shippers—General Requirements for Shipments and Packaging*

10 CFR §40.64, *Reports*

DTR 4500.9-R-Part II, *Cargo Movement*, May 14

10 CFR §31.5, *Certain Detecting, Measuring, Gauging, or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere*

49 CFR §172.202, *Description of Hazardous Material on Shipping Papers*

International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*. 2016

NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, including Supplement 1, Jan 09

NUREG 1757, *Consolidated Decommissioning Guidance, Volume II, Characterization, Survey, and Determination of Radiological Criteria*, Feb 12

10 CFR §20.1402, *Radiological Criteria for Unrestricted Use*

AFI 32-7020, *The Environmental Restoration Program*, 7 Nov 14, incorporating changes, 18 Apr 16, certified current, 18 Apr 16

10 CFR §20.1901, *Caution Signs*

10 CFR §20.1902, *Posting Requirements*

10 CFR §20.1903, *Exemptions to Posting Requirements*

AFI 32-7042, *Waste Management*, 7 Nov 14, incorporating changes, 8 Feb 17, certified current, 8 Feb 17

10 CFR §20.2001, *General Requirements*

10 CFR § 35.92, *Decay-in-storage*

10 CFR §20.2003, *Disposal by Release Into Sanitary Sewerage*
10 CFR §20.2005, *Disposal of Specific Wastes*
10 CFR §20.2006, *Transfer Disposal and Manifests*
10 CFR §20.2002, *Method for Obtaining Approval of Proposed Disposal Procedures*
10 CFR §20.2108, *Records of Waste Disposal*
10 CFR Part 61, *Licensing Requirement for Land Disposal of Radioactive Waste*
10 CFR Part 60, *Disposal of High-level Radioactive Waste in Geologic Repositories*
10 CFR Part 63, *Disposal of High-level Radioactive Waste in a Geologic Repository at Yucca Mountain, Nevada*
AFI 91-204, *Safety Investigations and Reports*, 27 Apr 18
AFMAN 10-206, *Operational Reporting*, 18 Jun 18
40 CFR Part 302, *Designation, Reportable Quantities, and Notification*
AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, 19 Apr 16, with guidance memo 26 Sep 18
5 U.S.C., Chapter 5, *Administrative Procedure*
10 CFR Part 2, *Agency Rules of Practice and Procedure*
AFI 90-201, *The Air Force Inspection System*, 20 Nov 18
NRC Management Directive No. 8.8, *Management of Allegations*, 29 Jan 16

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*
AF Form 1297, *Temporary Issue Receipt*
DOE/NRC Form 741, *Nuclear Material Transaction Report*
NRC Form 3, *Notice to Employees*
NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters*
NRC Form 313, *Application for Materials License*
NRC Form 314, *Certificate of Disposition of Materials*

Abbreviations and Acronyms

AEA—Atomic Energy Act of 1954, as amended
AF—Air Force

AFCEC—Air Force Civil Engineering Center

AFI—Air Force Instruction

AFIA—Air Force Inspection Agency

AFJI—Air Force Joint Instruction

AFJM—Air Force Joint Manual

AFMAN—Air Force Manual

AFMSA—Air Force Medical Support Agency

AFPD—Air Force Policy Directive

AFRRAD—Air Force Radioactive Recycling and Disposal Office

AFSEC—Air Force Safety Center

ALARA—As Low As is Reasonably Achievable

CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act

CFR—Code of Federal Regulations

DoD—Department of Defense

DOE—Department of Energy

DTR—Defense Transportation Regulation

EPA—Environmental Protection Agency

EPCRA—Emergency Planning and Community-Right-To-Know-Act

ESOHC—Environmental, Safety, and Occupational Health Council

GLD—Generally Licensed Device

HAZMAT—Hazardous Material

IAEA—International Atomic Energy Agency

IATA—International Air Transport Association

IRSO—Installation Radiation Safety Officer

LLMW—Low Level Mixed Waste

LLRW—Low Level Radioactive Waste

MAJCOM—Major Command

MML—Master Materials License

MW—Mixed Waste

NARM—Naturally Occurring or Accelerator Produced RAM

NOV—Notice of Violation

NRC—Nuclear Regulatory Commission

NSN—National Stock Number

PRSC—Permit Radiation Safety Committee

PRSO—Permit Radiation Safety Officer

RAM—Radioactive Material(s)

RAMMIS—Radioactive Materials Management Information System

RCRA—Resource Conservation and Recovery Act

RIC—Radioisotope Committee

RICS—Radioisotope Committee Secretariat

RPM—Remedial Project Manager

RSC—Radiation Safety Committee

RSO—Radiation Safety Officer

RWS—Radioactive Waste Sites

SNM—Special Nuclear Material

SSDR—Sealed Source and Device Registry

USAF—United States Air Force

USAFSAM—United States Air Force School of Aerospace Medicine

U.S.C.—United States Code

Terms

91(a) Material—RAM exempted from NRC licensing controls under Section 91(a) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DOE.

91(b) Material—RAM exempted from NRC licensing controls under Section 91(b) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DoD. These include materials in nuclear weapons.

Accelerator Produced Radioactive Material—RAM produced as the result of operating a particle accelerator.

Agreement State—Any state, territory, or possession of the US that, by agreement with the NRC, has assumed regulatory authority over byproduct, source, and certain small quantities of SNM.

Allegation—Declaration, statement or assertion of impropriety or inadequacy associated with NRC or USAF regulated activities, the validity of which has not been established.

Alternate Permit Radiation Safety Officer—A person, named on the USAF RAM Permit, who is qualified by education or training, to act as PRSO when the primary PRSO is absent. Unless otherwise requested by the Permittee, the alternate PRSO becomes the primary PRSO when the named primary PRSO leaves the organization.

Annual—Recurring, done, or performed every year (i.e., every 12 months) at intervals not to exceed 1 year; or, once per year, at about the same time each year, plus or minus one calendar month.

As Low As is Reasonably Achievable (ALARA)—In accordance with the US Nuclear Regulatory Commission (NRC), ALARA means making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

Authorized User—For non-medical permits, authorized users are approved by the RSC or in the absence of an RSC, the RICS based on a review of qualifications, or by the Permittee if authorized by a permit condition. For medical permits, in accordance with 10 CFR §35.2: a physician, dentist or podiatrist who meets the requirements in 10 CFR §35.59, and §35.190(a), §35.290(a), §35.390(a), §35.392(a), §35.394(a), §35.490(a), §35.590(a) or §35.690(a), and is an authorized user as specified on a USAF RAM permit.

Byproduct Material—RAM (except source or SNM) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using source or SNM. The definition of byproduct material has changed with the Energy Policy Act of 2005 to include some forms of naturally occurring or accelerator produced RAM (reference AFD 40-2).

Exclusive Federal Jurisdiction—Property under the exclusive control or ownership of the Federal government that has been ceded legislative power by the state or has had such power reserved from grants to the states.

General License—The NRC and/or an Agreement State issues a general license for individuals to acquire and use specific devices that have been manufactured and distributed according to the specifications approved by the NRC or the Agreement State. Individuals do not need to apply for this license; it is inherent in the distribution of the device. However, they must comply with the requirements for labeling, instructions for use, and proper storage or disposition of the device in accordance with 10 CFR §31.5.

Incident—For purpose of this manual, any event involving radioactive material that is not defined as a mishap, and that may result in adverse public reaction. This includes weather-induced events, attacks against sensitive information, or spontaneous/unforeseen failures of equipment or material.

Items—Instruments, manufactured articles or major end items constructed of or having RAM as a component part, often assigned a NSN, normally procured, stored and distributed through USAF and Department of Defense logistical supply systems. Items include but are not limited to such devices as chemical agent detectors/monitors, radiation detector sets, lensatic/military compasses, dials, and gauges. Items are not considered to include any loose RAM, radioactive contamination on other materials or in soil, or any material exhumed from a radioactive burial site.

License—Written authorization from the NRC or an Agreement State to acquire, receive, use, store or transfer byproduct, source, or SNM. Licenses will be either (1) General License published in NRC or Agreement State Regulations, that is effective without any need to send an application to, or that is effective to any applicant on registration with, the NRC or an Agreement State or (2)

Specific License issued by the NRC or Agreement State to a named applicant who has filed an application authorizing acquisition, ownership, receipt, storage, use, transfer, and disposal of chemical or physical forms of radioisotopes specified in the license. This license has an expiration date renewable on application to the issuing authority. The license may be limited in scope (authorizing only certain specific radioisotopes for limited users) or broad (authorizing the use of a wide variety of radioisotopes without regard to form, quantity, or use).

Licensee—Individual who holds a an NRC or Agreement State radioactive material license.

Medical Event—Any event that meets the criteria of 10 CFR §35.3045(a).

Mishap—For purposes of this manual, a mishap is defined in AFI 91-202, *The U.S. Air Force Mishap Prevention Program*. An event involving human acts of omission or commission involving a nuclear reactor, radioisotope power system, or radioactive material resulting in any of the following: (A) A loss of control of radioactive material that presents a hazard to life, health, or property. This includes loss of control that may result in any person in exceeding federal limits. (B) Any unexpected event involving radioactive materials or radiation exposure that is serious enough to warrant the interest or action of officials or agencies outside the Air Force. This includes any event: having domestic or international implications, those that may cause inquiries by the public or press, and those requiring immediate notification to the Nuclear Regulatory Commission under federal regulations.

NUREG—Technical reports on various topics related to the regulation of nuclear energy published by Nuclear Regulatory Commission; NUREG is not an acronym but a term used by the Nuclear Regulatory Commission as a label for a series of technical reports.

Naturally Occurring and Accelerator Produced Radioactive Material (NARM)—Discrete sources of radium-226 or material made radioactive by use of a particle accelerator that is produced for use by commercial, medical or research activities. Examples include fluoride-18, cobalt-57, and iodine-123. Also included is any discrete source of naturally occurring RAM (other than source material) that the NRC determines could pose a threat to public health or security.

Nuclear Reactor—A facility using fissile materials in a self-supporting chain reaction (nuclear fission) to produce heat or radiation for both practical applications and research and development.

Nuclear Regulatory Commission (NRC)—An agency established by Title II of the Energy Reorganization Act of 1974 (Public Law 93-438) to regulate byproduct, source, and SNM as provided for by the Atomic Energy Act of 1954, as amended. Within the NRC, final authority rests with the five member Commission acting as a body.

Particle Accelerator—A device that accelerates electrically charged particles to high velocities, for the purpose of inducing high energy reactions or producing high energy radiation.

Permit—Shortened term for written authorization from an appropriate authority for Air Force organizations to receive, possess, distribute, use, transfer, or dispose of radioactive materials. See also Air Force Radioactive Material Permit.

Permittee—The Commander, civilian equivalent or designated representative of a USAF organization that is responsible for and controls the radiation safety program for RAM covered by this manual and has the authority to provide the resources necessary to achieve regulatory compliance.

Radiation Safety Committee—A group of individuals appointed by a Permittee to oversee all uses of permitted byproduct material. The Radiation Safety Committee (RSC) must include an authorized user of each type of use permitted, the RSO(s), a representative of the nursing service (for medical RSCs only), and a representative of management who is neither an authorized user nor an RSO. RSCs may include other members the licensee considers appropriate.

Radiation Safety Officer—An individual with specific education, training, and professional experience in radiation protection practice appointed by a Permittee or the USAF Radioisotope Committee to manage radiation safety programs. The term "Radiation Safety Officer" is a functional title and does not denote a commissioned status or specialty code. The RSO must have the education, training, and professional experience needed for the job. Take care when addressing RSO qualifications and duties to distinguish between IRSO and PRSOs. Individuals appointed as the IRSO might not always have the specific technical experience and training needed to qualify as the PRSO. See **Chapter 3** for RSO training requirements in the USAF.

Radiation Worker—An individual engaged in activities licensed or regulated by the NRC (or RIC) and controlled by a licensee (or Permittee) or regulated entity, but does not include the licensee (or Permittee) or regulated entity, in accordance with 10 CFR Part 19.

Radioactive Item—A single unit or article constructed of or having RAM, greater than exempt quantities, as a component part.

Radioactive Material (RAM)—Material with nuclei, because of their unstable nature, that decay by emission of ionizing radiation. The radiation emitted may be alpha particles, beta particles, gamma rays, X-rays, or neutrons.

Radioactive Material Management Information System (RAMMIS)—An online database used to maintain NRC compliance by allowing users to manage and inventory all permitted and generally licensed USAF radioactive materials.

Radioactive Waste—Waste that contains RAM. Radioactive waste can be generally classed in one of four categories:

Radioactive Waste: High-Level Radioactive Waste—Spent nuclear fuel from nuclear power plants and waste material from reprocessing spent nuclear fuel.

Radioactive Waste: Low-level Radioactive Waste (LLRW)—LLRW is any radioactive waste that is not High-Level Radioactive Waste, uranium tailings, or transuranic waste.

Radioactive Waste: Mixed Waste—A waste that contains both hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) and source, special nuclear or byproduct material subject to the Atomic Energy Act of 1954, as amended.

Radioactive Waste: Transuranic Waste—Waste material that contains transuranic elements with half-lives greater than 20 years and concentrations greater than 100 nanoCuries per gram. A transuranic is an element with an atomic number greater than 92 (e.g., plutonium, americium, and curium).

Radionuclide—An unstable isotope of an element that decays or disintegrates spontaneously, thereby emitting radiation.

Restricted Area—For this manual, a restricted area is an area having access limited to protect individuals against undue risk from exposure to radiation and RAM. Restricted area does not

include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

Requiring Activities—For this manual, organization charged with meeting a mission and delivering requirements; responsible for obtaining funding or developing the program objective memorandum and may also be responsible for written requirement or statement of need for services; provides trained and qualified Contracting Officer's Representative to monitor contractor performance.

Source Material—Uranium or thorium or any combination thereof in any physical or chemical form; or ores that have, by weight, one-twentieth of 1 percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include SNM.

Specifically Licensed Material—RAM controlled by a specific NRC or Agreement State license; or a USAF, US Navy, or Veterans Affairs permit.

Special Nuclear Material (SNM)—Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235; any other material that the NRC determines to be SNM and any material artificially enriched by the foregoing. SNM does not include source material.

Unrestricted Area—For this manual, an unrestricted area is any area access to which is not controlled by the Permittee. Generally, it is an area that is accessible to a person who is not trained to work with RAM or accessible to a member of the public.

USAF Master Materials License (MML)—The single Nuclear Regulatory Commission license issued to the United States Air Force and managed by the Air Force Radioisotope Committee.

USAF Radioactive Material Permit—Written authorization from the Air Force Radioisotope Committee for Air Force organizations to receive, possess, distribute, use, transfer, or dispose of radioactive materials.

USAF Radioisotope Committee (RIC)—A committee established to satisfy the requirements of with the Air Force master materials license to coordinate the administrative and regulatory aspects of licensing, possessing, distributing, using, transferring, transporting and disposing of all radioactive material in the Air Force except that transferred from Department of Energy to the Department of Defense in nuclear weapon systems, certain radioactive components of weapons systems and nuclear reactor systems, components and fuel controlled under Section 91 of the Atomic Energy Act of 1954, as amended.

USAF Radioisotope Committee Secretariat (RICS)—The office providing day-to-day management of USAF permitting activities under the purview of the USAF MML. The Secretariat generally comprises members from the Radiation Health function of AFMSA/SG3PB.

United States School of Aerospace Medicine (USAFSAM)—An organization, belonging to the 711th Human Performance Wing, whose mission's include, relative to this AFMAN: The Air Force Dosimetry Center, a radioanalytical lab, and health physics consultants.

User—For this manual, a user is (1) An organization authorized by a USAF RAM Permit to have and use RAM, or (2) A person specifically named on a USAF RAM Permit as authorized to handle or to supervise handling RAM listed on the permit, or (3) A person named in a permit condition by a radiation safety committee with local approval authority to handle or supervise the handling of RAM listed on the permit. Also see Authorized User.

Written Directive—An authorized user's record written order for the administration of byproduct material or radiation from byproduct material to a specific patient or human research subject, as specified in 10 §CFR 35.40. An order must be in writing for a specific patient, dated and signed by an authorized user before the administration of iodine-131 greater than 30 microCuries, any therapeutic dosage of unsealed byproduct material or any therapeutic dose of radiation from byproduct material in accordance with 10 CFR §35.40.

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE MANUAL 40-201

29 MARCH 2019



Medical Command

**RADIOACTIVE MATERIALS (RAM)
MANAGEMENT**

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This manual implements Air Force Policy Directive (AFPD) 40-2, *Radioactive Materials (Non-Nuclear Weapons)* in accordance with and supports the conditions of the US Air Force Master Materials License (MML) issued by the US Nuclear Regulatory Commission (NRC) and managed by the United States Air Force Radioisotope Committee (RIC). It applies to all US Air Force (USAF) personnel including members of the Air Force Reserve and Air National Guard. It instructs personnel on procedures for the acquisition, receipt, security, use, storage, transfer, transport, distribution, and disposal of all radioactive material (RAM) in the USAF. Civilian USAF employees are subject to administrative disciplinary action, in addition to any applicable criminal or civil sanctions for the violation of requirements and prohibitions contained in this manual. This manual requires the collection and/or maintenance of information protected by Title 5 United States Code Section 552a, *Privacy Act of 1974*, authorized by Title 10 Code of Federal Regulations (CFR), Section 20.2106, *Records of Individual Monitoring Results* and Title 29 CFR Section 1910.1096(b), *Exposure of Individuals to Radiation in Restricted Areas*, Title 29 CFR Section 1910.1096(n), *Records*, and Title 29 CFR Section 1910.1096(o), *Disclosure to Former Employee of Individual Employee's Record*. The applicable SORN F044 AF SG O, *United States Air Force Master Radiation Exposure Registry* (November 18, 2003, 68 FR 65042) is available at <http://dpclo.defense.gov/Privacy/SORNs.aspx>. Ensure that all records created because of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule in the Air Force Records Information Management System. Refer

recommended changes and questions about this publication to the Office of Primary Responsibility using the AF Form 847, *Recommendation for Change of Publication*, route AF Forms 847 from the field through the appropriate functional chain of command to the Air Force Medical Support Agency (AFMSA)/Bioenvironmental Engineering Division, 7700 Arlington Blvd., Falls Church, VA 22041. This publication may be supplemented at any level, but direct Supplements must not contain conflicting material or less restrictive guidance. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See Air Force Instruction (AFI) 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the publication Office of Primary Responsibility for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

Due to substantial revision, complete review of this document is required. The document is streamlined to remove non-directive content. Major changes include using Inspector General Management Evaluation System for radioactive material permit inspections and clarification or updates on: radioactive material remediation process, management of generally licensed devices, required use of the Radioactive Material Management Information System (RAMMIS), requirements for installation level radiation policy, and training requirements.

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Chapter 1

PROGRAM OVERVIEW

1.1. Overview.

1.1.1. This manual provides uniform instruction and guidance for the management and control of radioactive material (RAM) in the USAF. It sets forth how USAF personnel or units manage the utilization of all RAM not expressly excluded from the purview of this manual; this includes: acquisition, use, storage, security, receipt, transfer, transportation, distribution, and disposal. This manual also prescribes how non-USAF entities get approval to use, store, and transport RAM on USAF installations. Workers using radioactive material should focus on [paragraph 2.18](#) for their individual requirements.

1.1.2. Applicability. RAM covered by this manual includes, without limitation, any licensable RAM, as defined by Title 10 Code of Federal Regulations (CFR) Chapter I, *Nuclear Regulatory Commission*, which applies to the USAF and for other RAM as described in this manual.

1.1.3. Objectives. The objectives of this manual are to provide guidance to establish, implement, and ensure a unified approach for managing, safeguarding, and authorizing the utilization of RAM on USAF installations.

1.2. Regulatory Authority for Radioactive Materials (RAM). This manual implements NRC requirements across the USAF. It also sets requirements for USAF-owned RAM not under the jurisdiction of the US Nuclear Regulatory Commission (NRC).

1.2.1. US Nuclear Regulatory Commission (NRC) Regulatory Authority. The NRC is the primary regulatory authority for USAF utilization of RAM in the US. The Atomic Energy Act (AEA) of 1954 (42 United States Code Sections 2011-2021, 2022-2286i, and 2296a-2297h-13), as amended (including Public Law 109-58, *Energy Policy Act of 2005* and the Public Law 93-438, *Energy Reorganization Act of 1974*), grant the NRC the authority to regulate byproduct material, discrete naturally-occurring and accelerator-produced radioactive material (NARM), source material, and special nuclear material (SNM) for peaceful applications in accordance with Title 42 United States Code (U.S.C.) Section 2011, *Congressional Declaration of Policy*, et seq. This authority does not extend to material described in AEA Section 91, or Title 42 U.S.C. Section 2121, *Authority of Commission*.

1.2.1.1. NRC authority extends across the US, its possessions and territories. For regulations issued and enforced by the NRC, reference 10 CFR, Chapter I.

1.2.1.2. The NRC maintains regulatory authority over Federal agency licensees regardless of location within the United States.

1.2.2. USAF Regulatory Authority:

1.2.2.1. Authority for USAF receipt, storage, internal distribution, use, transfer, and disposal of byproduct, discrete NARM, source, and limited quantities of SNM is granted through a Master Materials License (MML) issued to the USAF by the NRC. This manual prescribes requirements for USAF compliance with the MML and other applicable regulatory requirements.

1.2.2.2. The USAF also maintains authority over the use of RAM by non-USAF organizations on USAF installations where exclusive Federal jurisdiction exists. This manual requires USAF personnel, usually the installation radiation safety officer (IRSO), to coordinate with tenant organizations operating under a non-USAF permit, NRC license, or Department of Energy (DOE) license exemption on legal documentation, location, quantity and movement onto and across USAF-occupied real estate for RAM exceeding NRC exempt quantities and not falling under the AEA.

1.2.2.3. This manual does not, unless specifically stated, apply to nuclear reactor programs, nuclear weapons systems or waste, or other RAM controlled under Section 91 of the AEA, or 42 U.S.C. §2121. These items are governed by AFPD 91-1, *Nuclear Weapons and Systems Surety*, AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(b) Radioactive Material Safety Program*, AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, and subordinated instructions managed through the Air Force Safety Center (AFSEC).

1.2.3. Authority in locations outside of the US and its territories. The requirements in this manual apply for locations outside the US, so long as the requirements do not conflict with applicable requirements from any of the following: international agreements, the Overseas Environmental Baseline Guidance Document, country-specific Final Governing Standards, Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive. International Atomic Energy Agency (IAEA) Safety Standards and other publications may be considered where appropriate. USAF RAM use and activities outside the US are detailed in [paragraph 3.1.10](#).

1.2.4. Resource Conservation and Recovery Act (RCRA). RCRA authorizes the Environmental Protection Agency (EPA) to develop and enforce regulations governing the cradle to grave management of hazardous waste, to include Low-Level Mixed Waste (LLMW), Low-Level Radioactive Waste (LLRW), and Mixed Waste (MW). These regulations are found in Title 40 of the Code of Federal Regulations (40 CFR) Chapter I, *Environmental Protection Agency*. For purposes of RCRA, take note of the following definition: Low-Level Mixed Waste (LLMW) is waste that contains both low-level radioactive waste and RCRA hazardous waste. Low-Level Radioactive Waste (LLRW) is a radioactive waste which contains source, special nuclear, or byproduct material and is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material. Mixed Waste (MW) means waste that contains both RCRA hazardous waste and source, special nuclear, or byproduct material.

1.2.4.1. Conditional exemptions from RCRA for LLMW are provided under Title 40 CFR Part 266, Subpart N, *Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation, and Disposal*.

1.2.4.2. Solid low level radioactive waste (LLRW) includes quantities of byproduct, source and SNM. They also may contain NARM, and they too may fall within the definition of hazardous waste as set out in Title 40 CFR Part 261, *Identification and Listing of Hazardous Waste*.

1.2.4.3. Waste that contains both AEA-regulated RAM and hazardous waste (as defined by 40 CFR Part 261) is termed mixed waste.

1.2.4.3.1. Mixed waste is subject to dual regulation under EPA and NRC rules.

1.2.4.3.2. Neither agency has exclusive jurisdiction over mixed waste under current Federal law.

1.2.5. Clean Air Act. The Clean Air Act gives the EPA authority over non-NRC regulated radionuclide emissions from Federal facilities in accordance with Title 40 CFR Part 61, Subpart I, *National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees Not Covered by Subpart H*. The NRC regulates air emissions from NRC licensed Federal facilities in accordance with Title 10 CFR Section 20.1101, *Radiation Protection Programs*. Organizations that generate emissions fall under the authority of both NRC and EPA rules. For guidance on complying with EPA air emission standards, refer to AFD 32-70, *Environmental Quality*, and AFI 32-7040, *Air Quality Compliance and Resource Management*.

1.2.6. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLA, see Title 42 United States Code, Chapter 103, *Comprehensive Environmental Response, Compensation, and Liability*, establishes prohibitions and requirements, under the EPA, concerning closed and abandoned hazardous waste sites. The CERCLA also provides for liability of persons responsible for releases of hazardous waste at these sites, through the EPA.

1.2.7. Emergency Planning and Community-Right-To-Know-Act (EPCRA). EPCRA, see Title 42 United States Code, Chapter 116, *Emergency Planning and Community-Right-To-Know*, requires that whenever a reportable quantity of a CERCLA hazardous substance leaves installation boundaries, the State Emergency Response Commission and Local Emergency Planning Committee must be notified immediately (40 CFR Part 355, *Emergency Planning and Notification*). EPCRA is not applicable to federal facilities however, the USAF complies with EPCRA, as directed by Executive Order 13834 (May 22, 2018).

1.2.8. Transportation of Hazardous Material (HAZMAT). The Department of Transportation specifies requirements for marking, labeling, shipping documents, containers, and other requirements when shipping or transporting HAZMAT, including RAM, in accordance with 49 CFR, Subtitle B, Chapter I, *Pipeline and Hazardous Materials Safety Administration*. In the USAF, the logistics (A4) community ensures the appropriate handling, packaging and certification of RAM shipments in accordance with Defense Transportation Regulations (DTR) 4500.9-R-Part II, Chapter 204, *Hazardous Material*, and Chapter 208, *Packaging and Handling*; AFMAN 24-210, *Package of Hazardous Material*; Air Force Joint Instruction (AFJI) 23-504, *Radioactive Commodities in the DoD Supply System*; Air Force Joint Manual (AFJMAN) 23-209, *Storage and Handling of Hazardous Materials*; AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*; and International Air Transport Association (IATA), *Dangerous Goods Regulation*. IAEA Safety Standards, including *Regulations for the Safe Transport of Radioactive Material*, and other publications may be considered where appropriate.

1.3. Radioactive Material Licensing Categories.

1.3.1. Specifically Licensed RAM. NRC requires a specific license for possessions and use of byproduct, source, and SNM in accordance with 10 CFR Chapter I. All RAM utilized by the AF which would be subject to NRC licensing are required to be permitted under the MML.

1.3.2. Generally Licensed Devices (GLDs). The NRC provides a general license for the possession and use of byproduct material contained in certain devices in accordance with Title 10 CFR Part 31, *General Domestic Licenses for Byproduct Material*. Most GLDs utilized in the USAF do not require a permit to be issued under the MML.

1.3.3. Exempted RAM. Certain concentrations or quantities of RAM are exempt from specific and general licensing requirements of the NRC. USAF units/organizations have restrictions on the disposition of exempt quantities of RAM, as detailed in this manual and 10 CFR Part 30, *Rules for General Applicability to Domestic Licensing of Byproduct Material*.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. The Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE) shall:

- 2.1.1. Appoint one voting representative and one alternate from SAF/IEE to the USAF Radioisotope Committee (RIC).
- 2.1.2. Execute radiation safety and radioactive materials management duties as outlined in Headquarters Air Force Mission Directive 1-18, *Assistant Secretary of the Air Force (Installations, Environment and Energy)*.
- 2.1.3. Provide financial assurance to the USAF RIC Secretariat (RICS) for submittal to the NRC on all applicable USAF decommissioning activities, in accordance with Title 10 CFR Sections: 30.35, *Financial Assurance and Recordkeeping for Decommissioning*, 30.36, *Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas*, 40.36, *Financial Assurance and Recordkeeping for Decommissioning* and 70.25, *Financial Assurance and Recordkeeping for Decommissioning*.

2.2. The Assistant Secretary of the Air Force for Acquisition (SAF/AQ) shall:

- 2.2.1. Appoint one voting representative, and one alternate, to the RIC, from the Systems Engineering Division, with expertise in environmental, safety, and occupational health and human systems integration.
- 2.2.2. Ensure Acquisition Program Managers coordinate approval with the RICS, prior to acquisition of new systems and upgrades that contain RAM prior to fielding in the USAF.

2.3. The Surgeon General of the Air Force (AF/SG) shall:

- 2.3.1. On behalf of the Department of the Air Force, manage the control of RAM within the purview of this manual and the MML.
- 2.3.2. Maintain and sustain the RIC and the RICS within the AFMSA Bioenvironmental Engineering (AFMSA/SG3PB) Radiation Health function, under the Assistant Surgeon General, Health Care Operations (AF/SG3/5), to provide oversight for use of RAM in the USAF as required by the MML.
- 2.3.3. Direct AF/SG3/5 to appoint to the RIC a Chair and alternate Chair from the AF Medical Support Agency's Aerospace Medicine Division (AFMSA/SG3P), the health physics and medical physics consultants, and a member and an alternate from the Occupational and Environmental Health function of AFMSA/SG3PB as voting representatives.
- 2.3.4. In coordination with the Air Force Inspection Agency (AFIA), provide for inspections prescribed by this manual to evaluate risk-based performance and compliance with permits issued by the RICS.
- 2.3.5. Authorize, empower, and provide required resources to the RIC and RICS to protect the interests of the MML and remain in compliance with applicable NRC and other Federal regulations, Department of Defense (DoD) instructions, and applicable guidance documents including taking enforcement action against RAM permittees, if needed.

2.3.6. The Assistant Surgeon General, Health Care Operations (AF/SG3/5), shall:

2.3.6.1. Provide operational control over the RICS, as a duty of the Radiation Health function of the AFMSA, to work on behalf of the RIC in providing functional oversight of non-nuclear weapons related RAM use in the USAF.

2.3.6.2. Chair, or delegate a chair and alternate chair to the RIC. Authorize the Chief of the RICS to act in the Chairperson's absence.

2.3.6.3. Appoint the health physics and medical physics consultants and alternates as a voting representatives from the Radiation Health function of AFMSA/SG3PB to the RIC.

2.3.6.4. Appoint one voting representative and one alternate from the Occupational and Environmental Health function of AFMSA/SG3PB to the RIC.

2.3.6.5. Ensure the delegation of authority for assuring RAM management in accordance with 10 CFR Chapter I and the MML, from the Secretary of the Air Force to AF/SG and the RIC, is fully and accurately reflected in AFD 40-2 and Headquarters Air Force Mission Directive 1-48, *The Air Force Surgeon General*.

2.3.7. The Air Force Radioisotope Committee (RIC) shall:

2.3.7.1. Provide direction for USAF utilization of radioactive material (RAM) and shall grant to the RICS authority to conduct business consistent with applicable and relevant Federal, DoD and USAF policy, regulations, and guidance in accordance with the MML.

2.3.7.2. Serve, through the RICS, as the USAF single point of contact for the MML.

2.3.7.3. Recommend policies to AF/SG3/5 for keeping exposure from approved uses of RAM As Low As is Reasonably Achievable (ALARA) but always below regulatory limits as promulgated in Title 10 CFR Part 20, *Standards for Protection Against Radiation*.

2.3.7.4. Serve, through the RICS, as the USAF single point of contact with the Conference of Radiation Control Program Directors and its licensing states for issues pertinent to the MML. Similarly, serve as the single point of contact with Agreement States.

2.3.7.5. Direct and adjudicate enforcement actions when such actions are required to protect persons or property or maintain compliance with permit and MML conditions.

2.3.7.6. Identify new or special inspection needs and coordinate with AFIA/SG.

2.3.7.7. Review unique actions and permit requests referred by the RICS.

2.3.7.8. Review and advise on special situations involving RAM as requested by the RICS, Air Staff, or Major Commands.

2.3.7.9. Meet as agreed upon with the NRC. Convene ad hoc or emergency meetings to discuss matters requiring timely actions.

2.3.7.10. Publish and make available, minutes of meetings to all committee members, or others, as appropriate.

2.3.7.11. Provide final ruling on the interpretation of this manual and permits affecting compliance with the MML.

2.3.7.12. Provide final resolution for any allegations concerning the safe and regulatory compliant use of RAM in the USAF.

2.3.7.13. Periodically update RIC membership and business practices as identified in RIC standard operating procedures, RIC minutes, and this manual.

2.3.7.14. The Chief, Air Force Radioisotope Committee Secretariat (RICS) shall:

2.3.7.14.1. Serve as the single point of contact between the RIC, the NRC, and/or Agreement States for all issues associated with the MML. Assists, when requested, in any transactions involving installations outside of the US and overseas permitted activities that also entail attention to host nation requirements.

2.3.7.14.2. Develop and implement policy, in coordination with the RIC, to acquire, receive, possess, use, distribute, store, transport, transfer, and dispose of or otherwise manage RAM in the USAF, consistent with applicable Federal, DoD and USAF policy, regulations, and guidance and in accordance with the MML.

2.3.7.14.3. Serve as the office of record for all documentation required to be maintained in accordance with 10 CFR Chapter I and the MML.

2.3.7.14.4. Review, for approval or denial, USAF permit applications, renewals, amendments and other requests for the possession and/or use of RAM under the authority of the RIC.

2.3.7.14.5. Certify individuals are qualified by training, education, and experience to serve as Permit Radiation Safety Officers, be designated an Authorized Users (in accordance with Title 10 CFR Part 35, *Medical Use of Byproduct Material*), or provide audit services for medical permits.

2.3.7.14.6. Regulate the remediation of all radioactive material sites containing RAM under the purview of this manual.

2.3.7.14.7. Coordinate with AFSEC/SEW on issues involving the licensing of certain RAM including aerospace and space power.

2.3.7.14.8. Provide permit documentation to AFIA/SG.

2.3.7.14.9. Provide interpretation of this manual and permits affecting compliance with the MML and USAF policy.

2.3.7.14.10. Conduct pre-permitting visits and direct investigations of RAM incidents and mishaps, as deemed necessary.

2.3.7.14.11. Implement RIC decisions. The Chief, RICS is the executive agent for all business associated with the MML. This includes providing interpretation and setting measures to ensure compliance with applicable NRC and Federal regulations, policy, and/or guidance.

2.3.7.14.12. Independently conduct USAF RAM permit reviews as deemed appropriate by the RICS.

2.3.7.14.13. Implement enforcement actions in accordance with [paragraph 6.3](#) of this manual. These may include Notices of Violations (NOVs), and revocation and termination orders to protect persons, property, or to maintain MML compliance.

2.3.7.14.14. Exercise the authority to temporarily exempt a Permittee from any requirement of this manual, provided the exemption does not conflict with NRC policy or Federal regulations.

2.3.7.14.15. Exercise the authority to impose policy or permit requirements more stringent than NRC policy or Federal regulations.

2.3.7.14.16. Submit the annual USAF inventory of NRC-regulated SNM to the Nuclear Material Management & Safeguards System in accordance with Title 10 CFR Section 74.13, *Material Status Reports*, before 31 March of each year.

2.3.7.14.17. Submit a SNM Transaction Report to the Nuclear Material Management & Safeguards System within timeframes required by Title 10 CFR Section 74.15, *Nuclear Material Transaction Reports*.

2.3.7.14.18. Submit the National Source Tracking Transaction Report to the National Source Tracking System within timeframes required Title 10 CFR Section 20.2207, *Reports of Transactions Involving Nationally Tracked Sources*.

2.3.7.14.19. Submit the USAF annual inventory of Category 1 and 2 nationally tracked sources to the National Source Tracking System, in accordance with 10 CFR §20.2207, by 31 January of each year.

2.3.7.14.20. Coordinate with SAF/IE for signature on financial assurances, related to all USAF decommissioning and permitted activities; and submit to the NRC in accordance with 10 CFR Part 30, Title 10 CFR Part 40, *Domestic Licensing of Source Material*, and Title 10 CFR Part 70, *Domestic Licensing of Special Nuclear Material*.

2.3.8. **The Commander, Air Force Medical Support Agency (AFMSA) shall:** provide administrative control and support for a Radiation Health function for the establishment and implementation of AF Medical Service policy on all RAM.

2.4. The Deputy Chief of Staff for Logistics, Engineering, and Force Protection (AF/A4) shall:

2.4.1. Appoint one voting representative and one alternate from among the staff of AF/A4L, AF/A4C or AF/A4S to the RIC who can represent civil engineering, logistics readiness, security forces, and aircraft and missile maintenance.

2.4.2. Coordinate on civil engineering, logistics readiness, security forces, and aircraft and missile maintenance policies dealing with RAM covered by this manual.

2.4.3. Provide guidance to Air Force Material Command on the logistical management of items containing RAM.

2.4.4. Maintain a USAF Radioactive Waste Site Registry.

2.4.5. Direct USAF-wide RAM transportation in accordance with, 49 CFR Chapter I, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, IATA; and this manual.

2.4.6. Support the implementation of safety and security measures which in addition to general radiation protection shall include the timely reporting of defects and noncompliance in accordance with Title 10 CFR Part 21, *Reporting of Defects and Noncompliance*, as well as

the physical protection of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and/or quantities of radioactive materials requiring an emergency plan for responding to a release (such as “toxic industrial radiologicals”, as listed in Title 10 CFR Part 37 Appendix A, *Category 1 and Category 2 Radioactive Materials*, Title 10 CFR Part 20 Appendix E, *Nationally Tracked Source Thresholds*, and Title 10 CFR Section 30.72, Schedule C, *Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release*, respectively).

2.4.7. Ensure local mission support, security, and maintenance personnel will work with Permit Radiation Safety Officer (PRSO) and the Installation Radiation Safety Officer (IRSO) who will in turn interface with the RICS which will in turn interface with the NRC as required.

2.5. The Commander, Air Force Inspection Agency (AFIA), on behalf of The Inspector General (SAF/IG), shall:

2.5.1. Appoint one voting representative to the RIC from AFIA/SG (T-1) and can appoint an alternate. Resources and prioritizes inspections according to this manual and in coordination with the RICS and NRC. (T-1).

2.5.2. Maintain a staff qualified health physicist (43E4G) with appropriate NRC training and security clearance, to conduct USAF RAM permit and Section 91(b) inspections. (T-1).

2.6. The Chief, Weapons Safety Division (AFSEC/SEW), on behalf of The Chief of Safety (AF/SE), shall appoint one voting representative and one alternate from AFSEC/SEW to the RIC to advise on RAM control issues relative to AEA Section 91 materials, for consistent control of RAM within the USAF, in accordance with AFPD 91-1, AFI 91-108 and AFI 91-110. (T-1).

2.7. The Commander, Air Force Legal Operations Agency (AFLOA), on behalf of The Judge Advocate General (AF/JA), shall:

2.7.1. Appoint one non-voting legal advisor and one alternate from AFLOA/JAC to the RIC. (T-1).

2.7.2. Coordinate on legal issues involving RAM, including internal and external enforcement matters, and acts as counsel to the RIC. (T-1).

2.8. Major Commands (MAJCOM):

2.8.1. The Commander, Air Force Materiel Command (AFMC/CC), shall:

2.8.1.1. Establish a radioactive waste program office to oversee all radioactive and mixed waste disposition activities in the USAF. **Note:** The Air Force Radioactive Recycling and Disposal (AFRRAD) Office satisfies this requirement, see [paragraph 2.8.1.7.3](#).

2.8.1.2. Program and advocate funding for radioactive waste management.

2.8.1.3. Maintain the capability to oversee and coordinate USAF recycling of radioactive material (RAM) where appropriate and cost effective.

2.8.1.4. Ensure all RAM, including waste products, subject to 10 CFR Chapter I and/or 40 CFR Part 261, are identified as early as practical in the procurement and/or development process.

2.8.1.5. Coordinate with the RIC on unique conditions requiring variances to the MML involving the USAF radioactive waste program and recycling of USAF RAM.

2.8.1.6. The Commander, 711th Human Performance Wing, shall:

2.8.1.6.1. Appoint one voting representative and one alternate from USAF School of Aerospace Medicine (USAFSAM) to the RIC. **(T-1).**

2.8.1.6.2. Support Major Commands and installations by maintaining and providing National Voluntary Laboratory Accreditation Program-accredited radiation dosimetry services through the USAF Dosimetry Center, comprehensive radio-analytical capabilities, and health physics consultative services. **(T-1).**

2.8.1.6.3. Provide quarterly and annual summaries of occupational radiation exposure, from RAM, to the RIC. **(T-1).**

2.8.1.6.4. Provide technical and on-site health physics support to the RIC, RICS and AFSEC/SEW to prevent, investigate and mitigate human exposure or environmental contamination from RAM. **(T-1).**

2.8.1.7. The Commander, 88th Air Base Wing (88 ABW/CC), shall:

2.8.1.7.1. Appoint one voting representative and one alternate to the RIC from the Air Force Radioactive Recycling and Disposal (AFRRAD) Office. **(T-1).**

2.8.1.7.2. Appoint a member to the DoD Disposition Advisory Committee. **(T-1).**

2.8.1.7.3. Sustain the AFRRAD to support, and oversee as necessary, USAF radioactive and mixed waste disposition activities. **(T-1).** This office shall:

2.8.1.7.3.1. Provide technical consultation for all radioactive waste activities to include decommissioning and/or remediation of radiological waste burial sites or contaminated facilities. **(T-1).**

2.8.1.7.3.2. Coordinate radioactive waste disposal, other than decontamination and decommissioning projects; among USAF activities, the DoD Executive Agent, disposal contractors, and disposal site operators, in accordance with **Chapter 4**. **(T-1).**

2.8.1.7.3.3. Provide consultative support on package and transport of radioactive waste for disposal according to Title 10 CFR Part 71, *Packaging and Transportation of Radioactive Material*, 49 CFR Chapter I, Subchapter C, *Hazardous Materials Regulations*, 40 CFR Part 261 et seq., (for mixed waste) and all applicable disposal site rules. **(T-1).**

2.8.1.7.3.4. Provide quarterly summaries of radioactive waste disposal, waste specific issues for decontamination, and decommissioning activities to the RIC or AFSEC/SEW as appropriate. **(T-1).**

2.8.1.7.3.5. Maintain all records of radioactive waste transferred for disposal in accordance with guidance at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm> and 10 CFR Part 30. **(T-1)**

2.8.1.7.3.6. Implement billing procedures in accordance with AFI 65-601, Volume 1, *Budget Guidance and Procedures*, to allow funded activities to plan, program, and fund the cost of contracted services for the disposition of generated RAM and

waste. (T-1).

2.8.2. Major Command Bioenvironmental Engineers shall:

2.8.2.1. Receive, review and forward documents and reports as required by this and other AFIs/manuals in support of RAM management, security, environmental quality, safety and occupational health.

2.8.2.2. Advocate support for the installation bioenvironmental engineering and IRSO at the MAJCOM-level for the implementation of this and related AFIs/manuals.

2.8.2.3. Coordinate Environmental, Safety, and Occupational Health Council (ESOHC) functional support for AF permittees and IRSOs in the MAJCOM who do not have access to an ESOHC at their installation (e.g. Joint Base, forward operating base, geographically separated unit, etc.).

2.8.2.4. Coordinate, consult on, and/or fulfill IRSO responsibilities for AF permittees or other AF users of RAM in the MAJCOM when there is no IRSO because of Joint Basing, forward basing, geographical separation, etc.

2.9. The Installation Commander or AF Wing Commander (non-AF led Joint Base) shall:

2.9.1. Enforce compliance with this manual and all applicable federal regulations for permitted radioactive material (RAM) and Generally Licensed Devices (GLDs). (T-0).

2.9.2. Delegate authority in writing to the IRSO to suspend installation operations involving RAM that pose a significant health risk to personnel or the general public, present a clear violation of regulations or requirements, or present a high risk of negative impact to USAF operations, materiel, or real estate. (T-1).

2.9.2.1. If on a non-AF led Joint Base, overall IRSO responsibilities shall fall to the host unit per the host service's guidelines. (T-0).

2.9.2.2. The AF Wing Commander (non-AF led Joint Base), shall delegate this authority in writing to a Wing Radiation Safety Officer (RSO) for Wing personnel and operations. (T-1).

2.9.2.3. IRSO/Wing RSO appointments will be made in accordance with AFI 48-148, *Ionizing Radiation Protection*. (T-1).

2.9.3. Provide required resources and access to all activities governed by this manual to the IRSO to maintain compliance with this manual and applicable Federal, DoD, and AF regulations and/or directives. (T-1).

2.9.4. Establish specific written policies, through IRSO, for the execution of all applicable AFIs/manuals and federal regulations concerning the management and utilization of RAM on the installation (e.g. policy memos, instructions, AFI/AFMAN supplements, etc.). (T-3).

2.9.5. Prohibit the receipt or transfer of RAM (including RAM in classified operations) without prior coordination and/or approval by the IRSO. (T-1).

2.9.6. Ensure the IRSO is notified of all activities pertaining to radioactive waste or radioactive waste burial sites. (T-1).

2.9.7. Ensure the IRSO briefs the internal audit of all RAM permits annually at the Environment, Safety, and Occupational Health Council (ESOHC). **(T-1)**.

2.9.8. Ensure personnel in the logistics readiness squadron, civil engineering squadron, and all other USAF personnel engaged in any aspect of the disposition, transportation, or shipment of HAZMAT, including RAM are fully trained for duties performed in accordance with DTR 4500.9-Part II Chapters 204 and 208, AFJI 23-504, and AFMAN 24-204. **(T-0)**.

2.9.9. Ensure the implementation of safety and security measures at the installation level, which may be required for certain types of permitted RAM located on the installation; this may include response capabilities, surveillance, and monitoring. **(T-0)**.

2.9.10. Ensure all NRC specifically licensed RAM, GLDs, RIC permitted RAM, and any other type of RAM specified by the RIC which is utilized by DoD activities and organizations or in facilities for which the installation commander is responsible is accurately inventoried in the Radioactive Material Management Information System (RAMMIS), unless otherwise stated in this manual. **(T-1)**.

2.9.11. Sustain leases on properties where permitted RAM is located until such time as the RICS terminates the permit. **(T-0)**.

2.9.12. The Installation Radiation Safety Officer (IRSO) shall:

2.9.12.1. Serve as approval authority for the utilization of all RAM on USAF installations, including those from non-USAF organizations and contractors. **(T-1)**.

2.9.12.2. Serve as technical subject matter expert to commanders regarding RAM use on the installation as governed by all applicable local, state, federal regulations and guidance. **(T-1)**.

2.9.12.3. Provide RAM identification, detection, and measurement capabilities to permittees and commanders as needed. **(T-3)**.

2.9.12.4. Support host and tenant organizations requesting to utilize RAM which may require a permit to be issued under the MML. **(T-1)**.

2.9.12.5. Develop and maintain specific written policies for the execution of all applicable AFIs/manuals and federal regulations concerning the management and utilization of RAM on the installation (e.g. installation-level policy memos, instructions, or AFI/AFMAN supplements, etc.). **(T-3)**.

2.9.12.5.1. Annually review the installation policies regarding RAM. **(T-3)**.

2.9.12.5.2. For an AF-led Joint Base or Joint Operation, the policies must be signed by each co-located service component commander in addition to the installation commander. **(T-1)**.

2.9.12.6. Consult with and provide requiring activities with information necessary to develop a Performance Work Statement/Statement of Work for compliance with all applicable statutes, regulations and instructions for managing RAM in the USAF including [paragraph 2.19.2.](#), and provide contracting officers information necessary to ensure appropriate award selection criteria are included in the solicitation (based on guidance and information from the NRC, Sealed Source and Device Registry (SSDR), RICS, USAFSAM, etc.). **(T-3)**. **Note:** requiring activities may have to request this consultation.

2.9.12.7. Conduct an annual audit of each RAM permit on the installation. **(T-1).**

2.9.12.8. Brief the ESOHC on the following items:

2.9.12.8.1. GLD inventories – semiannually; **(T-3).**

2.9.12.8.2. Utilization of RAM on the installation by non-USAF organizations and contractors – semiannually; **(T-3).**

2.9.12.8.3. Review any necessary changes to RAM policies on the installation – annually; **(T-3).**

2.9.12.8.4. Incidents/Accident investigations involving RAM – annually; **(T-3).**

2.9.12.8.5. Status of corrective actions associated with deficiencies identified during external RAM inspections or the annual IRSO permit audits – semiannually. **(T-3).**

2.9.12.9. For a Joint Base or geographically separated unit without an ESOHC, the aforementioned briefing items will be provided to the MAJCOM/SGPB to review (with courtesy copies to the Joint Base Safety and HAZMAT management/response functions). **(T-1).**

2.9.12.10. For a Joint Base or geographically separated unit without an IRSO or bioenvironmental engineer, PRSOs will forward signed/dated copies of the annual PRSO permit audit documentation directly to the MAJCOM/SGPB (with courtesy copies to Joint Base safety and hazardous materials management/response functions). **(T-1).**

2.9.12.11. Review all work orders prepared for installation-level actions involving potential to utilize RAM. **(T-3).**

2.9.12.12. Maintain and update, semiannually, RAM inventories in RAMMIS, to include NRC specifically licensed RAM, Generally Licensed Devices (GLDs), RIC permitted RAM, and any other type of RAM specified by the RIC which is utilized by DoD activities and organizations or in facilities for which the installation commander is responsible. **(T-1).**

2.9.12.12.1. RAMMIS is not required to be used to inventory targeting pods; however, the IRSO will obtain a copy of the Reliability, Availability, Maintainability Logistics Support System for Pods (commonly referred to as “RAMPOD”) inventory at an interval not to exceed 6 months. **(T-3).**

2.9.12.12.2. Weapon systems containing strategic SNM or tritium, and the associated waste streams, regulated by 42 U.S.C. § 2121, AFD 91-1, AFI 91-101, *Air Force Nuclear Weapons Surety Program*, and AFI 91-108 are exempt from the RAMMIS inventory requirement.

2.9.12.12.3. Exempt consumer product uses of nuclear materials, certain unimportant quantities of source materials, and certain DOE activities are exempt from the RAMMIS inventory requirement.

2.9.12.13. Serve as the Approval Authority for the use of RAM during installation level military readiness training or exercises which may result in exposures to personnel or the general public. **(T-3).**

2.9.12.14. Assist the Range Operating Authority in the identification and permitting of RAM in targets or target materials. **(T-3)**.

2.9.12.15. Coordinate with AFSEC and the RICS regarding the authority for the utilization of RAM on the installation by DOE or DOE prime contractors. **(T-1)**.

2.9.12.16. Provide the installation's Fire Emergency Services, regardless of service lead, a list of physical locations, quantity, and forms for all non-exempt quantities of RAM on the installation. **(T-3)**.

2.10. The Range Operating Authority shall:

2.10.1. Develop and implement procedures to identify all targets that potentially contain and/or are suspected to contain radioactive material (RAM). **(T-1)**.

2.10.2. Ensure RAM is removed from targets or target materials that potentially contain RAM, unless authorized by a RAM permit, prior to placement on a range. **(T-1)**.

2.10.3. Ensure use of targets or target material known to contain RAM is authorized by an AF RAM Permit. **(T-1)**.

2.11. The Staff Judge Advocate shall:

2.11.1. Assist IRSO in interpreting DoD and AF policy/instructions governing RAM. **(T-3)**.

2.11.2. When overseas, perform legal review(s) of translated copies of host nation laws governing control of RAM used on the installation at the request of the IRSO and determines whether the host nation requirements apply to a given overseas installation via treaty or status of forces agreement, as appropriate. **(T-2)**.

2.11.3. Serve as the legal advisor for claims or potential regulatory violations brought against the installation by Federal agencies or civilian parties. **(T-2)**.

2.12. Acquisition Program Managers shall:

2.12.1. Ensure RAM associated with AF weapons systems are utilized only after obtaining the appropriate authorization under a permit or general license, approval from the RICS, or as otherwise exempted from federal regulations governing RAM. **(T-0)**.

2.12.2. Ensure any product being developed or acquired by the USAF do not contain radium. **(T-1)**.

2.12.3. In coordination with the IRSO and the AFRRAD office, ensure devices containing radium are returned to the manufacturer with consultation, when feasible. **(T-1)**.

2.12.4. Limit the use of RAM where feasible, consistent with USAF needs. **(T-1)**. Justification shall be documented for deciding that non-RAM or less hazardous RAM are not feasible. **(T-1)**. Justification should include an analysis of the disposal costs and life cycle costs (including handling, permitting, storage, shipment and disposal) in any decision to procure items containing RAM. **(T-1)**. Documentation will be maintained by the program office for the duration the material remains in the USAF inventory. **(T-1)**.

2.12.5. Ensure RAM specific environmental, safety, and occupational health considerations are integrated into the Systems Engineering process from the earliest stages of system design. **(T-1)**

2.12.6. Ensure material hazards and risks, from RAM, in a developed or modified system is identified to testers, operators, and maintainers by specifying the radionuclide, form, and activity. **(T-0)**.

2.12.7. Ensure any shipment or transfer of RAM, for which the project manager is responsible, is coordinated with the IRSO **(T-3)** and is prepared in accordance with the transportation requirements in this manual and all applicable state, federal, DoD, and AF regulations/guidance. **(T-0)**.

2.12.8. Coordinate with the MAJCOM bioenvironmental engineering offices to include RAM safety and management requirements in all contracts for operating, changing, or repairing devices that contain RAM, as applicable. **(T-1)**.

2.12.9. Ensure that contractors supporting the project manager coordinate with the IRSO prior to bringing RAM onto USAF installations. **(T-1)**.

2.13. The Commander (or Director, or Chief), Installation Contracting, shall:

2.13.1. Ensure that all contracts involving RAM contain required contract clauses, see [paragraph 2.19.2](#). **(T-0)**.

2.13.2. Coordinate with the IRSO to ensure all solicitations for goods or services that may require the use of RAM contain appropriate award selection criteria. **(T-1)**.

2.14. The Commander (or Director, or Chief), Installation Logistics Readiness, shall:

2.14.1. Oversee the disposition, transportation, and shipment of HAZMAT (including RAM) installation-wide in accordance with 49 CFR Chapter I Subchapter C, Title 10 CFR Part 71, *Packaging and Transportation of Radioactive Material*, DTR 4500.9-R-Part II Chapters 204 and 208, AFI 23-101, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 23-122, *Materiel Management Procedures*, AFMAN 24-204, IATA, and this manual. **(T-0)**.

2.14.2. Ensure personnel performing HAZMAT transportation operations comply with training requirements associated duties referenced in 2.14.1. **(T-0)**.

2.14.3. Establish RAM specific HAZMAT transportation procedures, in coordination with IRSO, for the safe movement onto, off of, and around the installation. **(T-1)**.

2.14.4. Take measures adequate to prevent transfer of RAM to units on the installation without prior coordination with the IRSO and/or affected PRSO(s). **(T-1)**.

2.14.5. Develop and implement procedures to prevent the inadvertent transfer of RAM or items of supply known or suspected of containing RAM through the Defense Logistics Agency – Disposition Services system or Disposition Services Field Office. **(T-1)**. Establish procedures to notify the IRSO in the event of an incident(s) or the need to perform radiological survey(s) of items that have been identified by Defense Logistics Agency – Disposition Services system or Disposition Services Field Office as having the potential to contain RAM and/or components. **(T-1)**.

2.15. The Commander (or Director, or Chief), Installation Civil Engineering, shall:

2.15.1. Provide immediate notification to the IRSO of damage (e.g. fire, natural disaster, etc.) to buildings or waste sites where RAM is located, this includes any incident or event where these structures are potentially at risk because of proximity. **(T-1)**.

2.15.2. Coordinate with the IRSO to ensure installation emergency response plans include procedures for the theft, loss, sabotage, or release of RAM. **(T-1)**.

2.15.3. In coordination with the IRSO and Installation Commander, notify the State Emergency Response Commission and the Local Emergency Planning Committee when RAM incidents occur requiring execution of Emergency Planning and Community-Right-To-Know-Act (EPCRA) protocols. **(T-0)**.

2.15.4. Provide a list of facilities on the installation, which contains radioluminescent exit signs, to the IRSO at least annually or when changes occur. **(T-3)**.

2.15.5. Provide immediate notification to the IRSO upon discovering or disturbing potential radioactive waste sites on the installation, and prior to resuming any activities. **(T-1)**.

2.16. The Commander (or Director, or Chief), Installation Security Forces, shall:

2.16.1. Provide immediate notification to the IRSO of suspected, attempted, or actual theft or sabotage of RAM, to include any situation where the potential for collateral damage exists due to threats in proximity to RAM. **(T-3)**.

2.16.2. Ensure anyone transporting NRC licensed or permitted RAM onto the installation has a signed authorization from the IRSO prior to being granted access to the installation, excluding 91(b) material and RAM utilized/delivered to the medical treatment facility. **(T-3)**.

2.16.3. Provide immediate notification to the IRSO of any attempted unauthorized transport of RAM onto the installation, excluding 91(b) material. **(T-3)**.

2.17. The Permittee shall:

2.17.1. Be ultimately responsible for complying with all permit conditions, AFIs/manuals, and applicable federal regulations and also meet the following criteria, unless otherwise determined by the RICS: **(T-1)**.

2.17.1.1. Is a supervisor in the organization in which RAM is used, with operational and administrative control (e.g., unit commander, director, department chair, division chief) over the PRSO and all users; and **(T-1)**.

2.17.1.2. Is not the IRSO, the PRSO, a contractor, or user of the RAM authorized by the same permit. **(T-1)**.

2.17.2. Designate a qualified PRSO to manage the permitted RAM; with the authority, in writing, to suspend any operations that poses a significant health risk to personnel or the general public, a clear violation of regulations, or a high risk of negative impact to USAF operations, material, or real estate. **(T-1)**.

2.17.2.1. Submit their qualifications for approval by the RICS. **(T-1)**. For Template Permits, this requirement is satisfied by signing page two of the Request for Template Permit Action form.

2.17.3. Appoint a chairperson to oversee the Permit Radiation Safety Committee, if required, when the Permittee chooses not to fill the position. **(T-1)**. The chairperson cannot be the PRSO. **(T-1)**.

2.17.4. Approve the Radiation Safety Committee (RSC) charter and membership, when required. **(T-1)**.

2.17.5. Ensure RAM permit compliance with this manual and all responsibilities designated to a “licensee” in applicable NRC regulations not delegated to another organization/individual (e.g. not provide authority to the PRSO to sign documents authorizing any permit actions). (T-1).

2.17.6. Provide the PRSO and IRSO appropriate access to all activities associated with the utilization of permitted RAM. (T-1).

2.17.7. Ensure all correspondence with the NRC, concerning permitted and non-permitted RAM, flows through the RICS. (T-1).

2.17.8. Ensure all incident/investigation reports, regarding RAM exposures, are forwarded to the RICS in accordance with this manual. (T-1).

2.17.9. If applicable, submit an annual inventory of NRC-regulated SNM to the RICS by 1 March of each year for inclusion in the Nuclear Material Management & Safeguards System inventory. (T-1).

2.17.10. If applicable, submit a SNM Transaction Report to the RICS no later than one business day prior to shipping transactions and within 3 business days after a receiving transactions. (T-1).

2.17.11. If applicable, submit the annual inventory of Category 1 and 2 nationally tracked sources to the RICS by 1 January of each year for inclusion in the National Source Tracking System inventory. (T-1).

2.17.12. If applicable, submit a National Source Tracking System Transaction Report to the RICS no later than one business day prior to shipping transactions and within 3 business days after a receiving transactions. (T-1). **Note:** This only applies to a limited number of permittees; the RICS will contact permittees for which this applies.

2.17.13. Prepare and certify financial assurance plans or decommissioning plans, if required by the permit or applicable federal regulations. (T-0).

2.17.14. **The Permit Radiation Safety Committee (PRSC), if required by permit or federal regulations, shall:**

2.17.14.1. Develop procedures to execute the responsibilities of an RSC as prescribed by NUREG 1556 Volume 9, *Program-Specific Guidance About Medical Use Licenses* and NUREG 1556 Volume 11, *Program-Specific Guidance about Licenses of Broad Scope*, as applicable, and any additional responsibilities listed in this manual. (T-1).

2.17.14.2. For medical permits, when applicable, review NRC required criteria for Authorized Users, Authorized Medical Physicists, and Authorized Nuclear Pharmacists and provide recommendations and all documentation to the RICS for final decision. (T-1).

2.17.14.3. For non-medical permits, when applicable, review training, experience, and other qualification factors and grant authorization for individuals to utilize RAM under the permit. (T-1).

2.17.14.4. Periodically review, at least annually, the list of individuals authorized to utilize RAM under the permit to verify accuracy of the information and roles for which individuals have been approved are current. (T-1).

2.17.14.5. Review and approve or deny requests to use RAM within the scope of their issued permit. **(T-1)**. Approved uses must comply with this manual, permit conditions, and applicable Federal regulations. **(T-0)**.

2.17.14.6. Deny or approve minor changes in radiation safety rules with the advice and consent of the PRSC Chairperson and PRSO, as applicable. **(T-1)**. See 10 CFR Part 35 for medical specific guidance.

2.17.14.7. Establish specific requirements for special proposed uses of RAM (e.g., bioassays, physical examinations of users, and special survey methods). **(T-1)**.

2.17.14.8. Review the annual permit audits, performed by the PRSO and IRSO, and implement any corrective actions necessary to address audit findings. **(T-3)**.

2.17.14.9. Assists the PRSO in disseminating information to ensure permitted activities are performed safely and in compliance with applicable regulations. **(T-3)**.

2.17.14.10. In coordination with the PRSO, review dosimetry data quarterly for adverse trends, adequacy of controls, and to establish/modify investigation action levels. **(T-3)**.

2.17.15. The Chair, Permit Radiation Safety Committee (PRSC) shall:

2.17.15.1. Be the Permittee or an individual subordinate to Permittee, capable of making decisions on behalf the Permittee, and not the PRSO. **(T-1)**.

2.17.15.2. Ensure membership is consistent with the scope of permitted activities and regulatory requirements. **(T-0)**. The PRSC shall additionally include IRSO. **(T-1)**.

2.17.15.3. Ensure a quorum is present and documented for each PRSC meeting. **(T-1)**. A quorum consists of the Permittee (or designated chairperson), the PRSO, an IRSO, and at least half of the members of the PRSC. **(T-1)**.

2.17.15.4. Establish frequency for PRSC meetings, unless otherwise dictated by the permit. **(T-3)**.

2.17.15.5. Invite commanders whose resources and/or direct activities influence successful outcomes of permitted activities. **(T-1)**. Invite ancillary personnel (e.g., safety, housekeeping, infection control, maintenance, security forces) as deemed necessary. **(T-3)**.

2.17.16. The Permit Radiation Safety Officer (PRSO) shall:

2.17.16.1. Be a subordinate of the Permittee, have authorized access and/or utilization of permitted RAM and be an employee of the USAF, not a contractor, unless otherwise approved by the RICS. **(T-1)**.

2.17.16.2. Coordinate with the Permittee on requests for an initial permit (as proposed PRSO), renewals, amendments to an existing permit, or termination of a permit. **(T-1)**.

2.17.16.3. Assist the Permittee in RAM permit compliance with this manual and all responsibilities designated to a "licensee" in applicable NRC regulations not delegated to another organization/individual. **(T-1)**.

2.17.16.4. Notify the IRSO of activities affecting the RAM permit, to include: new applications, permit amendments, renewals, or terminations. **(T-1)**.

2.17.16.5. Notify the IRSO of activities affect the installation radiation safety program (e.g. changes in source-use locations, shipment of RAM, or methods of disposal, etc.). **(T-1)**.

2.17.16.6. Assist Permittee and IRSO to determine, report, and promptly investigate incidents/accidents involving permitted RAM. **(T-1)**.

2.17.16.7. Document and maintain records of RAM permit management required by NRC regulations and AFIs/manuals that apply to each permit, including the permit and permit application, amendments, and correspondence related to the permit **(T-0)**.; in addition the PRSO will maintain:

2.17.16.7.1. Permit policies and procedures for implementing requirements of this manual, the permit, and applicable federal regulations; **(T-1)**.

2.17.16.7.2. Communications with RICS; **(T-1)**.

2.17.16.7.3. Responses and corrective actions to findings from external inspection (AF RAM Permit Inspection by AFIA or NRC); **(T-1)**.

2.17.16.7.4. Permanent archival of permit termination documentation with the base civil engineer, the RICS, and the Air Force Civil Engineering Center (AFCEC). **(T-1)**. **Note:** .these records include the decommissioning plan if applicable, the final status survey report if applicable, NRC or Agreement State memoranda documenting acceptance of the final status survey report and approval for permit termination as applicable, the NRC Form 314, *Certificate of Disposition of Materials* (with all applicable attachments), the signed termination permit amendment from the RICS, and RICS memoranda documenting any long-term alternate or additional instructions. Files shall be stored electronically for permanent archival storage after permit termination. **(T-1)**.

2.17.16.8. Brief, at least annually, the Permittee and IRSO on the permit radiation safety program, including program regulatory compliance and the results of personnel exposures. **(T-1)**. Documents the annual brief with a memo, staff summary sheet, or electronic staff summary sheet signed by the Permittee and maintains this with permit records. **(T-1)**.

2.17.16.9. Ensure annual training is conducted in accordance with Title 10 CFR Section 19.12, *Instruction to Workers*, and is commensurate with the level of radiation risk represented by authorized permit activities. **(T-0)**. Training of non-radiation workers that work in the area shall be conducted as well. **(T-0)**. Implementation should follow guidance in NUREG 1556 guidance for the applicable permit type.

2.17.16.10. Ensure calibration of radiation instrumentation used for compliance monitoring according to American National Standards Institute guidance at intervals not to exceed one year unless otherwise specified by permit conditions, AF instruction, or Federal regulation. **(T-0)**. Radiation survey meters shall be capable of detecting the appropriate radiation type, measuring the energies of interest, and operationally checked with an appropriate check source prior to use. **(T-0)**. Retain calibration records in accordance with 10 CFR Chapter I (primarily 10 CFR Part 20). **(T-0)**. Records of operational checks are recommended, not required.

2.17.16.11. Ensure authorized users performing disposition and transportation functions (e.g., receipt, shipment, disposal, and packaging) for radioactive material (RAM) comply with training and other requirements specified in 49 CFR Chapter I Subchapter C, 10 CFR Part 71, DTR 4500.9-R-Part II Chapters 204 and 208, AFI 23-101, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 23-122, AFMAN 24-204, IATA, and this manual. **(T-0).**

2.17.16.12. One month in advance of the shipment or receipt of one gram or more of SNM, coordinate with the Permittee, IRSO, and RICS, then submit a completed DOE/NRC Form 741, *Nuclear Material Transaction Report*, to the RICS. **(T-1).**

2.17.16.13. Ensure the implementation of safety and security measures which in addition to general radiation protection shall include the timely reporting of defects and noncompliance in accordance with 10 CFR Part 21 as well as the protection of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and/or quantities of radioactive materials requiring an emergency plan for responding to a release (such as “toxic industrial radiologicals”, as listed in 10 CFR Part 37 Appendix A, 10 CFR Part 20 Appendix E, and 10 CFR 30.72 Schedule C, respectively) in accordance with Title 10 CFR Part 37, *Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material*, 10 CFR Part 20, and 10 CFR Part 30, respectively. **(T-0).** Consider “aggregation” of several RAM sources when determining exceedance of thresholds. **(T-0).** **Note:** PRSOs will interface with the IRSO and the RICS which will in turn interface with the NRC. **(T-1).**

2.17.16.14. Ensure all RIC permitted RAM possessed, used, or stored by the unit are correctly listed in a current and accurate inventory in RAMMIS. **(T-1).** Contact the IRSO or RICS for information on RAMMIS.

2.17.16.15. Assist the Radiation Safety Committee (RSC), as applicable, in understanding the responsibilities of discharging their duties.

2.17.16.15.1. Generate minutes of the meeting including, but not limited to:

2.17.16.15.1.1. The date of the meeting; **(T-1).**

2.17.16.15.1.2. Members present and absent; **(T-1).**

2.17.16.15.1.3. A summary of deliberations and discussions, including the numerical results of all votes; **(T-1).**

2.17.16.15.1.4. Recommended actions, including identifying the Office of Primary Responsibility and whether the action is open or closed; **(T-1).**

2.17.16.15.1.5. Approvals granted for individuals, protocols, or other actions, and a copy of the credentials or other documents used as the basis for the approvals; **(T-1).**

2.17.16.15.1.6. Deviations from or violations of this manual, the permit or Federal regulations; **(T-1).**

2.17.16.15.1.7. Changes to permit conditions and inspection results; and **(T-1).**

2.17.16.15.1.8. Self-inspection results and As Low As is Reasonably Achievable (ALARA) program reviews including a summary report of the occupational

radiation exposure records of all workers including individuals or groups with higher than expected exposures and established metrics to compare trends over time. (T-1).

2.17.16.15.2. Ensure the RICS, all permittees and PRSC members receive a copy of meeting minutes signed by the PRSC Chair no later than 45 days after a meeting. (T-1).

2.17.16.15.3. Retain meeting minutes until permit termination. (T-0).

2.18. The Units, Supervisors and Workers using any type of RAM shall:

2.18.1. Comply with the license or permit authorizing materials, local instructions, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFI 48-148, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, and IATA. (T-0). In addition, workers must:

2.18.1.1. Comply with the instruction of the IRSO and PRSO; (T-3).

2.18.1.2. Immediately report conditions that are of imminent danger to life or health, and those that may negatively affect USAF property, to either the IRSO or PRSO; (T-0).

2.18.1.3. Become familiar with NRC Form 3, *Notice to Employees* (if applicable); (T-0).

2.18.1.4. Perform all duties in a way that keeps radiation exposures ALARA; (T-0).

2.18.1.5. Wear dosimetry when required and store dosimetry in the designated control area when not in use. (T-0).

2.18.1.6. Take measures adequate to prevent override of engineering controls, modification of personal protective equipment or tampering with radiation dosimeters or purposely exposing radiation dosimeters to radiation or RAM; (T-0).

2.18.1.7. Bring observed violations to the attention of their supervisors. All workers will report allegations to the RICS or NRC using the procedures in Chapter 7. (T-0).

2.18.2. When hosted by, attached or assigned to a Joint Base/Unit or geographically separated unit (continental United States and outside the continental United States) without a base bioenvironmental engineer or IRSO, coordinate approval for the procurement, possession, use, storage, transportation, and disposition of RAM as well as responses and reports for incidents involving RAM through the Joint Base commander (or the commander's appointee/designee) and the AF unit's MAJCOM bioenvironmental engineer, who will in turn coordinate with the RICS. (T-1).

2.19. Requiring Activities (for contractor work), shall:

2.19.1. Coordinate with the IRSO to obtain information necessary to develop a Performance Work Statement/Statement of Work for compliance with all applicable statutes, regulations and instructions for managing RAM in the USAF. (T-1).

2.19.2. Ensure, as appropriate, the Performance Work Statement/Statement of Work includes the requirement for the contractor to submit: (T-0).

2.19.2.1. An NRC or Agreement State license. (T-0). For those areas of exclusive Federal jurisdiction, a copy of both the NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters*, and Agreement

State license must be submitted. **(T-0)**. For those areas of concurrent or proprietary jurisdiction in an agreement state, the respective Agreement State license is a valid authorization; or

2.19.2.2. A valid NRC Master Materials License-issued RAM permit from the US Navy or Veterans Affairs **(T-0)**. **Note:** The Navy, Veterans Affairs, and AF are the only entities that hold a NRC Master Materials License which can issue permits;

2.19.2.3. Written certification from DOE organizations or DOE prime contractors that they are exempt from NRC license requirements; and **(T-0)**.

2.19.2.4. Written approval from the IRSO to transfer, transport, or use temporary storage areas for RAM on the installation. **(T-1)**.

Chapter 3

GUIDANCE AND PROCEDURES FOR RADIOACTIVE MATERIAL USE AND PERMITTING

3.1. Prohibitions and Special Requirements for Accepting or Using RAM.

3.1.1. A USAF radioactive material (RAM) Permit shall not be cited as authority to receive RAM or devices that contain RAM unless specifically authorized on the permit. **(T-0)**.

3.1.2. Individuals or organizations shall not physically accept custody of “permissible” RAM without first obtaining written approval via a permit or other authorization from the RICS or AFSEC/SEW, as appropriate. **(T-0)**.

3.1.3. RAM shall not be collected as souvenirs or incorporated into souvenirs (e.g., 30 millimeter (mm) depleted uranium penetrators, dials and gauges containing radium paint, exit signs containing tritium). **(T-0)**.

3.1.4. RAM shall not be applied to people or clothing and shall not be incorporated in any food, beverage, cosmetic, drug, or other commodity, product or item unless specifically licensed by the NRC or permitted by a USAF RAM Permit authorizing the activity. **(T-0)**.

3.1.5. RAM shall not be included in displays open to the general public. **(T-1)**. Exceptions: materials for displays that teach personnel how to operate a device that functions only if RAM is incorporated as a component of the item or device; materials used to train personnel how to identify an item or substance; materials authorized by the AF Museum (e.g., static display aircraft or other weapon system components having dials or gauges containing RAM); or a USAF RAM Permit authorizes the display. The exceptions apply provided displays are properly marked and labeled and procedures are implemented for control of access to ensure exposures to worker and public are below the limits in 10 CFR Part 20, and As Low As is Reasonably Achievable (ALARA). **(T-1)**.

3.1.6. Targets used on operational ranges shall conform to [paragraph 2.10](#). **(T-1)**.

3.1.7. Only the RICS may cite the MML as authority to receive RAM or devices that have RAM into the USAF supply inventory. **(T-0)**.

3.1.8. Installation Commanders and permittees will recognize the RIC and/or RICS as the interpretive authority on any AFIA/SG finding. **(T-1)**. The AFIA/SG shall not be cited as authority to deviate from the permit, AFIs, or applicable Federal regulations. **(T-1)**.

3.1.9. Individuals or organizations shall first consult and coordinate with the RICS prior to responding to civilian or other non-USAF entity requests for assistance involving potential USAF-owned RAM. **(T-1)**.

3.1.10. Host nation laws and regulations concerning import, export, control, and/or disposal of RAM shall take precedence according to the terms of an applicable international agreement with the host nation if those laws and regulations are as, or more, stringent than the laws and regulations governing import, export, control, and/or disposal of RAM in the US; includes permits issued to USAF organizations. **(T-0)**. Radiation safety standards and requirements followed by USAF organizations overseas will always be at least as stringent as those followed by USAF organizations within the US. **(T-1)**. International Atomic Energy Agency (IAEA)

Safety Standards may be considered where applicable to avoid setting up separate requirements for USAF workers and local nationals.

3.1.11. USAF installations located within a host nation will honor contractor host nation licenses for using RAM in like manner as a NRC or Agreement State License (T-0); the RICS may be consulted for assistance or further guidance in these cases.

3.1.12. Exempt Quantities. This manual requires the inventory of material covered by Title 10 CFR Sections: 30.15, *Certain Items Containing Byproduct Material*, 30.19, *Self-luminous Products Containing Tritium, Krypton-85, or Promethium-147*, 30.20, *Gas and Aerosol Detectors Containing Byproduct Material* and any discrete source in Title 10 CFR Section 30.18, *Exempt Quantities*, not otherwise excluded by the RICS. (T-1). These exempt sources inventories will be maintained by IRSO and are not required to be in RAMMIS; examples of these materials are electron tubes, wrist watches, gun sights, check sources and chemical agent detectors. RAM integral to in-service aerospace vehicles or weapons system (e.g., magnesium thorium, optics and electronics) is exempt from inventory until such time it is removed for disposal by Aerospace Maintenance and Regeneration Center or Air Force Radioactive Recycling and Disposal (AFRRAD). (T-1).

3.2. Procuring Radioactive Materials.

3.2.1. For guidelines on procuring items with RAM, follow AFJI 23-504 and this manual. (T-1).

3.2.2. Individuals or organizations:

3.2.2.1. Shall not procure RAM or accept RAM into the USAF supply inventory without a permit (Title 10 CFR Section 30.34, *Terms and Conditions of Licenses*), see [paragraph 3.4](#) on permitting process. **Exception:** Reference [paragraph 3.3.2](#). (T-0).

3.2.2.2. Shall not procure facility radioluminescent exit signs (e.g., emergency exit signs containing tritium) and markers without RICS written approval. (T-1).

3.2.2.3. Shall coordinate procurement of RAM with IRSO in accordance with [paragraphs 2.9.5](#) and [2.9.12.1](#). (T-1).

3.2.2.4. Shall not procure RAM through the Air Force Government-Wide Purchase Card Program. (T-1).

3.3. Requirements for a Permit issued under the USAF Master Materials License.

3.3.1. All USAF organizations must obtain a radioactive material (RAM) permit from the RICS prior to purchasing, receiving, storing, distributing, using, transferring, or disposing of:

3.3.1.1. Specifically licensed byproduct, source, NARM, and SNM, to include those materials covered by the expanded definition of byproduct material in the Energy Policy Act of 2005, other than those exempted in [paragraph 3.3.2](#). (T-0).

3.3.1.2. Generally licensed devices (GLD) received by transfer (T-0), see [paragraph 3.10.4](#).

3.3.1.3. No other organization can issue a USAF RAM permit except for the RICS. (T-0).

3.3.2. USAF organizations may not require a permit for the following RAM (consult with RICS):

3.3.2.1. Certain concentrations or quantities of RAM, as detailed in 10 CFR Chapter I.

3.3.2.2. Nuclear weapons and certain radioactive parts of weapons systems classed as 91(a) and/or 91(b) material.

3.3.2.3. Reactor fuel elements and sources inherent to reactor operations (e.g., neutron start-up sources classed as 91(b) material).

3.3.2.4. Other material for which the RICS or AFSEC/SEW, as appropriate, waives the requirement for a permit.

3.3.2.5. Military operational use sources (e.g., Ra-226 dials and gauges) are exempt from NRC licensing requirements. **Note:** Military operational use is defined as activities such as warfare, combat, battlefield missions, training for battlefield missions, materials in stockpile storage, and materials that may be subject to decontamination and disposal. Other military possession and use of Ra-226, including medical or research activities, conducted by the DoD, or use in a manner similar to a commercial activity are subject to NRC regulatory authority, and may require a USAF RAM permit.

3.3.2.6. Exceeding 100 non-military operational use Ra-226 sources in the same location will require a USAF RAM permit (Title 10 CFR Section 31.12, *General License for Certain Items and Self-luminous Products Containing Radium-226*). **(T-0)**. **Note:** Up to 100 non-military or 100 military non-operational use Ra-226 sources may be used or stored at any one time, in the same location (e.g., single building), under a general license and may not require a permit.

3.4. Requesting Permits, Amendments, and Other Authorizations for RAM Use.

3.4.1. Initial applications for permits (reference [paragraph 2.17.16.2.](#)) are prepared and submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer **(T-3)**. Contact the RICS if an immediate mission critical permit or amendment is required. **(T-1)**.

3.4.1.1. The RICS can provide prescribed NRC forms, copies of regulatory guides, and additional guidance on the administrative aspects of permits. NRC forms and regulatory guides are also available through the Nuclear Regulatory Commission's website..

3.4.1.2. Permit applications require the signature of the Permittee on an NRC Form 313, *Application for Materials License*, and appointment of a PRSO and, if possible, an alternate PRSO. **(T-1)**. This application must be sent to the RICS, not the NRC. **(T-1)**.

3.4.1.3. Organizations planning new or unique applications, including NRC Category 1 and Category 2 sources, sources requiring national tracking, quantities of radioactive materials requiring an emergency plan for responding to a release, and/or unsealed RAM; must contact the RICS as early as possible to decide the scope of the permit, facility requirements, and the need for a site visit by the RICS staff. **(T-1)**. Plans must include provisions for baseline surveys prior to initially storing RAM in a location. **(T-1)**.

3.4.1.4. Category 1 and Category 2 safety and security controls shall be in place and inspected by AFIA/SG before the permit will be issued. (T- 0) Consider "aggregation" of several RAM sources when determining exceedance of Category 1 and Category 2 thresholds. (T- 0)

3.4.1.5. Applications for activities expected to have a significant environmental impact shall be evaluated in accordance with Title 32 CFR Part 989, *Environmental Impact Construction*. **(T-0)**. Activity shall not begin until the environmental impact report has been submitted with the permit application, and found acceptable, pursuant to subpart A of Title 10 CFR Part 51, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions*. **(T-0)**.

3.4.1.6. Pursuant to 10 CFR §30.35 and 10 CFR §30.36 (byproduct material), 10 CFR §40.36 (source material), and/or 10 CFR §70.25 (licensed source material), certain applications require a proposed decommissioning funding plan and/or a certification of financial assurance for decommissioning. **(T-0)**.

3.4.1.7. Each application to possess RAM in unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities in 10 CFR §30.72, Schedule C, requires either a dose assessment or an emergency plan pursuant to 10 CFR 30.32(i)(1)- (3). **(T-0)**. The RICS should be contacted to coordinate development of these materials.

3.4.1.8. Applicants desiring to ship, transfer or transport RAM greater than a Type A quantity (reference 10 CFR Part 71, Appendix A) must have an NRC approved transportation quality assurance program in accordance with Title 10 CFR Part 71, Subpart H, *Quality Assurance*; this can be accomplished by:

3.4.1.8.1. Submitting an application to the RICS following guidelines in Title 10 CFR Part 71, Subpart G, *Operating Controls and Procedures*, 10 CFR Part 71, Subpart H, and NRC Regulatory Guide 7.10, *Establishing Quality Assurance Programs for Packaging Used in Transport of Radioactive Material*. **(T-0)**. **Note:** Contact the RICS for guidance if not using a commercial NRC approved package.

3.4.1.8.2. Alternately, utilizing a source vendor or other NRC or Agreement State licensee with a NRC approved transportation quality assurance program. **(T-0)**. **Note:** Ensure that the contractor has jurisdictional authority to perform desired work, see [paragraph 3.4.4](#). **(T-0)**. Contact the RICS for guidance.

3.4.1.8.3. Applicants desiring to ship items falling under 10 CFR Part 37 must also implement additional security measures. **(T-0)**. **Note:** Contact the RICS for guidance, if needed, at least six months prior to shipping date.

3.4.2. Renewal Permit Applications:

3.4.2.1. USAF RAM Permits are issued with expiration dates. Renewal applications for permits are prepared and submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer. **(T-1)**.

3.4.2.1.1. Renewal applications for non-template permits must be submitted at least three (3) months, but not greater than six (6) months, prior to the expiration date to allow time for the application to be reviewed and the new permit issued in a timely manner. **(T-2)**.

3.4.2.1.2. Renewal applications for template permits must be submitted at least one (1) month, but not greater than three (3) months, prior to the set expiration date to allow time for the application to be reviewed and the new permit issued in a timely manner. **(T-2)**.

3.4.2.1.3. The existing permit will continue in full force and effect beyond the expiration date, provided the renewal application was submitted in a timely manner prior to the expiration date, and a “Deemed Timely Filed” memorandum has been received from the RICS, or AFSEC/SEW as appropriate. Failure to renew the permit will result in a Cease and Desist enforcement action from the RICS and the permit will default to possession only status and use of RAM will no longer be authorized. **(T-0)**. Failure to submit the renewal application in accordance with required timelines may result in RICS enforcement actions.

3.4.3. Permit Amendments: All requests must be submitted through the IRSO to the RICS with a courtesy copy to the MAJCOM bioenvironmental engineer. **(T-1)**. Permittees must apply for a permit amendment for any changes needed on their existing permit conditions, original application, or existing commitments, known as “tie-down” letters. **(T-0)**.

3.4.3.1. If a change must be initiated prior to permit amendment approval, then the Permittee must obtain verbal approval from the RICS, and maintain a record of each minor change until the permit amendment or renewal is granted. **(T-1)**. Documentation shall include: **(T-1)**.

3.4.3.1.1. The effective date of the change;

3.4.3.1.2. A copy of old and new radiation safety requirements;

3.4.3.1.3. The reason for the change;

3.4.3.1.4. A summary of radiation safety concerns to be considered before making the change;

3.4.3.1.5. The signature of the PRSO; and

3.4.3.1.6. The signatures of the authorized users affected by the change, the Permittee and the PRSC chairperson.

3.4.3.2. Permit amendments are not required for the following:

3.4.3.2.1. Editing radiation safety requirements or procedures for clarity or conformance with local publication formats or updating titles, business telephone numbers, and business mailing addresses;

3.4.3.2.2. Replacing permitted items with identical items;

3.4.3.2.3. Reassigning tasks among employees, unless permit involves identified Authorized Users; or

3.4.3.2.4. Assigning service contracts for services such as equipment repair or calibration, waste disposal, health physics or bioenvironmental engineering advisor.

3.4.3.3. Additionally, permittees must submit an amendment request to the RICS when personnel listed on the permit such as users or PRSOs permanently cease their duties or change their names. **(T-1)**. Permittees shall notify the RICS through a memorandum signed by the Permittee whenever the Permittee’s identity or email address changes as a result of change-of- command, deployment or for any other reason, within 30 calendar days of the change; the memo shall include the new email address for the Permittee and shall be maintained with the permit. **(T-1)**.

3.4.3.4. RAM must be placed in storage if a qualified PRSO is not available for greater than 30 days (e.g., deployed, TDY). **(T-0)**.

3.4.4. Do not allow non-USAF organizations to use RAM, including NARM, on USAF installations without prior written approval from the IRSO. **(T-2)**. This applies to any civilian organization or other Federal agency that desires to transfer, transport, or temporarily store RAM on or conduct operations using RAM on a USAF installation.

3.4.4.1. The non-USAF organization must send a request to the IRSO at least 30 calendar days before bringing the RAM onto the installation. **(T-2)** For contractors, these requirements must be included in the statement of work. **(T-2)**.

3.4.4.2. Requests must be in writing and include:

3.4.4.2.1. A brief description of the proposed activities; **(T-1)**.

3.4.4.2.2. A copy of a current NRC or Agreement State license with current NRC Form 241 for areas of exclusive Federal jurisdiction, when applicable. **(T-1)**. For those areas of concurrent or proprietary jurisdiction in an Agreement State, the respective Agreement State license is a valid authorization. The license must either specifically list the installation or authorize approval for work at temporary job sites anywhere in the US where the NRC or Agreement State has jurisdiction (NUREG 1556 Vol 20, *Guidance About Administrative Licensing Procedures*, and Title 10 CFR Section 150.20, *Recognition of Agreement State Licenses*). **(T-0)**. Exception: Contractors using generally licensed materials (e.g., certain Niton® Lead Paint Analyzers) and DOE or DOE prime contractors operating in accordance with Title 10 CFR Part 835, *Occupational Radiation Protection*, do not require an NRC license or NRC Form 241. **(T-0)**. DOE organizations and DOE prime contractors must certify, in writing, that they are exempt from NRC licensing requirements. **(T-2)**.

3.4.4.2.3. The name, local address, and telephone number for the responsible local representative and the name, address, and telephone number of the RSO named on their license; **(T-3)**.

3.4.4.2.4. For contractors, a copy of the performance work statement of the USAF contract describing work to be performed at the installation and the inclusive dates of the work; and **(T-3)**.

3.4.4.2.5. For contractors, a copy of the safety plan ensuring compliance with NRC, AFI, AFMAN and other safety requirements referenced in the performance work statement/statement of work be incorporated and shall state that the IRSO can conduct periodic assessments to ensure contractor personnel are complying with radiation safety practices to prevent exposures to USAF personnel and avoid contamination of government property. The IRSO and contractor shall promptly report any issues to the Contracting Officer, Base Safety Office, and the Contracting Officer Representative. **(T-1)**. In addition, the safety plan should specify the IRSO has the authority to suspend contractor operations believed to be unsafe and promptly notifying the Contracting Officer and Contracting Officer Representative. **(T-1)**.

3.4.4.3. Agreement State licensees using NRC regulated materials in areas of exclusive Federal jurisdiction must provide a copy of the NRC Form 241 approved by either the

USAF installation's or contractor's NRC Region according to 10 CFR §150.20. **(T-0)**. The form must specify the correct locations and dates of performance of licensed activities. **(T-0)**. State licensees may not work on USAF or other installations of exclusive Federal jurisdiction, for more than 180 calendar days per calendar year, without first getting an NRC license. **(T-1)**.

3.4.4.4. Non-USAF organizations that do not have an NRC or Agreement State License with current NRC Form 241 and who are not DOE or DOE prime contractors exempted from licensing must contact the RICS for guidance and approval to use RAM on an USAF installation. **(T-1)**.

3.4.5. Permittees under new permits will notify AFIA/SG immediately upon first receipt of RAM. **(T-2)**.

3.5. Posting Notices to Workers.

3.5.1. Each Permittee for NRC-licensed radioactive material (RAM) (continental United States and outside the continental United States) must prominently post the latest NRC Form 3, *Notice to Employees*, in the workplace(s) storing or using the licensed RAM. **(T-0)**. Additionally, each Permittee shall prominently post a supplemental notice that briefly describes the nature of, and access to, current versions of the following: 1) regulations in 10 CFR Parts 19 and 20; 2) the permit, permit conditions, or documents incorporated into a permit by reference, and amendments thereto; 3) operating procedures applicable to permitted activities; 4) any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued pursuant to 10 CFR Part 2 Subpart B, and any response from the Permittee; and, 5) any other pertinent MML documentation, in accordance with Title 10 CFR Section 19.11, *Posting of Notices to Workers*. **(T-0)**. **Note:** AF logistics personnel engaged in the transportation of RAM remain exempt to the extent that they transport or store RAM in the regular course of carriage for another or storage incident thereto, in accordance with Title 10 CFR Sections: 30.13, *Carriers*, 40.12, *Carriers*, and 70.12, *Carriers*. **(T-0)**.

3.5.2. Permittees, in accordance with 10 CFR Part 21, must also post a copy of Section 206 of the Energy Reorganization Act of 1974 and a notice regarding the availability of the regulations and procedures adopted according to Title 10 CFR Section 21.6, *Posting Requirements*. **(T-0)**.

3.6. Control of Radioactive Material, and Information Concerning Radioactive Material.

3.6.1. All exempt and non-exempt RAM (e.g., residual radioactive material from past nuclear weapon accidents, incidents, research, maintenance activities, and dismantled/decommissioned reactor 91(b) material still under USAF possession), must be secured from unauthorized removal or access. **(T-1)**. Radioactive materials that are used in unrestricted areas must be under the constant surveillance of an individual authorized under a valid USAF permit or NRC/agreement state license when not in storage. **(T-0)**.

3.6.2. All permitted and licensed radioactive sources and devices must be inventoried as follows: **(T-0)**.

3.6.2.1. Permitted RAM or devices shall be inventoried at the frequency specified in the permit. **(T-0)**.

3.6.2.2. Licensed RAM or devices not requiring a permit (e.g. Generally Licensed Devices) shall be inventoried in accordance with the applicable CFR, Technical Order or AFI/AFMAN. **(T-0)**.

3.6.2.3. Unless otherwise specified, inventories of permitted or licensed materials SHALL be conducted at intervals not to exceed six (6) months. **(T-0)**.

3.6.3. Inventory documentation must be retained in accordance with the applicable CFRs. **(T-0)**. Documentation must include the following:

3.6.3.1. Date of the inventory; **(T-0)**.

3.6.3.2. Model number and serial number of each source, if assigned; **(T-0)**.

3.6.3.3. The identity of the radionuclide, manufacturer date, and source activity **(T-0)**;

3.6.3.4. The location of each source; **(T-0)**.

3.6.3.5. The name of the individual conducting inventory; **(T-0)**.

3.6.3.6. The signature of the PRSO endorsing the inventory **(T-3)**.; and

3.6.3.7. NSN, if applicable. **(T-3)**.

3.6.4. Information Security and Increased Controls for Certain Quantities of RAM: All RAM and information about this RAM shall be protected from unauthorized access/use. **(T-0)**. Specific requirements are provided in 10 CFR Part 37, NRC Regulatory Issue Summary 2005-31, *Control of Security-related Sensitive Unclassified Nonsafeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material*, and any RIC directions. The thresholds for NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, and Category 3 sources requiring sensitive unclassified non-safeguards information (SUNSI) protection, are listed in 10 CFR Part 37 Appendix A, 10 CFR Part 20 Appendix E, and NRC Regulatory Issue Summary 2005-31, respectively). Consider “aggregation” of several RAM sources when determining exceedance of thresholds. **(T-0)**.

3.7. Transferring Permitted Radioactive Material.

3.7.1. Permitted or licensed RAM shall only be transferred to:

3.7.1.1. An organization or person authorized to receive the materials under the terms of a USAF, US Navy, or Veterans Affairs RAM permit; NRC license; or Agreement State License. **(T-0)**.

3.7.1.2. USAF agencies with written authorization from the RICS or AFSEC/SEW, as appropriate. **(T-0)**.

3.7.1.3. DOE and DOE prime contractors who certify, in writing, that they are authorized to receive the materials. **(T-0)**.

3.7.1.4. Organizations or persons outside the US under an export license issued in accordance with Title 10 CFR Part 110, *Export and Import of Nuclear Equipment and Material*. **(T-0)**. Permission to transfer USAF RAM between the USAF and a foreign government requires pre-coordination with the RICS and is determined on a case-by-case basis. **(T-1)**.

3.7.1.5. Common and contract carriers, freight forwarders, and warehouse workers, for transporting or storing materials subject to 10 CFR §30.13, 10 CFR §40.12, and 10 CFR §70.12. **(T-0)**. Package, label, and consign materials for shipment according to 10 CFR Part 71 and Title 49 CFR Part 173, *Shippers—General Requirements for Shipments and Packaging*. **(T-0)**

3.7.2. Permittees shall ensure that any recipient has authority to receive the RAM before making the transfer by: **(T-0)**.

3.7.2.1. Obtaining a copy of the recipient's NRC license, USAF, US Navy, or Veterans Affairs RAM permit, or Agreement State license giving authority to receive the RAM, or

3.7.2.2. Obtaining a letter from the recipient RSO or Permittee to receive the materials, to include the license or permit number, issuing agency, expiration date, type, form of RAM, and the authorized amount.

3.7.2.3. In emergencies, telephonic certification is authorized when followed up with a letter or message within 10 days.

3.7.3. Reports of Nuclear Material Transaction Reports, when required by Title 10 CFR Section 40.64, *Reports*, or 10 CFR §74.15 respectively, must be used for specific transfers **(T-0)**; see [paragraphs 2.17.10, 2.17.12 and 2.17.16.12](#).

3.7.4. When shipping NRC specifically licensed, generally licensed or permitted RAM, a RAM owning organization member (e.g. PRSO) will verify the RAM is received by the ship-to-address and/or the intended destination. **(T-0)**. Verification of receipt, in writing, by the recipient is the preferred method; this includes the use of a receipt to show change of custody whenever transferring RAM from the permitted unit to a shipper/carrier, vendor, or another unit. If for some reason written verification cannot be accomplished, then telephonic confirmation may be used provided it is documented and includes name, number and title of the person verifying the receipt and date of the telephonic conversation. When receiving materials from another USAF organization or when requested by a non-USAF shipper, confirm receipt in writing. **(T-0)**. For items shipped to and from Distribution Depots, documentation in Defense Logistics Agency's Defense Logistics Management System is acceptable. Transfer (turn-in/shipment and receipt at receiving end) documentation associated with termination of permitted activities must be provided to the RICS to document applicable permit amendments and permit termination requests. **(T-0)**. Reference DTR 4500.9-R-Part II, *Cargo Movement*, and 49 CFR Chapter I, Subchapter C.

3.7.5. Report to the RICS the transfer of generally licensed material with the information required by the NRC in accordance with Title 10 CFR Section 31.5, *Certain Detecting, Measuring, Gauging, or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere*. **(T-0)**.

3.7.6. Coordinate with the RICS (or AFSEC/SEW, as appropriate) at least six (6) months in advance, for transfer of NRC Category 1 and Category 2 sources, requiring increased controls and national tracking, in accordance with 10 CFR Part 37, Appendix A and 10 CFR Part 20 Appendix E, respectively). **(T-2)**. Consider "aggregation" of several RAM sources when determining exceedance of thresholds. **(T-0)**.

3.7.7. Keep records of all transfers in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**. The transfer receipt format shall at a minimum include the date of physical receipt of the item(s); serial number(s); description and quantity of the item(s); and, the name and signature of the recipient. **(T-1)**. **Note:** Transfer of permitted radioactive material from office to office at an installation, including the logistics readiness squadron cargo movement section, should be documented. The AF Form 1297, *Temporary Issue Receipt*, or alternate form will be retained as a record of transfer. **(T-3)**.

Note: Transfer of all RAM from one permit to another does not constitute termination or relieve the Permittee from notifying the RICS or AFSEC/SEW as appropriate and providing information on decommissioning. Accordingly, such permits are considered in full force and effect and subject to inspection by AFIA/SG until the conditions of [paragraph 3.11](#) are met.

3.8. Transporting Radioactive Material.

3.8.1. USAF organizations shipping or transporting RAM must comply with 49 CFR Chapter I Subchapter C, 10 CFR Part 71, DTR 4500.9-R-Part II Chapters 204 and 208, AFMAN 24-210, AFJI 23-504, AFJMAN 23-209, AFMAN 24-204, IATA, and this manual. **(T-0)**.

3.8.2. Anyone desiring to ship or transport RAM shall contact the Transportation Officer within the logistics readiness squadron for information on transportation requirements. **(T-3)**.

3.8.3. The generating activity must properly identify RAM and items containing RAM when sending to the logistics readiness squadron cargo movement section for packaging and shipping. **(T-0)**. Identification of these items and/or RAM shall be in accordance with Title 49 CFR Section 172.202, *Description of Hazardous Material on Shipping Papers*, and shall include the following: **(T-0)**.

3.8.3.1. Radionuclide(s);

3.8.3.2. Description and number of items;

3.8.3.3. Item nomenclature and, if applicable, NSN, proper shipping name and UN number;

3.8.3.4. Individual and total activity in units of Becquerel with Curies in parentheses; and

3.8.3.5. Chemical and physical form.

3.8.4. When shipping between or to outside the continental United States locations, compliance with applicable status of forces agreement, IATA and International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*, are required. **(T-0)**.

3.8.5. Local AF installation logistics personnel (and AFRRAD personnel when applicable) will complete transportation/shipping discrepancy reports in accordance with the Defense Transportation Regulations upon receipt of an improperly shipped RAM package and will forward copies of submitted transportation/shipping discrepancy report information to the RICS and to the RIC members representing AF/A4. **(T-1)**.

3.9. Minimum Training and Experience Required for PRSO and Permit Instructors of Manufacture's Device Training.

3.9.1. Required Training for PRSOs. PRSOs must have formal training, and for some permits experience, commensurate with the type and quantity of radioactive material (RAM) possessed. **(T-0)**. General criteria used by the RICS includes the education, training and experience of the individual, regulatory requirements specified in 10 CFR Chapter I (if any) and guidance provided in the applicable NUREG 1556 volume for the type of permitted material. **Note:** Training for IRSOs and Unit Radiation Safety Officers is listed in AFI 48-148. All RSO training curricula must be approved by the RICS. **(T-0)**. Specific requirements for a RICS approved 40 hour PRSO course are listed in [paragraph 3.9.3](#). A summary of training requirements are listed in Table 1, *PRSO Training Requirements*.

3.9.2. Qualifications for Permit Instructors of Manufacturer's Device Training ("Train the Trainer" concept). Authorized users may provide the manufacturer's device training to others if they have the specific qualifications listed below. **(T-1)**. All manufacturer's device instructor training curricula and permit device training instructors shall be approved by the RICS. **(T-1)**. A summary of requirements is listed in [Table 3.2](#), *Permit Instructor for Device Training*; for permit types not listed, instructor qualifications for all other permitted devices shall be approved by the RICS on a case-by-case basis. **(T-1)**.

3.9.3. Radiation Safety Officer Course Curricula: An RSO course designed for training personnel to manage basic radiation safety programs involving non-template permits, shall, at a minimum, include:

3.9.3.1. Radiation safety topics: **(T-0)**.

- 3.9.3.1.1. Radiation vs. contamination,
- 3.9.3.1.2. Internal vs. external exposure and dose equivalents,
- 3.9.3.1.3. Biological effects of radiation,
- 3.9.3.1.4. Types and hazards associated with RAM possessed,
- 3.9.3.1.5. As Low As is Reasonably Achievable (ALARA) concept,
- 3.9.3.1.6. Time, distance, and shielding to minimize exposure,
- 3.9.3.1.7. Sealed source location within the gauge,
- 3.9.3.1.8. "Lessons learned" from prior events involving permitted material, and
- 3.9.3.1.9. Inspection by regulatory agencies.

3.9.3.2. Regulatory requirements for the following topics: **(T-0)**.

- 3.9.3.2.1. Applicable regulations,
- 3.9.3.2.2. License/Permit conditions, amendments, renewals,
- 3.9.3.2.3. Locations of use and storage of RAM,
- 3.9.3.2.4. Material control and accountability,
- 3.9.3.2.5. Annual audit of radiation safety program,
- 3.9.3.2.6. Transfer and disposal,
- 3.9.3.2.7. Record keeping,

- 3.9.3.2.8. Managing incidents/mishaps,
- 3.9.3.2.9. Recognition and assurance of radiation warning signs; visibility and legibility,
- 3.9.3.2.10. Requirement for complete and accurate information,
- 3.9.3.2.11. Employee protection, and
- 3.9.3.2.12. Deliberate misconduct.

3.9.3.3. The RICS may temporarily waive certain requirements for training (e.g., time of experience) based on mission need. However, the PRSO will work under a preceptor or limitations imposed by the RICS. **(T-1).**

Table 3.1. PRSO Training Requirements. (T-1).

PRSO Training Requirements						
Permit Type ⁴	Manufacturer's Training	RIC Approved Training Course ¹	Manufacturer's RSO Training ²	RIC Approved 40-hr Training Course	Experience with permitted RAM; requirements in 10 CFR 33 and NUREG 1556 V 11	Requirements in 10 CFR 35 and NUREG 1156 V 9
Template Permits (Depleted Uranium, IBIS, Niton, and AINS)		X				
Moisture Density Gauges (Non- Template)	X		X			
Fixed Gauges	X			X		
Cargo and Vehicle Inspection System	X			X		
Personal Security Screening System	X	X				
Limited Scope				X		
Broad Scope (A or B)					X	
Medical ³						X

¹The training course must be RICS-approved and must have an end of course test. Training materials will be provided by the IRSO.

²Must have at least an 8-hr RICS-approved PRSO course.

³Training programs for nuclear medicine technicians assigned as a medical PRSO must be reviewed and approved by their regional medical physics office.

⁴Contact the RICS for the minimum training requirements for PRSOs responsible for multiple permit types.

Note: Permits with quantities pursuant to 10 CFR Part 37 will require RICS approved 10 CFR Part 37 training.

Table 3.2. Permit Instructor for Device Training. (T-1).

Permit Instructor for Device Training					
Permit Type	One Year as a Full Time or 500 hrs Logged as an Authorized User	Manufacturer's RSO Course	RIC Approved Training Course¹	RIC Approved 40-hr Training Course	Manufacturer's Instructor Training Course
Moisture Density Gauges (Non-Template)	X	X			X
Vehicle and Cargo Inspection System	X			X	X
Personal Security Screening System	X		X		X
¹ The PRSO training course must be RICS approved.					

3.10. Managing Generally Licensed Devices.

3.10.1. Generally Licensed Devices (GLDs). The NRC or Agreement State issues a general license to acquire, receive, use, store or transfer certain devices that contain radioactive material (RAM) which have been manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued to the manufacturer by the NRC or an Agreement State. 10 CFR Part 31 details requirements of GLDs. GLDs are not normally specifically permitted by the RICS, since they have a NRC general license regulating the device. This NRC license is held by the purchaser of the device normally the Sq/CC. However, RICS reserves the right to permit a GLD if needed. GLDs are subject to direct inspection by the NRC and is not part of the AF MML, or AFIA process.

3.10.2. Acquisition of GLDs. GLDs will be purchased using Defense Federal Acquisition Regulations, assigned an NSN and registered in the Federal Logistics Information System and Hazardous Material Information Resource System. GLDs shall be registered in the USAF logistics system and identified as radioactive and inventoried in RAMMIS. (T-1). Additionally, see [paragraph 3.2](#) requirements.

3.10.3. Requirements for Possession of GLDs under 10 CFR §31. 5. All USAF units will comply with Sealed Source and Device Registry (SSDR) requirements for each specific GLD device type. **(T-0)**. In addition:

3.10.3.1. Unit responsibilities. Units with GLDs that do not possess a USAF RAM permit will appoint a responsible individual. **(T-1)**. For units with issued permits, the PRSO will be the responsible individual. **(T-1)**. The responsible individual shall:

3.10.3.1.1. Maintain a copy of the SSDR for the GLD on file. **(T-1)**.

3.10.3.1.2. Ensure that the requirements of the SSDR are met. **(T-0)**.

3.10.3.1.3. Provide the IRSO an updated inventory at least every six months so that the IRSO can input the data into RAMMIS. **(T-2)**.

3.10.3.1.4. Preserve all labels affixed to the device and ensure all instructions are followed (10 CFR Part 31). **(T-0)**.

3.10.3.1.5. If required by the SSDR, the device shall be tested for leakage, and proper operation of any on-off mechanism or indicator, if any, tested at no longer than six month intervals, or as specified by the SSDR (10 CFR Part 31). **(T-0)**. All leak tests will be coordinated with the IRSO so that appropriate protocols and materials are used. **(T-1)**.

3.10.3.1.6. Units shall suspend operation of the device if there is damage/failure to the device's shielding, detection of removable contamination exceeding 0.005 microCuries, failure of its on/off mechanism or for any defects that could affect radiation safety. **(T-0)**. Defects shall be reported to the RIC in accordance with 10 CFR Part 21, this manual, and any RIC directions. **(T-0)**.

3.10.3.1.7. Report any incidents, thefts or loss of GLDs to the IRSO. **(T-1)**. The IRSO will in turn comply with the reporting requirements of this manual and any RIC directions. **(T-1)**.

3.10.3.2. IRSO responsibilities. Installation IRSO will assist units with GLD management to include: **(T-1)**.

3.10.3.2.1. Maintain a copy of the SSDR for the GLD on file **(T-1)**.

3.10.3.2.2. Assist and support units to maintain compliance with SSDR requirements, e.g. leak testing if required. **(T-1)**.

3.10.3.2.3. Shall update in RAMMIS, all relevant GLD use information, including changes to the storage location, the responsible unit, and current address. **(T-1)**.

3.10.3.2.4. Report any incidents, thefts or loss of GLDs in accordance with this manual any RIC directions. **(T-1)**.

3.10.4. Transfer of GLDs. Units shall not transfer GLDs, unless the entity possesses a specific license or permit for the item(s) (10 CFR Part 31). **(T-0)**.

3.10.4.1. All transfers of GLDs shall be coordinated through the IRSO. **(T-1)**.

3.10.4.2. Inventories must be updated in RAMMIS to reflect the transfer or movement. **(T-1)**. Report the transfer of generally licensed material to the RICS, with the information

required by the NRC in 10 CFR §31.5 and, provide a copy of the SSDR to the gaining unit. **(T-0)**. The gaining unit shall provide verification of receipt, to include serial numbers, to the losing unit. **(T-1)**.

3.10.4.3. A leak test and shutter test, if required by the SSDR, must be performed prior to transferring the device, and shipping procedures must be in accordance with 49 CFR Chapter I Subchapter C, DTR 4500.9-R-Part II, AFJI 23-504, AFMAN 24-204 and this manual. **(T-0)**

3.10.4.4. If a GLD is transferred to another unit, a RIC permit is required; transfer will not be authorized until a RIC permit is in place **(T-0)**. **Note:** Air Force Radioactive Recycling and Disposal (AFRRAD) has a permit to accept GLDs for disposition.

3.10.4.5. IRSO will assist unit gaining a transferred GLD with RIC permit application. **(T-1)**.

3.10.5. Disposition of GLDs. GLDs shall be properly disposed of in accordance with **Chapter 4** and AFJI 23-504. **(T-1)**. Transfer of GLDs to any organization, including AFRRAD, AF will be coordinated with IRSOs and the RICS. **(T-1)**. Disposition of GLDs in the AF will be coordinated with AFRRAD. **(T-1)**. **Note:** GLDs will not be transferred the Defense Reutilization Management Office/system, or a Disposition Services Field Office. **(T-1)**.

3.10.6. Work with the IRSO and RICS to know which parts apply to your RAM (as many will not apply to your situation). **(T-1)**. You may consult the RICS with any questions. If a conflict exists, then maintain records with the more stringent retention period. **(T-0)**.

3.11. Cessation of Operations and Terminating Permits.

3.11.1. If permitted operations cease, the Permittee must initiate decommissioning operations within two years of the date when use of the permitted operation stops. **(T-0)**. For permits that are anticipated to be in a no-operations and/or storage only status for an extended period of time (greater than one year) the Permittee should request a permit amendment to place the permit in a no-operations and/or storage only status. **(T-2)**. This also applies to permits in decommissioning status for which decommissioning actions are in abeyance for an extended duration.

3.11.2. An organization shall request termination of their permit within 30 days after appropriate disposal or transfer of all regulated RAM and conclusion of any required decommissioning operations. **(T-2)**.

3.11.3. Permittees shall execute the RICS-approved decommissioning plan, and properly dispose of all RAM through AFRRAD or in accordance with the decommissioning plan. **(T-1)**.

3.11.4. Permittees shall request an amendment to terminate a permit by submitting:

3.11.4.1. A completed NRC Form 314; **(T-0)**.

3.11.4.2. The last inventory and confirmation that the RAM was transferred and received by another Permittee, or NRC or Agreement State licensee, or shipped to a licensed broker for disposal. **(T-0)**. **Note:** Do not simply send documents showing stock listed items were turned into installation supply. Demonstrate that all materials received were either

disposed of, or transferred properly, and no permitted materials remain associated with the permit; (T-0).

3.11.4.3. Demonstrate, as applicable (e.g. final status survey), no RAM or residual contamination above limits for unrestricted release as prescribed in NUREG 1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, NUREG 1757, *Consolidated Decommissioning Guidance, Volume II, Characterization, Survey, and Determination of Radiological Criteria*, and Title 10 CFR Section 20.1402, *Radiological Criteria for Unrestricted Use*; and (T-0).

3.11.4.4. For permits authorizing possession only sealed or plated sources, a final leak test demonstrating source integrity. (T-0).

3.11.5. Upon termination of the permit, the RICS will determine the records required for retention. Documents such as records of personnel exposure investigations, spills and contamination are of relevancy. Store the files electronically for permanent archival storage after permit termination. (T-1).

3.12. Retaining Records. Records shall be retained for the receipt, storage, distribution, use, transfer, disposal and incident involving permitted or licensed RAM in accordance with criteria in 10 CFR Parts: 19 (notices, instructions, and reports to workers), 20 (radiation protection standards), 21 (defects and noncompliance), 30 (byproduct material), 31 (general byproduct license), 32 (specific byproduct license), 33 (broad scope byproduct license), 34 (industrial radiography), 35 (medical use), 36 (irradiators), 37 (increased controls), 40 (source material license), 51 (environmental protection), 70 (special nuclear material license), 71 (transportation), and 74 (control/accounting of SNM); and, as implemented in <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>. (T-0). **Note:** You may consult the RICS with any questions.

Chapter 4

RADIOACTIVE MATERIAL REMEDIATION AND DISPOSAL

4.1. Managing and Remediating Radioactive Material.

4.1.1. Manage and remediate radioactive waste sites according to AFI 32-7020, *The Environmental Restoration Program*, and policies established by USAF/A4. **(T-2)**.

4.1.2. Radioactive material remediation is a complex multi-phase, multi-agency process that is outlined in NUREG 1575. This chapter contains the major responsibilities for each agency and provides a chronological sequence of events, Figure 1, *Generalized Sequencing of Radiation Material Remediation Work*, that should be followed in order to ensure regulatory compliance.

4.1.3. USAF organizations are not authorized to possess radioactive investigation derived waste or radioactive remediation waste unless authorized by a specific permit. **(T-1)**.

4.1.4. Any USAF organization, or agency acting on behalf of the USAF, performing intrusive characterization or site remediation involving radioactive material (RAM), must have:

4.1.4.1. An NRC RAM license, Agreement State RAM license, USAF RAM permit, Veterans Affairs, or US Navy RAM permit that authorizes site remediation activities; and **(T-0)**.

4.1.4.2. Approval of the RICS or AFSEC/SEW, as appropriate; and **(T-1)**.

4.1.4.3. Experience with site remediation. **(T-3)**.

4.1.5. Remediating a site generates radioactive waste that must be controlled and properly disposed of in accordance with current AFCEC guidance. **(T-1)**. Remediating a site may also release waste in quantities that dictate a prompt total exhumation.

4.1.6. Work and health and safety plans for remediation of radioactive sites, to include waste disposal procedures, must be coordinated as detailed in this chapter. **(T-2)**. If, during the course of remediation, a site is found to contain RAM which was not anticipated, then work must be temporarily ceased and the IRSO must immediately notify the RICS or AFSEC/SEW as appropriate, to determine requirements for continuation of field activities. **(T-1)**.

4.1.6.1. Plans for sites containing or suspected to contain only 91(a) or 91(b) materials shall be submitted to the Weapons Safety Division of the AFSEC/SEW. **(T-2)**.

4.1.6.2. Plans for all other sites shall be submitted to the RICS for review. **(T-1)**. Those sites containing or potentially containing byproduct, source, NARM, and SNM covered under the MML will be forwarded by the RICS to the NRC for their review. **(T-1)**.

4.1.7. Final reports of remediation of all sites containing RAM shall be sent to the RICS or AFSEC/SEW, as appropriate, for archival purposes. **(T-1)**. The Air Force Radioactive Recycling and Disposal (AFRRAD) office will maintain and archive all disposal records and manifests for radioactive waste generated from a remediation. **(T-1)**.

4.1.8. The RICS will:

4.1.8.1. Conduct historical search of documents, maintained at AFMSA/SG3PB, pertaining to potential Radioactive Waste Sites (RWS) upon request.

4.1.8.2. Issue permits for those sites that are either confirmed to have material contamination or will require intrusive investigation to identify scope of contamination, with the exception of sites containing only 91(a) or 91(b) material. **Note:** the permit may be issued under the MML or this manual.

4.1.8.3. Act as an advisor for the AFCEC/Remedial Project Manager (RPM) for engaging with and addressing regulatory authority issues.

4.1.8.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans as appropriate.

4.1.8.5. Conduct site visits if needed before and during remediation and/or decommissioning to ensure compliance with RICS approved procedures.

4.1.8.6. Advise AFIA on inspection protocol for each USAF permitted remediation activities.

4.1.8.7. Terminate permits for those sites that satisfy unrestricted release criteria, in accordance with 10 CFR 20.1402.

4.1.8.8. Assist AF/A4C in maintaining site registry.

4.1.9. AFSEC/SEW will:

4.1.9.1. Conduct historical search of documents maintained by the AFSEC pertaining to potential RWS containing 91(a) or 91 (b) materials upon request.

4.1.9.2. Issue possession only permits for those registered sites that are either confirmed to have 91(a) or 91(b) material contamination or will require intrusive investigation to identify scope of contamination.

4.1.9.3. Provide weapons related information, as required, to assist AFCEC/Remedial Project Manager (RPM), USAFSAM, Air Force Radioactive Recycling and Disposal (AFRRAD), and AFMSA/SG3PB in determining the radionuclides present at a 91(b) site and act as an advisor for the AFCEC/RPM for engaging with and addressing regulatory authority issues.

4.1.9.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans as appropriate.

4.1.9.5. Conduct site visits before and during remediation and/or decommissioning to ensure compliance with AFSEC approved procedures.

4.1.9.6. Terminate possession only permits for those sites that satisfy unrestricted release criteria.

4.1.9.7. Assist AF/A4C in maintaining site registry.

4.1.10. AF/A4C will:

4.1.10.1. Maintain and manage the USAF Radioactive Waste Site Registry (RWS) that is an identification and tracking database of all suspected and confirmed USAF RWS.

4.1.10.1.1. Present RWS Area of Concern documentation to the RICS for review and validation.

4.1.10.1.2. Register RWS Area of Concern data, upon RICS approval, into the AF Radioactive Waste Registry. Provide an updated list of USAF RWS registry to the RICS before 31 December of each year.

4.1.10.2. AFCEC will: confirm with USAF/A4C or AFSEC/SEW the registration of the site in the AF Radioactive Waste Site Registry projects involving the remediation of known or suspected RWSs, and confirm with the RICS the status of permitting requirements. In the absence of an installation RPM, AFCEC will assume responsibilities of section 4.1.13.

4.1.11. USAFSAM will:

4.1.11.1. Consult with the RPM in evaluating information pertaining to a suspected impacted site. **(T-1)**.

4.1.11.1.1. Search historical records and coordinate with the RICS and AFSEC/SEW for data collection and information validation. **(T-1)**.

4.1.11.1.2. Assess potential source terms and conduct a preliminary risk assessment to assist with a relative risk determination. **(T-1)**.

4.1.11.2. Provide technical consultation and expert remediation guidance to the RPM. **(T-1)**.

4.1.11.3. Assist the RPM, installation staff judge advocate, and the RICS in determining cleanup levels and regulatory requirements. **(T-1)**.

4.1.11.4. Conduct scoping surveys of suspected impacted sites as requested by the IRSO. **(T-1)**.

4.1.11.5. Consult as requested on all installation level actions, analysis, reports and recommendations with the IRSO. **(T-1)**.

4.1.11.6. Act as technical advisor to AFMSA/SG3PB, the RIC and AFSEC/SEW. **(T-1)**.

4.1.11.6.1. Provide technical review for all remediation plans, decommissioning plans, and final status surveys, and provide recommendation of approval or disapproval to the RICS. **(T-1)**.

4.1.11.6.2. Provide a quality assurance function to the Remedial Action and Final Status Survey process (e.g., review of plan requirements, data quality review, adequacy of work, and review of findings). **(T-1)**.

4.1.11.6.2.1. Provide quality assurance sample analysis, (e.g., 10% splits, duplicates and spikes) and confirmatory survey analysis for any contracted remedial action at the request of the RICS. **(T-1)**.

4.1.11.6.2.2. Perform a field confirmatory survey (e.g. 10% scan, in-situ and removable swipe samples) for any contracted remedial action at the request of the RICS. **(T-1)**.

4.1.11.6.2.3. Coordinate funding of this requested work through RPM, if not a DHP supported activity. **(T-1)**.

4.1.12. The Base Civil Engineer will:

4.1.12.1. Contact the IRSO upon the discovery or knowledge of a location that may contain radioactive waste. **(T-1)**.

4.1.12.2. Ensure all areas of concern, to include permitted sites, are identified in Tab C-1 of the Installation Master Plan and that the site is not disturbed until a proper assessment is performed. **(T-1)**.

4.1.12.3. Ensure that confirmed or suspected RWS that present a health or environmental risk have:

4.1.12.3.1. Site access limited with a strong physical barrier such as a chain link fence or other measures, to prevent exposure of individuals to radioactive material (RAM). An inspection of physical barriers shall be conducted, at a minimum, annually. **(T-1)**.

4.1.12.3.2. Post site boundaries for each accessible side with RAM warning signs stating that the site contains buried RAM. Ensure the signs are properly maintained (condition, visibility and legibility). Inspection of signs shall be conducted, at a minimum, annually. Design and display shall be in accordance with Title 10 CFR Sections: 20.1901, *Caution Signs*, 20.1902, *Posting Requirements*, and 20.1903, *Exemptions to Posting Requirements*. **(T-0)**.

4.1.12.3.3. Protect the soil surface against erosion using grasses or other ground covers (such as stone or gravel) to maintain site stability. **(T-2)**. Keep the site clear of deep-rooted shrubs and trees. **(T-2)**.

4.1.12.4. Ensure no RWS is removed from the Installation Master Plan, transferred, released, or disregarded as a RWS until approved by the RICS. (T-1) AFSEC/SEW and/or USAFSAM are available for assistance.

4.1.13. The Remedial Project Manager (RPM) will:

4.1.13.1. Serve as the responsible agent for the overall management, budgeting, and execution of a radioactive material remediation project. **(T-2)**. The RPM will usually be a member of the installation environmental management office. **(T-2)**. RPM will budget for USAFSAM verification survey if it is an environmental site. **(T-2)**.

4.1.13.2. Ensure a suspected area of concern is registered through their chain of command with the RWS registry maintained by AF/A4C. **(T-1)**. **Note:** radioactive waste may be discovered on an existing Installation Restoration Program (IRP) site.

4.1.13.3. Contact the IRSO to request assistance from USAFSAM in conducting a scoping survey of a suspected RWS area of concern. **(T-2)**.

4.1.13.4. Develop and submit an application for a permit to the IRSO once a registered site is identified as positive for radioactive waste or before intrusive investigation commences. **(T-1)**. **Note:** classified sites or material will require special procedures.

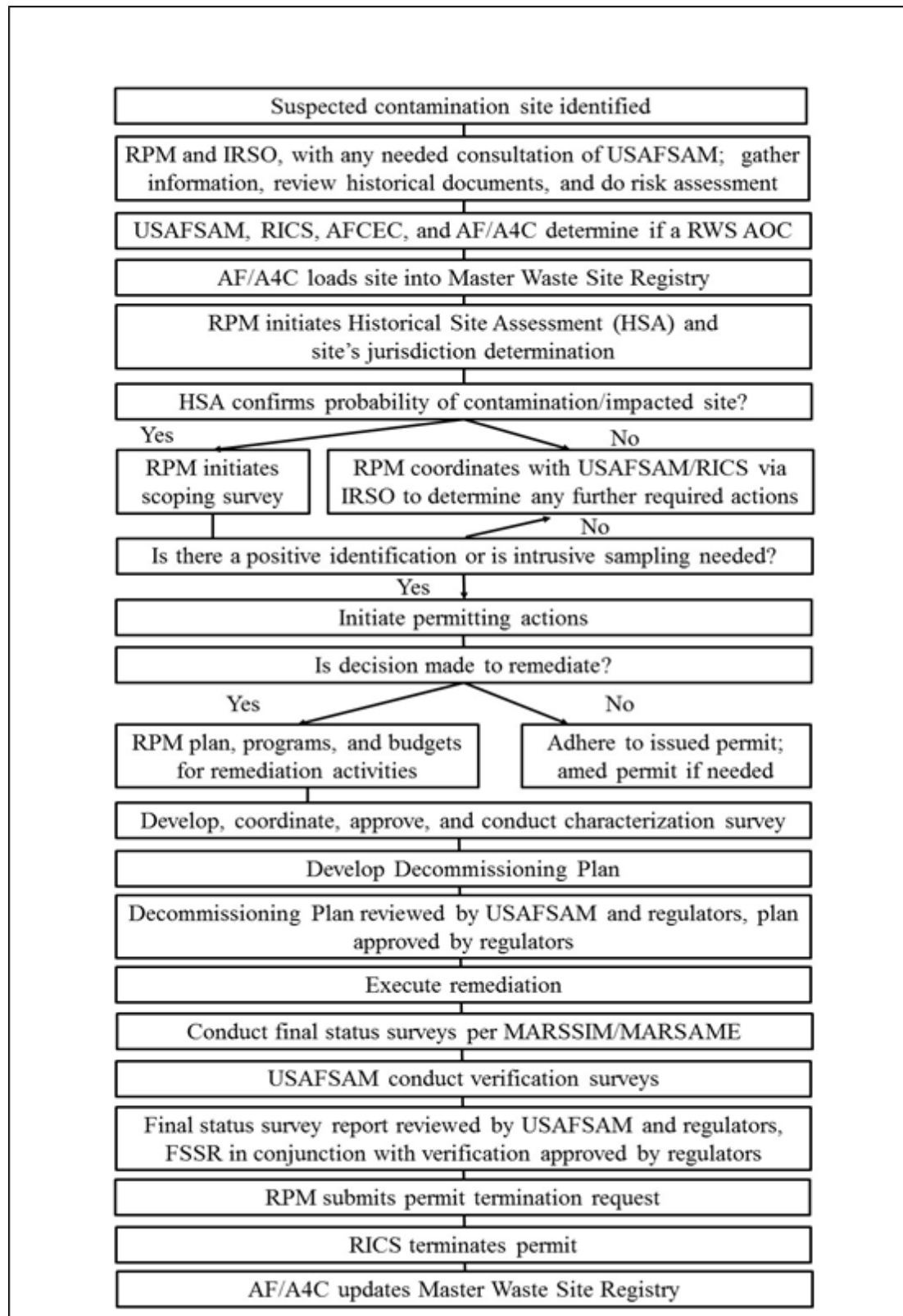
4.1.13.5. In conjunction with the IRSO:

4.1.13.5.1. Consult with AFCEC, as appropriate, for assistance in selecting a qualified contractor. **(T-2)**.

4.1.13.5.2. Consult with USAFSAM, the RICS, and regulatory agencies in selecting appropriate cleanup levels for remediation. **(T-1)**.

- 4.1.13.5.3. Request technical assistance from USAFSAM and the RICS in developing and executing decommissioning plans, site safety and health plans, and final status surveys. **(T-2)**.
- 4.1.13.6. Apply Multi-Agency Radiation Survey and Site Investigation Manual, and Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual survey methodologies (see NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, including *Supplement 1*) in developing all investigation and remediation work plans. **(T-1)**.
- 4.1.13.7. Submit for review and approval, decommissioning plans, site safety and health plans, and final status surveys to the IRSO who in turn submits them to the RICS. **(T-1)**.
- 4.1.14. The Installation Radiation Safety Officer (IRSO) will:
 - 4.1.14.1. Advise the Civil Engineer, RPM, commanders, and other base personnel on identification and remediation of potential public and occupational health risks associated with suspected or confirmed contaminated sites. **(T-1)**.
 - 4.1.14.2. Serve as the interface between the installation and the RICS, AFSEC/SEW and USAFSAM for all radiation related issues. **(T-2)**. When requested by the RPM, contacts USAFSAM and the RICS for technical assistance in developing decommissioning plans, remediation work site safety and health plans, and final status surveys. **(T-2)**.
 - 4.1.14.3. Submit an application for a permit to the RICS once a radioactive material impacted site is identified as positive or before intrusive investigation commences. **(T-1)**.
 - 4.1.14.4. Consult with AFCEC for assistance in selecting a qualified contractor. **(T-2)**.
 - 4.1.14.5. Review decommissioning plans, remediation work site safety and health plans, and final status surveys for the installation and submit them to the RICS for approval. **(T-1)**. Assures appropriate health physics oversight of the effort. **(T-1)**.
 - 4.1.14.6. Conduct annual surveys of radioactive waste sites to include:
 - 4.1.14.6.1. Visual inspection of the integrity of pipe caps or other closure devices that extend above ground. **(T-2)**.
 - 4.1.14.6.2. Conduct radiation surveys if there is an indication of intrusion or damage to the site. **(T-2)**.
 - 4.1.14.6.3. Ensure that fencing, security devices, and signage are in good order. **(T-2)**.
 - 4.1.14.7. Report to the RIC a release or exposure to RAM in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**.
- 4.1.15. The Air Force Inspection Agency will:
 - 4.1.15.1. Inspect, as appropriate, sites permitted under this chapter.
 - 4.1.15.2. Only inspect sites permitted by AFSEC upon their request.
- 4.1.16. The installation staff judge advocate will:
 - 4.1.16.1. Assist the RPM and the RICS in determining the legislative jurisdiction of contaminated sites where contractors will be performing work under their own (e.g., NRC or Agreement State) license. **(T-2)**.

4.1.16.2. Assist the RPM, USAFSAM, and the RICS in identifying applicable statutory and regulatory requirements and determining appropriate cleanup levels. **(T-2).**

Figure 4.1. Generalized Sequencing of Radiation Material Remediation Work.**4.2. Managing and Disposal of Radioactive Materials.**

4.2.1. IRSO and PRSOs jointly prepare requirements for waste management by considering local conditions such as quantities and types of waste produced, where waste is generated, and the location and configuration of available storage. **(T-2).**

4.2.1.1. The base Civil Engineer provides environmental consultation to generating units, the IRSO, and the Air Force Radioactive Recycling and Disposal (AFRRAD) office on the RCRA hazardous waste requirements of 91(b) mixed waste as related to the proper identification, handling, segregation, and storage of such waste. **(T-2).**

4.2.1.2. The base Civil Engineer oversees compliance with installation RCRA permits, if applicable, and/or RCRA requirements for storage, treatment, and disposal of mixed waste in accordance with applicable Federal, state, and local requirements, AFI 32-7042, *Waste Management*, and in coordination with the IRSO and the AFRRAD office. **(T-1).**

4.2.1.3. Installation generators will coordinate the disposal of radioactive waste and mixed waste with the IRSO, who will in turn, coordinate with the AFRRAD office. **(T-1).**

4.2.2. A USAF RAM permit is required for all radioactive waste storage areas used for permitted or licensed quantities of NRC regulated waste. **(T-1).**

4.2.2.1. Radioactive waste storage from more than one permit at a single location or otherwise co-mingling radioactive waste from more than one permit is prohibited unless specifically authorized by the RICS or AFSEC/SEW, as appropriate. **(T-1).**

4.2.2.2. Mixed waste from nuclear munitions maintenance shall not be commingled or stored with waste from a permit issued by the RICS unless approved by the RICS and AFSEC/SEW. **(T-1).**

4.2.3. Permittees shall ensure an inventory is maintained and all RAM and items containing or contaminated with RAM is secured pending disposal or transfer. **(T-0).**

4.2.4. Permittees shall also comply with all other applicable Federal, state, and local regulations and instructions regulating all hazardous and mixed waste at the site. **(T-0).** Coordinate with the base Civil Engineer to determine local requirements for managing and staging mixed waste. **(T-1).**

4.2.5. Radioactive waste shall be disposed of as soon as practical. **(T-3).** Under no condition shall mixed waste be staged for longer than 90 calendar days unless a RCRA permit authorizing storage for a longer period has been secured through the base Civil Engineer. **(T-1).** Do not collect or store radioactive waste for a period longer than 365 days. **(T-1).** Coordinate promptly with the AFRRAD office via the PRSO and IRSO. **(T-3).**

4.2.6. Dispose of RAM using one of the following methods:

4.2.6.1. Transfer to an authorized recipient (reference [paragraph 3.7](#)), subject to the restrictions of Title 10 CFR Section 20.2001, *General Requirements*; **(T-0).**

4.2.6.2. Decay in storage (for RAM having a physical half-life less than 120 days) provided:

4.2.6.2.1. Prior to disposal as ordinary trash, the container's surface and contents shall be surveyed with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from natural background; and **(T-0).**

- 4.2.6.2.2. All radiation labels and markings shall be removed or obliterated; and (T-0)
- 4.2.6.2.3. A record of each disposal shall be retained for 3 years. (T-0).
- 4.2.6.2.3.1. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal. (T-0).
- 4.2.6.2.3.2. Medical permittees must adhere to Title 10 CFR Section 35.92, *Decay-in-storage*. (T-0).
- 4.2.6.2.4. Permittees authorized to dispose by decay-in-storage will comply with the record keeping requirements prescribed in 10 CFR §35.92. (T-0).
- 4.2.6.3. Release to effluents in accordance with 10 CFR §20.2001, if authorized by the RICS. (T-0).
- 4.2.6.4. Release to the sanitary sewer in accordance with Title 10 CFR Section 20.2003, *Disposal by Release Into Sanitary Sewerage*, only if doing so has been determined by the base Civil Engineer to be permissible under the terms of the Clean Water Act permit and other applicable Federal, state, or local regulations (T-0); disposal by sanitary sewer, as described in 10 CFR §20.2003, applies only to circumstances where an installation is discharging effluent to a publicly owned treatment facility. Installations with their own sewage treatment facility must apply to the RICS for authorization to dispose of RAM in effluents in accordance with 10 CFR §20.2003; (T-0). or
- 4.2.6.5. Release Carbon-14 and Hydrogen-3 as non-RAM if it meets the requirements of Title 10 CFR Section 20.2005, *Disposal of Specific Wastes*, or other more stringent applicable Federal, state, or local regulations. (T-0).
- 4.2.7. Disposal by land-burial must be authorized by the AFRRAD office in accordance with [Chapter 4](#), to include adherence to Title 10 CFR Section 20.2006, *Transfer for Disposal and Manifests*. (T-0). Do not ship radioactive waste from an USAF installation without coordinating with AFRRAD and determining any required written instructions from AFRRAD. (T-1).
- 4.2.8. Permittees may propose alternative disposal procedures, in accordance with Title 10 CFR Section 20.2002, *Method for Obtaining Approval of Proposed Disposal Procedures*, to the RICS for approval.
- 4.2.9. PRSOs shall maintain RAM disposal records in accordance with Title 10 CFR Section 20.2108, *Records of Waste Disposal*, and as required in any RIC directions (T-0); IRSOs will assist PRSOs in the archival of disposal records with civil engineering, the RICS, etc. as appropriate. (T-3).
- 4.2.10. Organizations must be specifically permitted/licensed to receive waste containing RAM for (10 CFR 20.2108):
- 4.2.10.1. Treatment prior to disposal; (T-0).
- 4.2.10.2. Treatment or disposal by incineration; (T-0).

4.2.10.3. Decay in storage; **(T-0)**.

4.2.10.4. Disposal at a land disposal facility licensed under Title 10 CFR Part 61, *Licensing Requirement for Land Disposal of Radioactive Waste*; or **(T-0)**.

4.2.10.5. Disposal at a geologic repository under Title 10 CFR Part 60, *Disposal of High-level Radioactive Waste in Geologic Repositories*, or Title 10 CFR Part 63, *Disposal of High-level Radioactive Waste in a Geologic Repository at Yucca Mountain, Nevada*. **(T-0)**.

4.2.11. Requirements for Waste Generating Activities.

4.2.11.1. The PRSO will control access to laboratories or rooms where radioactive waste is generated or stored (storage area must provide sufficient protection to prevent degradation of packaging or the waste) when they are vacant or unattended. **(T-1)**.

4.2.11.2. The PRSO will maintain a log for information about radioactive material (RAM) placed into radioactive waste containers and record radiation levels. **(T-0)**. The log shall include: **(T-0)**.

4.2.11.2.1. Name of the installation;

4.2.11.2.2. The building and number of the room containing radioactive waste containers;

4.2.11.2.3. The types of containers and the identification number assigned to each container;

4.2.11.2.4. The date items were placed in the container;

4.2.11.2.5. A description of items placed in each container. Stock listed items shall contain a record each item's name and stock number. Sealed sources shall contain a record of the manufacturer; date manufactured, model, and serial number, if available. Identify other articles by their common names, for example, contaminated gloves, rags, and paper chucks;

4.2.11.2.6. The radionuclide(s) contained in the item;

4.2.11.2.7. The known or estimated radioactivity in curie or becquerel units. Do not abbreviate unit or prefixes;

4.2.11.2.8. The physical form of each radionuclide, for example, gas, solid, or liquid. **Note:** Do not treat radioactive waste by absorption of liquids, solidification of liquids or any other procedures that is designated for burial unless approval is obtained from the Air Force Radioactive Recycling and Disposal (AFRRAD) (reference [paragraph 4.2.13](#));

4.2.11.2.9. The chemical form of each radionuclide, for example, oxide, chloride, and the chemical name of the labeled compound;

4.2.11.2.10. The name and initials of the individual making the entry;

4.2.11.2.11. Meter readings in millirem or milliSievert per hour (mrem/hr or mSv/hr) measured outside the containers;

4.2.11.2.12. The name and initials of the individual conducting the survey; and

- 4.2.11.2.13. Evidence of PRSO and IRSO coordination, as applicable.
- 4.2.11.3. The PRSO will survey radioactive waste storage areas periodically to ensure compliance with 10 CFR Part 20 and document the results. **(T-0)**.
- 4.2.11.4. The PRSO will maintain records of all disposals of radioactive waste for the duration of the permit. **(T-0)**.
- 4.2.11.5. Before sealing a waste container, the PRSO must: **(T-1)**.
- 4.2.11.5.1. Verify for each waste container, the legibility and completeness of each waste entry, and visually inspect the containerized waste. To prevent contamination of personnel or the area, do not physically remove or handle the waste from the container.
- 4.2.11.5.2. Survey the container to ensure that detected radiation levels correspond to the entries recorded in the waste log. **Note:** A container storing a low-energy beta emitters or small quantities of a low-energy gamma emitter (e.g., Iodine-125) would not have high levels of x-ray or gamma radiation. Gamma surveys shall be conducted on these containers to ensure that high energy gamma emitting sources were not improperly placed in the container or that Bremsstrahlung radiation is not being produced at significant levels to cause a potential hazard.
- 4.2.11.5.3. The PRSO must secure the waste and records and investigate to resolve discrepancies if observations or measurements give unusual results.
- 4.2.11.6. Close and seal the plastic bag or container for transfer and disposal after the PRSO's audit. **(T-2)**.
- 4.2.12. Requirements and Rules for Storage of Radioactive Waste Containers.
- 4.2.12.1. Long-term storage is not encouraged and should be avoided. In general, store radioactive waste for no longer than one (1) year. **(T-1)**.
- 4.2.12.2. PRSOs must maintain a listing of all sealed radioactive waste storage containers and account for and inspect semiannually the integrity of each container. **(T-0)**. A record of the inspection shall be maintained for three (3) years. **(T-0)**.
- 4.2.12.3. A copy of the waste inventory sheet must be attached to each waste container held in long-term storage. **(T-1)**.
- 4.2.12.4. Do not open waste containers to conduct periodic inspections. **(T-1)**.
- 4.2.12.5. Ensure storage areas are properly ventilated prior to survey. **(T-1)**.
- 4.2.12.6. The PRSO shall conduct a final inspection of radioactive waste containers for integrity of the container and container seal; accuracy and completeness of log entries; proper markings and labels; and perform required surveys prior to removing the containers for transfer or disposal. **(T-1)**.
- 4.2.12.7. The PRSO will file inventory sheets and waste logs in the PRSO's permanent records of the permit authorizing long-term storage of the waste after disposal or transfer of each waste container. **(T-0)**.
- 4.2.12.8. Do not store liquid waste more than one (1) year. **(T-1)**. Solidify the waste with the help of AFRRAD. **(T-1)**.

4.2.13. Disposal by Burial or Recycling.

4.2.13.1. Radioactive sources no longer needed by the Permittee, and not authorized for decay-in-storage, may be disposed by burial or recycling. All requests for disposal by burial or recycling will be made, in writing, to AFRRAD. **(T-1)**. Written requests shall include the following information: **(T-1)**.

4.2.13.1.1. NSN or part number and manufacturer's name or code of the radioactive source, if applicable;

4.2.13.1.2. Nomenclature (e.g., lensatic/military compass, tube assembly, test sample);

4.2.13.1.3. Quantity of each item or amount of waste in terms of cubic feet;

4.2.13.1.4. Radionuclide(s);

4.2.13.1.5. Physical Form (e.g., solid, liquid, gas) to include any known hazardous waste constituents;

4.2.13.1.6. Chemical form;

4.2.13.1.7. Estimated radioactivity per item, and total radioactivity in milliCuries, and in becquerels, for each container; and

4.2.13.1.8. Radiation exposure rate in millirem per hour (milliSievert per hour) at 4 inches from surface of unpackaged item (for items only).

4.2.13.2. Installations located overseas are authorized to dispose of waste in the host country where they are geographically located to the extent that such disposal is in compliance with applicable host nation regulations and agreements and has been approved by the responsible (cognizant) host nation authority, approved by the RICS, and determined to be consistent with applicable Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive.

4.2.14. Exempt Quantity Item Disposal. Electron tubes and spark gaps containing RAM can be disposed of as normal trash providing the following conditions are satisfied:

4.2.14.1. Store electron tubes or spark gaps in a way that will prevent breakage. Each tube or spark gap must contain less than the quantities listed in 10 CFR 30.15 (do not accumulate exempt quantities) or does not contain more than the exempt quantity of NARM materials specified in [paragraph 3.10](#); **(T-0)**. and

4.2.14.2. The levels of radiation from each electron tube or spark gap does not exceed one (1) milliRoentgen per hour on contact when measured with a proper radiation detection instrument; **(T-1)**. and

4.2.14.3. Disposal is authorized by applicable host nation, state or country statutes and regulations. In overseas locations make the further determination that burial is determined to be consistent with applicable Geographic Combatant Command policy, and environmental annexes to operational orders, operational plans or other operational directive. **(T-0)**.

Chapter 5

RADIOACTIVE MATERIAL INCIDENTS AND MISHAPS

5.1. Reporting Radioactive Material Incidents and Mishaps.

5.1.1. Follow reporting criteria and time limits in 10 CFR Parts 19 (notices, instructions, and reports to workers), 20 (radiation protection standards), 21 (defects and noncompliance), 30 (byproduct material), 31 (general byproduct license), 32 (specific byproduct license), 33 (broad scope byproduct license), 34 (industrial radiography), 35 (medical use), 36 (irradiator), 37 (increased controls), 40 (source material license), 51 (environmental protection), 70 (special nuclear material license), 71 (transportation), and 74 (control/accounting of SNM). **(T-0)**. Make reports to the RICS, not the NRC. **(T-1)**. **Note:** You may consult the the IRSO and/or RICS to know which parts apply to your RAM.

5.1.2. The Permittee, the PRSO, and the IRSO must reinforce each other to ensure the RICS receives reports required by 10 CFR Chapter I. **(T-1)**. Report an incident if you have any reservations about whether reporting is required. **(T-1)**.

5.1.3. Report incidents initially by telephone (installations outside the US may report by message/email) and confirm by fax or message. **(T-1)**. Report to AFMSA/SG3PB (RICS). **(T-1)**.

5.1.3.1. To report after normal duty hours, call the Andrews Regional Command Post, DSN 858-5058, or (301) 981-5058. **(T-1)**. Give your name, organization, DSN and commercial phone numbers. **(T-1)**. State that you are calling with a "radioactive material incident report" and ask for the AFMSA/SG3PB (RICS) duty officer. **(T-1)**.

5.1.3.2. Inform the Installation Chief of Safety, MAJCOM/SEW, and IRSO of any INRAD or 91(b) material mishaps in accordance with AFI 91-204, *Safety Investigations and Reports*. **(T-2)**.

5.1.3.3. The Unit Radiation Safety Officer or Weapons Safety Officer, in accordance with AFI 91-108, will inform HQ AFSEC/SEW through AF Safety Automated System of any abnormal exposures and/or suspected overexposures to personnel or the public from a mishap involving INRAD or 91(b) material. **(T-2)**.

5.1.4. Time limits for reports begin when the event occurs or is first discovered. Incidents requiring an immediate report must be forwarded within three (3) hours. **(T-1)**. Realize the RICS must contact the NRC in turn and the Air Force has a total of four (4) hours to make an immediate report notification to the NRC **(T-0)**.—make every effort to report well before the stated reporting suspense. **(T-1)**. Include as much of the information as possible, but do not delay reporting if you have not collected all the pertinent information. **(T-0)**.

5.1.5. The RICS directs follow-on written reports or information needed to comply with NRC regulations.

5.1.6. A copy of all written reports must be forwarded to the IRSO, Installation Commander, MAJCOM bioenvironmental engineer, and AFIA/SG. **(T-2)**.

5.1.7. The requirements in [paragraphs 5.1.1](#) through [5.1.6](#) are separate from the reporting requirements of AFMAN 10-206, *Operational Reporting*, and AFI 91-204. This manual does

not prescribe the reporting requirements of incidents or mishaps involving only nuclear weapons, nuclear weapons parts, reactors and fuel assemblies, and space systems exempted from NRC regulatory authority under AEA, Section 91(b).

5.1.8. EPA regulations require reporting releases of RAM characterized as hazardous substances under 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*. **(T-0)** The EPA lists some of the chemical forms of radionuclides and many of the non-radioactive chemical constituents that may be part of the release with radionuclides as a result of an industrial process. Report spills of radionuclides or mixed hazardous materials to the environment in accordance with AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*. **(T-2)**. These reports will typically be separate from the reporting requirements described in this manual.

5.1.9. Radiological incidents that could potentially expose members of the general public or accidental releases of RAM to the environment must be reported to civilian authorities (Emergency Planning and Community Right-to-Know Act). **(T-0)**. The IRSO provides information, approved by the installation commander, and released through the installation public affairs office, of these types of incidents. **(T-2)**. Security restrictions on classified or sensitive information shall be adhered to except in cases of immediate risk to health and/or significant environmental impact. **(T-0)**.

5.1.10. Safeguard classified information when making reports. **(T-0)**. Special care shall be taken when reporting and investigating an incident or mishap under AFI 91-204 to ensure that reports forwarded to the RICS do not contain classified or sensitive unclassified information. All information will be properly marked and secured from unauthorized access, as applicable. **(T-0)**. All reports involving RAM exceeding NRC quantities of concern shall be handled as sensitive information and transmitted as directed by the RICS per NRC requirements of 10 CFR Part 37. **(T-0)**.

5.1.11. By Federal law, the USAF must give the NRC certain types of information normally protected from public release, to include personally identifiable information and exact locations of RAM. **(T-0)**. When investigating the cause of an incident or mishap and the involvement of persons for reports under this manual, maintain confidentiality of information. **(T-0)**.

5.2. Investigating Radioactive Materials Incidents and Mishaps.

5.2.1. The Permittee is responsible for investigating, performing a root cause analysis in accordance with accepted AF methodologies, and preparing a report on events, such as overexposure or loss of material, exact requirements are dependent on RAM and referenced [paragraph 5.1.1](#), in accordance with 10 CFR Chapter I, this manual, and any RIC directions. **(T-0)**.

5.2.2. The Commander of the permit holding organization is responsible for the investigation and report for reportable events involving non-permitted radioactive material (RAM). **(T-1)**. The PRSO, assisted by the IRSO, normally performs the investigation. **(T-3)**.

5.2.3. Investigating a mishap or incident according to AFI 91-204 may generate information requiring a separate report that can be forwarded to the NRC. Reference [paragraphs 5.1.10](#) and [5.1.11](#). about protecting classified information. Installations may consult with the RICS as needed.

5.2.4. Forward reports to organizations listed in [paragraph 5.1.6](#). (T-1).

5.2.5. The RICS will decide when an investigation of an event involving RAM governed by this manual is complete.

5.2.6. The NRC, AFIA/SG, or the RICS reserves the right to independently investigate an incident or mishap involving permitted or NRC-licensed RAM to confirm USAF reports or to decide whether the installation violated permit conditions, this manual or Federal regulations.

Chapter 6

INSPECTION AND ENFORCEMENT

6.1. Inspecting Permit Holders and Enforcing Compliance.

6.1.1. Inspections: Inspections of permittees' issued USAF radioactive material (RAM) permits shall be conducted by AFIA/SG, the RICS, and/or the NRC. Unannounced inspections are routinely conducted to assess compliance with permit conditions, AF instructions, and Federal regulations. Detailed inspection policy for permits is provided in [paragraph 6.2](#).

6.1.1.1. The permit type and scope sets the frequency and content of routine AFIA/SG inspections.

6.1.1.2. An inspection category is assigned to each permit along with the corresponding inspection frequency, which is stated on the cover letter issued with the permit, or its amendment or renewal. More frequent inspections may be made based on scale of economies during travel, to enforce compliance, evaluate a specific problem or follow-up to determine if corrective actions have been taken.

6.1.1.3. Copies of USAF inspection reports are forwarded to:

6.1.1.3.1. The Permittee and PRSO;

6.1.1.3.2. The owning MAJCOM bioenvironmental engineer;

6.1.1.3.3. The RICS (AFMSA/SG3PB); and

6.1.1.3.4. The NRC, if the permit is issued under the MML.

6.1.1.4. Mark, handle and safeguard these reports according to AFI 90-201.

6.1.1.5. Permittees must report corrective actions for noncompliance in accordance with this manual and AFIA/SG. **(T-1)**.

6.1.1.6. The NRC regional offices conduct permit compliance inspections without notice as part of the NRC's continual assessment of the USAF's permitting and inspection program.

6.1.1.6.1. NRC inspections may be concurrent with, or separate from, the USAF's permit compliance inspections.

6.1.1.6.2. The NRC will send a formal inspection report to the RICS with a Notice of Violation (NOV) for any areas of non-compliance noted during an NRC inspection.

6.1.1.6.3. The RICS will subsequently send a copy of the inspection to the Permittee, and when required, request a written response detailing any corrective actions for NOV's noted.

6.1.1.6.4. The RICS will provide copies of both the NRC inspection report and any written response from the Permittee to AFIA/SG.

6.1.2. Enforcement: The RICS may take enforcement action as a result of reported incidents, inspection findings, or identified violations. Enforcement details are provided in [paragraph 6.3](#).

6.1.2.1. The RICS takes administrative enforcement actions including:

6.1.2.1.1. Issuances of NOVs;

6.1.2.1.2. Adjusting AFIA/SG findings and NOVs;

6.1.2.1.3. Suspending or rescinding authority to possess or use RAM;

6.1.2.1.4. Implementing additional control measures to permits; and/or

6.1.2.1.5. Rescinding a person's authority to use or supervise use of RAM.

6.1.2.2. Commanders retain responsibility for the discipline of individuals according to the Uniform Code of Military Justice. **(T-3)**.

6.1.2.3. The NRC can also enforce regulatory compliance in accordance with Title 10 CFR Part 2, *Agency Rules of Practice and Procedure*. The NRC's enforcement policy and enforcement procedures can be found on the NRC's website.. **Note:** The NRC also issues press releases on enforcement actions.

6.1.2.4. Approval and acceptance of Permittee corrective actions are completed by the RICS.

6.2. Inspection Policy.

6.2.1. Introduction. The inspection program for permitted and generally licensed radioactive material (RAM) serves to assess compliance with permit conditions and Federal regulations (e.g., NRC and Department of Transportation). The frequency and duration of the inspection shall be based on the inspection category assigned by the RICS, complexity of the permit, overall risks of the permitted activity, and opportunity to witness infrequent or unique procedures. In addition to AFI 90-201, *The Air Force Inspection System*, requirements:

6.2.2. Inspection Protocol.

6.2.2.1. The U.S. Nuclear Regulatory Commission (NRC) shall have identification and, as necessary, be able to demonstrate appropriate clearance. The Permittee has a right and duty to challenge unknown individuals presenting themselves as inspectors.

6.2.2.2. Inspections are conducted in accordance with AFI 90-201. Inspections may be conducted at times outside of normal duty hours; specifically, when the use or receipt of permitted material is outside of normal duty hours.

6.2.2.3. A unit that has deployed the PRSO and does not have an available alternate PRSO is still subject to inspection. The permit shall be revised to possession only during the PRSO deployment and an administrative officer should be named to the permit. **(T-1)**. Failure to comply with the conditions of the permit, this manual or applicable Federal regulations may result in a violation for non-compliance; particularly, if permitted material is not properly secured and controlled.

6.2.2.4. The RICS will receive and forward all NRC inspection reports as appropriate. The RICS will ensure NRC violations get loaded into Inspector General Management Evaluation System for appropriate tracking and closure.

6.2.3. Inspection Types.

6.2.3.1. New Permit Inspections (Announced) shall be conducted approximately six months after permitted materials are received. Permittees are required to immediately notify AFIA/SG when permitted materials have been received.

6.2.3.2. Routine Permit Inspections (Unannounced) shall be conducted at intervals established by the permit. Inspection frequency may be changed based on Permittee performance.

6.2.3.3. Follow-up Permit Inspections (Announced) shall be conducted when permittees receive Severity Level I-III violations as the result of an AF or NRC inspection. Inspections of this type will be requested by the RICS and conducted by AFIA/SG. They will occur no later than six months following closure of corrective actions. In addition, RICS and AFIA staff will review like permits with the potential for similar violations and may direct off cycle inspection or staff assistance visits.

6.2.3.4. Collaborative Permit Inspections: AFIA/SG may choose to accompany the NRC during an inspection. NRC inspections may occur at any time and are not bound by the intervals established by the permit or recentness of the last AFIA/SG inspection. Normally AFIA will accompany the NRC during their inspections; however if they are unavailable, a member from the RICS may accompany the NRC inspector. Conversely, the NRC may choose to accompany AFIA/SG during an inspection. Typically, the NRC does not issue a report under these conditions.

6.2.3.5. Incident Inspections (Announced) may be conducted based on concern expressed by the RICS, the NRC or following a significant event (e.g., personnel health and safety violations, loss of control of RAM, radiation exposure exceeding regulatory guidelines, natural disaster or equipment failures). In these instances, AFIA/SG or AFMSA/SG3PB may conduct an off- cycle visit or inspection either unannounced or scheduled. This type of inspection is generally not rated but a report may be generated.

6.2.3.6. Consultancy Inspections (Announced), upon request of the Permittee, AFIA/SG or AFMSA/SG3PB, may conduct a scheduled visit to identify areas where assistance and improvements can be made. Furthermore, AFIA/SG or AFMSA/SG3PB may conduct a scheduled visit to advise the Permittee on how to implement new AFIs or Federal regulations. Consultancy visits, requested by the Permittee, are generally funded by the requesting organization. This type of visit shall not be rated but a report should be generated.

6.2.3.7. Permit Termination Audits (Announced): a termination audit may be scheduled and conducted during or following the termination of a broad scope permit, remediation activity or permitted activity involving significant amounts of unsealed RAM, to assure the criteria of 10 CFR 20, Subpart E are met. This type of audit shall not be rated but a report may be generated. **Note:** auditable records include the decommissioning plan if applicable, the final status survey report if applicable, NRC or Agreement State memoranda documenting acceptance of the final status survey report and approval for permit termination as applicable, the NRC Form 314, *Certificate of Disposition of Materials* (with all applicable attachments), the signed termination permit amendment from the RICS, and RICS memoranda documenting any long-term alternate or additional instructions.

6.2.3.8. Special Emphasis Inspections (Announced/Unannounced): certain topics to be researched, as requested by the RICS are conducted by AFIA/SG. These Special Emphasis Item (SEI) studies are conducted according to AFI 90-201. SEIs are normally terminated within 6-12 months, and the results are briefed at the IG-SG Annual Review.

6.2.4. Severity Levels of Violations.

6.2.4.1. AF-issued violations will be consistent with the categories defined in the NRC Enforcement Manual and NRC Enforcement Policy: Minor, Non-Cited, and Severity Levels I through IV.

6.2.4.2. Comparisons of severity between disparate activities (e.g., nuclear medicine vs. gauges) will not be made. Severity is assigned on a case-by-case basis. Repeat violations, willfulness and false representations will influence the severity of a violation.

6.2.5. Inspection Violations and Actions.

6.2.5.1. Minor and Non-cited. Permittees have no follow-up actions resulting from minor and non-cited violations.

6.2.5.2. Severity Level IV. Permittees shall have five (5) duty days from the receipt of the report to respond in writing to the RICS, AFIA/SG and their respective MAJCOM. **(T-1)**. The RICS reserves the right to accelerate the time of the response. The RICS may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

6.2.5.3. Severity Level I-III. Permittees shall have five (5) duty days from the receipt of the report to respond in writing to the RICS, AFIA/SG and their respective MAJCOM. **(T-1)**. Permittees shall respond by email or in writing, within 24 hours upon verbal notification to the RICS; the Permittee shall provide immediate actions taken to mitigate the violation. **(T-1)**. The RICS will coordinate/seek concurrence with the NRC on mitigation actions and timelines. The RICS reserves the right to accelerate the time of the response. The RICS may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

6.2.5.4. The Permittee must initiate corrective actions in advance of any report. **(T-1)**.

6.2.6. Ratings. AFIA/SG will issue either a rating of "Compliant" or "Not Fully Compliant" in the final report.

6.2.7. Corrective Actions. Permittees shall respond to the violations according to the provisions of this chapter. **(T-1)**. Response to violations shall contain, at a minimum, the following:

6.2.7.1. Reference to the violation(s). **(T-1)**.

6.2.7.2. Complete description of how the violations(s) were or will be corrected to include: **(T-1)**.

6.2.7.2.1. The root cause for the violation(s) or, if contested, the basis for disputing it,

6.2.7.2.2. Corrective actions that have been taken and the results achieved,

6.2.7.2.3. Corrective actions that will be taken to avoid future violations, and

- 6.2.7.2.4. Timeline, with milestones, for corrective actions and date when full compliance was or will be achieved.
- 6.2.7.3. Designation of an office for monitoring corrective measures, to include a point of contact. (T-1).
- 6.2.8. Disposition.
- 6.2.8.1. Closure: upon receipt of a response to the violation from the Permittee, the RICS shall consider the merit of the corrective actions and, if satisfied, close out the deficiency in Inspector General Management Evaluation System.
- 6.2.8.2. Non-Closure: if the RICS determines corrective actions are not acceptable to close the violations, enforcement actions may be taken according to [paragraph 6.3](#). Enforcement actions shall be submitted to the Permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

6.3. Enforcement Actions.

6.3.1. Introduction and Basic Enforcement Actions. This section describes the enforcement actions available to the RICS in the administration of the USAF MML, and specifies the conditions under which each may be used. The basic enforcement actions are Notices of Violation and Orders of various types. Enforcement action is usually taken whenever a violation of permit requirements or regulations of more than a minor concern is identified. The nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved. For the vast majority of violations, a Notice of Violation (NOV) is the usual action. NOV's are sent to the Permittee, with copies to AFIA/SG (when not issued by AFIA), and MAJCOM Bioenvironmental Engineer. They specify the nature of the violation(s) (e.g., permit condition, this manual, or Federal regulations) and require a response for corrective action by a set date. The RICS shall, in the administration of the MML, keep the assigned NRC Program Manager informed regarding enforcement actions.

6.3.2. Escalated Enforcement Actions, RIC and RIC Secretariat Directives. Whenever inspections identify conditions or violations that result in significant regulatory concern, escalated enforcement action through an issued order is considered. As authorized by this manual and AFPD 40-2, a directive order is a mandatory written order to modify, suspend, or to cease and desist from a given practice or activity; or to take additional action as deemed appropriate. Orders may be issued in lieu of, or in addition to NOV's, generally for Severity Level I, II, or III violations or other conditions that cause significant regulatory concern. Orders are mandatory and made effective immediately. Orders may be executed without prior notice or consultation with the Permittee whenever it is determined that the public health, interest, or safety requires, or when the order is responding to a violation involving willful negligence. For other cases, the Permittee shall be afforded an opportunity to demonstrate why the order should not be issued. Orders may be issued as follows:

- 6.3.2.1. Permit Modification Orders are issued by the RICS when a change in Permittee equipment, procedures, personnel, or management controls is necessary.
- 6.3.2.2. Suspension Orders are issued by the RICS and signed by AFMSA/SG3P and may apply to all or part of the permitted activity. Ordinarily, a permitted activity is not suspended (nor is a suspension prolonged) for failure to comply with requirements where

such failure is not of willful intent and adequate corrective action has been taken. Suspension Orders may be used to remove a threat to the public health and safety, or the environment:

6.3.2.2.1. When the Permittee has not responded adequately to other enforcement action;

6.3.2.2.2. When the Permittee interferes with the conduct of an inspection or investigation; or

6.3.2.2.3. For any reason not mentioned above for which permit activity suspension is authorized by the RICS in coordination with AFMSA/SG3P.

6.3.2.3. Revocation/Termination Orders are issued by RICS and signed by AFMSA/SG3P:

6.3.2.3.1. When a Permittee is unable or unwilling to comply with permit requirements;

6.3.2.3.2. When a Permittee refuses to correct a violation;

6.3.2.3.3. When a Permittee does not respond to a NOV when a response was required by the RICS; or

6.3.2.3.4. For any other reason for which revocation is authorized by the RICS in coordination with AF/SG3P (i.e., any condition that would warrant refusal of a permit on an original application).

6.3.2.4. Cease and Desist Orders are issued by the RICS and may be used to stop an unauthorized activity that continues after being notified by the RICS that the activity has been deemed unauthorized.

6.3.2.5. Confirmatory Action Letters are issued by the RICS confirming a Permittee's agreement to take certain actions to eliminate significant concerns about health and safety, safeguards, or the environment.

6.3.2.6. Demands for Information are mandated requests of information from permittees or other persons for the purpose of enabling the RICS to determine whether an order or other enforcement action should be issued. Demands for Information may be issued by either the RIC or the RICS.

6.3.2.7. Other Orders: in addition to the Orders describe above, Orders may be issued to permittees that include but are not limited to:

6.3.2.7.1. Divert facility financial resources to purchase, replace, or excess and dispose of certain equipment;

6.3.2.7.2. Increase the frequency of facility safety committee meetings;

6.3.2.7.3. Implement meetings between the facility executive management and the RSO on a frequent and routine basis;

6.3.2.7.4. Perform additional or supplemental training to Permittee staff;

6.3.2.7.5. Increase frequencies of facility internal audits or other internal surveillance; and/or

6.3.2.7.6. Appear before the RIC to present corrective actions and associated implementation timelines.

6.3.3. Factors Impacting Escalated Enforcement Actions.

6.3.3.1. Initial Escalated Action: When the RICS is made aware of conditions or violations where escalated enforcement action may be necessary, deliberations are held to determine the severity level of the findings and factors that may affect that level. Serious findings will often include deliberations with the NRC. If it is established that a willful Severity Level III violation or problem has occurred, and the Permittee has not had any previous escalated actions (regardless of the activity area) during the past two (2) years or two (2) inspection cycles, whichever is longer, the RICS will consider whether the Permittee's corrective action for the noted violation or problem is reasonably prompt and comprehensive. The starting point of this period shall be considered the date when the Permittee was put on notice to take corrective action.

6.3.3.2. Credit for Actions Related to Identification: If a Severity Level I or II violation or a willful Severity Level III violation has occurred, or if, during the past two (2) years or two (2) inspection cycles, whichever is longer, and the Permittee has been issued at least one other escalated action, the escalated enforcement actions shall consider the factor of identification in addition to corrective action. The decision on identification requires considering all the circumstances of identification including:

6.3.3.2.1. Whether the problem requiring corrective action was AFIA/SG-identified, RICS-identified, Permittee-identified, or discovered through an event;

6.3.3.2.2. Whether prior opportunities existed to identify the problem requiring corrective action and if so, the age and number of those opportunities;

6.3.3.2.3. Whether the problem was discovered as the result of a Permittee's self-monitoring effort, such as conducting an audit, a test, a surveillance, a design review, or troubleshooting;

6.3.3.2.4. For a problem discovered through an event, the ease of discovery, and the degree of Permittee initiative in identifying the root cause of the problem and any associated violations;

6.3.3.2.5. For AFIA/SG identified issues, whether the Permittee would have likely identified the issue in the same time-period if the Agency had not been involved;

6.3.3.2.6. For AFIA/SG identified issues, whether the Permittee should have identified the issue (and taken action) earlier; and

6.3.3.2.7. For cases in which AFIA/SG identifies the overall problem requiring corrective action (i.e., a programmatic issue), the degree of Permittee initiative or lack of initiative in identifying the problem or problems requiring corrective action.

6.3.3.3. Prompt and Comprehensive Corrective Action is required for all MML violations. **(T-0).** In most cases, the RICS does not propose escalated enforcement actions where the Permittee promptly identifies and comprehensively corrects violations. However, a Severity Level III violation or higher will almost always result in escalated enforcement actions if a Permittee does not take prompt and comprehensive corrective actions to address the violation. The following factors are considered:

6.3.3.3.1. Timeliness and Extent of Corrective Action.

6.3.3.3.1.1. Consideration will be given to the:

6.3.3.3.1.1.1. Timeliness of the corrective action (including the promptness in developing the schedule for long term corrective action);

6.3.3.3.1.1.2. Adequacy of the Permittee's root cause analysis for the violation; and

6.3.3.3.1.1.3. Comprehensive nature of the corrective action (i.e., whether the action is focused narrowly to the specific violation or broadly to the general area of concern).

6.3.3.3.1.2. Whether or not the Permittee has taken immediate actions necessary, upon discovery of a violation, that will restore safety, and return the permit to full compliance; and

6.3.3.3.1.3. Whether or not the Permittee has developed and implemented lasting actions that will not only prevent recurrence of the violation, but will be comprehensive enough, given the significance and complexity of the violation, to prevent occurrence of violations with similar root causes.

6.3.3.3.2. Adequacy of Corrective Actions: AFIA/SG will assist the RICS to determine adequacy of correction actions to violations. The RICS shall determine the adequacy of corrective actions to violations that are self-identified, result from an event, or are MML identified. The judgment of the adequacy of corrective actions may also occur at the time of an enforcement conference (i.e., by outlining substantive additional areas where corrective action is needed).

6.3.3.3.3. Corrective Action Process: the following shall be used for developing and implementing corrective actions. Corrective action shall be comprehensive enough to not only prevent recurrence of the violation at issue, but also to prevent occurrence of similar violations. These items should help in focusing broad corrective actions to the general area of concern rather than to specific violations. The actions that need to be taken are dependent on the facts and circumstances of the particular case. The corrective action process should involve the following steps:

6.3.3.3.3.1. Conduct a complete and thorough review of the circumstances that led to the violation;

6.3.3.3.3.2. Identify the root cause of the violation; and

6.3.3.3.3.3. Take prompt and comprehensive corrective action that will address the immediate concerns and prevent recurrence of the violation.

6.3.4. Enforcement Conferences.

6.3.4.1. When a Permittee has been issued an NOV and fails to conform to effective corrective actions, the RICS may decide to initiate an enforcement conference with the Permittee to define the actions necessary to begin effective corrective measures to the violation. The RICS will issue official correspondence to the Permittee informing them of the enforcement conference. The enforcement conference can be implemented by any necessary means to affect a productive dialogue between the Permittee and the RICS.

6.3.4.2. The purpose of the conference is for the RICS to gather the necessary facts and information from the Permittee in order to make an informed decision about the violation. Objectives of the conference will include determining:

6.3.4.2.1. The root cause and analysis of the violation(s);

6.3.4.2.2. That a Permittee's response is deemed timely and appropriate; and

6.3.4.2.3. That corrective actions to prevent similar recurrence of the violation(s) have been taken.

6.3.4.3. Results of the enforcement conference will be formalized by the RICS with correspondence to the Permittee describing the actions the Permittee must perform to resolve the violation(s).

6.3.5. **Appealing Enforcement Actions.** The Permittee or any other person adversely affected by an NOV or Order may appeal said action. The Permittee may submit an appeal via official correspondence to the RICS for the violations and findings. The Permittee must provide ample regulatory justification in the correspondence to warrant an appeal of the violations. **(T-1).** The RICS shall review the appeal by the Permittee and decide actions to be taken based on the merit of the request, corrective actions taken by the Permittee, and the severity levels of the violations. The RICS may at its option, initiate a review of Permittee program operations concerning the enforcement action, grant the appeal to mitigate the severity level of the violation and/or enforcement actions, or deny the appeal.

6.3.6. **NRC Related Administrative Actions.** In addition to the enforcement actions by the RICS, the NRC also uses administrative actions, such as Notices of Violation, Notice of Deviation, Notices of Nonconformance, Confirmatory Action Letters, Letters of Reprimand, and Demands for Information to supplement its enforcement program. The NRC may issue orders and impose civil penalties for violations of NRC regulations and MML conditions. Note that any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued and any response must be posted by the Permittee in accordance with 10 CFR §19.11.

6.3.6.1. **Civil Penalty:** only the NRC may impose civil penalties. A civil penalty is a monetary penalty that may be imposed by the NRC for violation of certain specified licensing provisions of the Atomic Energy Act or supplementary NRC rules or orders, any requirement for which a MML permit or NRC license may be revoked, reporting requirements under Section 206 of the Energy Reorganization Act, and NRC Regulations and MML program conditions. If the application of the normal guidance in this policy does not result in an appropriate sanction, as warranted, then the NRC may apply its full enforcement authority where the action is warranted. NRC action may include civil penalties, issuing appropriate orders, and assessing civil penalties for continuing violations on a per day basis, up to the NRC limit per violation.

6.3.6.2. **Mitigation of Enforcement Actions:** the NRC may exercise discretion and refrain from enforcement action, if the outcome of the normal process described in this policy does not result in a sanction consistent with an appropriate regulatory message. In addition, even if the NRC exercises this discretion, when the Permittee failed to make a required report to AFIA/SG or the RICS, a separate enforcement action may be issued for the Permittee's failure to make a required report.

6.3.7. Enforcement Actions Involving Individuals. An enforcement action against an individual will be taken only when the RICS is satisfied that the individual fully understood, or should have understood, his or her responsibility; knew, or should have known, the required actions; and knowingly, or with careless disregard (i.e., with more than mere negligence) failed to take required actions which have actual or potential safety significance. Transgressions of individuals at the level of Severity Level III or IV violations will be handled by citing the facility Permittee with a requirement that specific actions concerning the individual be taken.

6.3.7.1. Management Failures: action against an individual will not be taken if it demonstrates that the improper action by the individual was caused by management failures. The following are examples of situations to illustrate this concept but do not represent all potential cases:

6.3.7.1.1. Inadvertent individual mistakes resulting from inadequate training or guidance provided by the Permittee;

6.3.7.1.2. Inadvertently missing an insignificant procedural requirement when the action is routine, fairly uncomplicated, and there is no unusual circumstance indicating that the procedures should be referred to and followed step-by-step;

6.3.7.1.3. Compliance with an express direction of management that resulted in a violation unless the individual did not express his or her concern or objection to the direction; or

6.3.7.1.4. Individual error directly resulting from following the technical advice of an expert (e.g., advisor or subcontractor) unless the advice was clearly unreasonable and the permitted individual should have recognized it as such.

6.3.8. Willful Violations and Actions of Individuals. This paragraph applies if the actions described in these examples are taken by Permittee authorized individuals or otherwise taken deliberately by an individual working under permitted activities. The RICS will promptly report all suspected deliberate violations of NRC requirements to NRC Region IV office. RIC enforcement action may consist of requiring actions be taken directly toward the individual. The RIC may address immediate and ongoing safety issues as well as initiate an investigation into suspected deliberate violations unless directed otherwise by the NRC. In addition, the Permittee or other personnel may report willful violations to AF investigative or legal agencies. Listed below are examples of situations that could result in enforcement actions against individuals.

6.3.8.1. The situations include, but are not limited to, violations that involve:

6.3.8.1.1. Willfully causing a Permittee to be in violation of permit requirements;

6.3.8.1.2. Willfully taking action that would have caused a Permittee to be in violation of requirements but the consequence(s) of the action did not occur because it was detected and corrective action was taken;

6.3.8.1.3. Recognizing a violation of procedural requirements and willfully not taking corrective action.

6.3.8.1.4. Willfully defeating alarms and/or interlocks that have safety significance;

6.3.8.1.5. Dereliction of duty;

6.3.8.1.6. Falsifying records required by MML requirements or by the Permittee;

6.3.8.1.7. Willfully providing, or causing a Permittee to provide, an Inspection Agency inspector with inaccurate or incomplete information on a matter material to the radiation protection program; or

6.3.8.1.8. Willfully withholding safety significant information rather than making such information known and available to appropriate supervisory or technical personnel in the Permittee's organization.

6.3.8.2. Factors in Deciding Enforcement Actions: In its determination of whether to issue requirements that actions be taken concerning an individual, the following factors will be considered:

6.3.8.2.1. The level of the individual within the organization;

6.3.8.2.2. The individual's training and experience as well as knowledge of the potential consequences of the misconduct;

6.3.8.2.3. The safety consequences of the misconduct;

6.3.8.2.4. The degree of supervision of the individual, i.e., how closely is the individual monitored or audited and the likelihood of detection;

6.3.8.2.5. The employer's response, (e.g., disciplinary action taken);

6.3.8.2.6. The attitude of the offender (e.g., admission of misconduct, acceptance of responsibility);

6.3.8.2.7. The degree of management responsibility or culpability; and

6.3.8.2.8. Who identified the misconduct.

6.3.8.3. Types of Enforcement Actions: any proposed enforcement action against individuals must be issued by the RICS. The particular sanction to be used should be determined on a case-by-case basis. Notices of Violation and Orders are examples of enforcement actions that may be appropriate involving individuals. Orders involving individuals might include provisions that would:

6.3.8.3.1. Prohibit involvement in MML permitted activities for a specified period of time (normally the period of suspension would not exceed five (5) years) or indefinitely until certain conditions are satisfied (e.g., completing specified training or meeting certain qualifications); or

6.3.8.3.2. Require retraining, additional oversight or independent verification of activities performed by the person, if the person is to be involved in permitted activities.

6.3.8.4. Disciplinary Enforcement: adverse personnel actions and other disciplinary actions are the responsibility of the organization to which the individual to be disciplined belongs. Discretion may be exercised by either escalating or mitigating enforcement action to ensure that the proposed enforcement action reflects the Inspection Agency and the RICS concerns regarding the violation(s) at issue and that it conveys the appropriate message to the Permittee.

6.3.9. Violations of Reporting Requirements or Submitting False Information.

6.3.9.1. Reporting: permittees are expected to provide complete, accurate, and timely information and reports when required. **(T-1)**. A Permittee will not usually be cited for a failure to report a condition or event unless the Permittee was actually aware of the condition or event that it failed to report. A Permittee will, on the other hand, usually be cited for a failure to report a condition or event if the Permittee knew of the information to be reported, but did not recognize the reporting requirements.

6.3.9.2. Inaccurate and Incomplete Information: a violation of MML requirements involving submittal of incomplete and/or inaccurate information can result in the full range of enforcement actions.

6.3.9.2.1. Identification of false information. The labeling of a communication failure as a material false statement will be made on a case-by-case basis and will be reserved for egregious violations. Violations involving inaccurate or incomplete information or the failure to provide significant information identified by a Permittee will be categorized based on:

- 6.3.9.2.1.1. The degree of knowledge that the communicator should have had, regarding the matter, in view of his or her position, training, and experience;
- 6.3.9.2.1.2. The opportunity and time available prior to the communication to assure the accuracy or completeness of the information;
- 6.3.9.2.1.3. The degree of intent or negligence, if any, involved;
- 6.3.9.2.1.4. The formality of the communication;
- 6.3.9.2.1.5. The importance of the information which was wrong or not provided;
- 6.3.9.2.1.6. The rationale of the explanation for not providing complete and accurate information;
- 6.3.9.2.1.7. Efforts taken to correct information that is later identified as false or incomplete; and/or
- 6.3.9.2.1.8. Failures to correct false or incomplete information.

Chapter 7

MANAGING ALLEGATIONS

7.1. Introduction. All Permittee employees are required to be aware of NRC Form 3, *Notice to Employees*, which must be posted for all employees to view, and their right to make an allegation (10 CFR Part 19). **(T-0).** Allegations will be investigated and reported in accordance with NRC Management Directive 8.8, *Management of Allegations*. It is the responsibility of employees to immediately identify conditions contrary to this and to work within an organization's resources to obtain corrective action. **(T-1).** If such cannot be accomplished due to a threatening environment, limitation of resources or unwillingness of management, an allegation can be made at any level, anytime, among the following hierarchy:

- 7.1.1. Supervisors;
- 7.1.2. PRSOs or IRSOs;
- 7.1.3. Commanders;
- 7.1.4. Inspector General;
- 7.1.5. USAF Radioisotope Committee Secretariat;
- 7.1.6. USAF Radioisotope Committee;
- 7.1.7. US Nuclear Regulatory Commission: although it is customary, and encouraged, for employees to use their supervisory chain to seek expedient resolution of problems at the lowest level, this is not mandatory. Anonymous allegations can be made; however, resolution may be impacted by quality of information received.

7.2. Reporting Allegations. Allegations containing the following information can be processed most effectively.

- 7.2.1. Name, occupation and contact information of person making the allegation;
- 7.2.2. Date and description of issue;
- 7.2.3. Individuals involved and witnesses;
- 7.2.4. Outcome and Consequences;
- 7.2.5. Details of previous reports, including who received them;
- 7.2.6. Any corrective actions to date; and
- 7.2.7. Expectations.

7.3. RICS Handling of Allegations.

7.3.1. In the event the RICS receives an allegation, the following measures will be taken:

- 7.3.1.1. If the allegation is against the RICS, it will be immediately referred to the appropriate NRC Regional Office for disposition and AF/SG3/5 shall be informed.
- 7.3.1.2. If the allegation is not against the RICS, the appropriate NRC Regional Office will be notified. A brief written report, provided by the individual making the allegation will be forwarded to AFMSA/SG3PB for review and determination of the main merits of

investigating the allegation. The allegation will then be presented to the Chief, RICS, and, if deemed necessary, an Allegation Review Board (ARB) will be formed to conduct an investigation. (MML)

7.3.2. The ARB will be comprised of the following representatives:

7.3.2.1. Chair, RIC (will serve as the Chair, ARB);

7.3.2.2. Chief, RICS (RIC member);

7.3.2.3. Member of the affected MAJCOM, Senior Health Physicist or Bioenvironmental Engineer;

7.3.2.4. AFIA/SGI (RIC member);

7.3.2.5. Officer within the affected unit; and

7.3.2.6. AFLOA/JAC (RIC member).

7.3.3. The ARB should document the allegation investigation in an inspection report. It is important that the inspection reports protect the identity of the individual(s) making the allegation(s) and not provide any information in the report that may reveal his/her identity. The inspection report should not contain any detailed information of the inspection that would correlate the inspection to an allegation. The inspection report findings should be included in the allegation file for the respective allegation case for final resolution by the RIC.

7.3.4. Once determined adequate by the RIC/JA, the ARB will provide a final allegation investigation report and recommended course(s) of action to the RIC. An allegation involving a health or safety issue will have a higher priority.

7.3.5. All suspected deliberate violations of NRC requirements involving immediate and ongoing safety issues will be reported to the appropriate NRC Regional Office for disposition by the RIC. Concurrently, an immediate investigation may be conducted by the supervisors; PRSOs or IRSOs; Commanders; Inspector General; RICS; RIC; or ARB, as appropriate.

7.4. Protecting the Identity of Individuals Making Allegations. The name of the individual(s) making the allegation(s) and other identifying information which could potentially identify the individual(s) will not be used in discussions of allegations or documents released to the Permittee or members of the public related to the allegation. The identity of the individual(s) will be protected, and the Inspection Agency will not advise a Permittee that an inspection is based on an allegation. Exceptions to this policy include:

7.4.1. The circumstance where the individual has no objection to the release of his/her identity and is documented in the allegation file;

7.4.2. Communications within and between the RIC, RIC Secretariat, the NRC, the AF Inspection Agency, and other parties that require knowledge of this identity to properly manage the allegation; or

7.4.3. The circumstance where such protection would impact worker health and safety.

7.5. Maintenance of Allegation Files. The RICS maintains the official file of all information pertaining to each allegation. It is important that the RICS and RIC members assure there is no unauthorized reproduction of information related to an allegation. Copies of allegation files may

be made following approval by the AFMSA/SG3P case representative and maintained appropriately. All copies made of an allegation file must be returned to the file or destroyed.

7.6. Allegation Information in Inspection Reports. The investigation into the allegation should be documented in an inspection report. It is important that the inspection reports protect the identity of the individual(s) making the allegation(s) and not provide any information in the report that may reveal his/her identity. The inspection report should not contain any detailed information of the inspection that would correlate the inspection to an allegation. The inspection report findings should be included in the allegation file for the respective allegation case for final resolution by the RIC.

7.7. Resolution of Allegations. The RIC will review all allegations received. Once all of the necessary information related to the allegation has been collected, the RIC will review the allegation file to determine if any further actions are required before a final decision is made. If any findings of an allegation investigation are in violation of the regulations, then the severity level of the violation will determine the response by the RIC to the command as described in the Enforcement Policy, [paragraph 6.3](#).

7.8. Allegation Close-Out Report. Once the final disposition of an allegation is approved by the RIC, a formal response and close-out report of the RIC findings will be forwarded to the individual(s) who made the allegation by the RICS. If the individual(s) does/do not agree with the findings of the RIC, then the individual(s) may appeal the findings of the RIC with any additional information necessary to support the appeal of the final allegation findings.

7.9. Allegation to the NRC. Nothing in this manual prevents an individual from making an allegation directly to the NRC, particularly as it pertains to allegations levied against the RICS. The AF IG can provide assistance.

Chapter 8

RADIOISOTOPE COMMITTEE PROTOCOL

8.1. USAF Radioisotope Committee (RIC) Charter. The RIC is responsible for providing regulatory oversight for the use of radioactive material (RAM) by USAF organizations except weapons related materials falling under AEA Section 91. The RIC approves controls for acquiring, receiving, storing, distributing, using, transferring, and disposing of RAM to ensure compliance with the USAF Master Materials License, NRC policy and guidance, other applicable regulatory requirements, and DoD and USAF directives, instructions, and manuals.

8.2. RIC Committee Members, Organization, and Responsibilities.

8.2.1. **Chapter 2** of this manual specifies the membership and general roles for each member of the RIC. At the request of the RICS or the RIC Chairman, additional advisors can be invited.

8.2.2. RIC Secretariat (RICS): Organization, scheduling and planning of the RIC meeting, and generation of meeting minutes.

8.2.3. RIC Chair: Open RIC meetings, and preside over their proceedings. Assist in maintaining the discussion focus of the agenda items, and resolve disagreements. Adjourn meeting once completed.

8.2.4. RIC Members: Ensure either they or their alternates attend scheduled RIC meetings and are prepared to address agenda items.

8.3. Business Practices.

8.3.1. The RIC Chair and the RICS will establish the detailed procedures for RIC meetings. In all cases, the meetings will meet the requirements of the USAF MML and other USAF requirements for meetings of this type.

8.3.1.1. In accordance with MML requirements, a formal RIC meeting shall occur as represented to and agreed upon by the AF and NRC. RIC meetings are scheduled by the RICS.

8.3.1.2. Ad hoc meetings can be called by the RIC Chair on an as needed basis. These meetings are called to address emergent issues that require timely action by the RIC.

8.3.1.3. Rapid staffing of an action can be approved by the RIC Chair to address emergent issues for which an ad hoc meeting cannot be convened. For a rapid staffing the RICS will prepare a staffing package that addresses the issue and provides the voting members of the RIC the ability to vote without meeting. All rapid staffing actions will be discussed at the next RIC meeting.

8.3.1.4. A quorum for a meeting is established by having at least one-half of the voting members present.

8.3.2. Meetings will be conducted in accordance with all applicable policies and procedures. The RIC Chair and the RICS will establish the specific procedures for the conduct of routine meetings, ad hoc meetings and rapid-staffing actions.

8.3.3. Motions and Voting.

8.3.3.1. Only members and guests recognized by the Chair may speak.

8.3.3.2. Only voting members may vote on an issue.

8.3.3.3. Generally, before any item can be discussed, there should be a motion made and seconded. Once a motion has been seconded, discussion will follow. After discussion, one of four things can happen:

8.3.3.3.1. There can be a vote on the motion. In the event of a tie, the Chair casts the deciding vote; or

8.3.3.3.2. The motion can be amended (second required). Then there can be discussion on the amendment. The amendment can be voted. If the amendment passes, the motion automatically passes. If the amendment fails, the motion still stands and can be discussed until voted; or

8.3.3.3.3. The motion can be tabled (second required). There can be no discussion on a motion to table--a vote must be taken immediately. If the vote is to table, no further discussion can take place on the motion; or

8.3.3.3.4. There may be no action on the motion--therefore it becomes old business at a future meeting.

8.3.3.4. Motions must be clear and concise. A motion to "improve permitting practices" would be vague and discussions could meander. However, a motion to "implement template permit processes for a new chemical agent monitor" is specific and could be effectively discussed and acted on.

8.4. Disagreement Resolution. The RIC Chair is responsible for maintaining order. On procedural questions, the Chair's ruling will be final.

8.5. Record Keeping.

8.5.1. The RICS will ensure that appropriate files for each meeting are maintained in accordance with all applicable requirements. This will include as a minimum, the agenda, meeting minutes, copy of all pertinent reference materials, background information, memoranda, standing reports, and presentations applicable to each meeting.

8.5.2. RICS will maintain correspondence, permit actions, Notices of Violations (NOVs) or enforcement actions, and other applicable materials during the quarter to ensure a complete agenda.

8.5.3. Records of RIC meetings, to include agendas, presentations, and meeting minutes, shall be kept for the duration of existence of the MML.

DOROTHY A. HOGG
Lieutenant General, USAF, NC
Surgeon General

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

AFPD 40-2, *Radioactive Materials (Non-Nuclear Weapons)*, 12 Jan 15

5 U.S.C. Section §552a, *Privacy Act of 1974*

10 CFR §20.2106, *Records of Individual Monitoring Results*

29 CFR §1910.1096(b), *Exposure of Individuals to Radiation in Restricted Areas*

29 CFR §1910.1096(n), *Records*

29 CFR §1910.1096(o), *Disclosure to former employee of individual employee's record*

SORN F044 AF SG O, *United States Air Force Master Radiation Exposure Registry*

AFMAN 33-363, *Management of Records*, 1 Mar 08, incorporating change, 9 Jun 16, certified current, 21 Jul 16, with guidance memo, 30 May 18

AFI 33-360, *Publications and Forms Management*, 1 Dec 15, with guidance memo, 15 Feb 18

10 CFR, Chapter I, *Nuclear Regulatory Commission*

42 U.S.C. §§ 2011-2021, 2022-2286i, and 2296a-2297h-13, *Atomic Energy Act of 1954*

PL 109-58, *Energy Policy Act of 2005*

PL 93-438, *Energy Reorganization Act of 1974*

42 U.S.C. §2011, *Congressional Declaration of Policy*

42 U.S.C. §2121, *Authority of Commission*

AFPD 91-1, *Nuclear Weapons and Systems Surety*, 30 Nov 16

AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(B) Radioactive Material Safety Program*, 12 Feb 15, certified current, 9 Sep 15

AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*, 13 Jan 15

40 CFR, Chapter I, *Environmental Protection Agency*

40 CFR Part 266, Subpart N, *Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation, and Disposal*

40 CFR Part 261, *Identification and Listing of Hazardous Waste*

40 CFR Part 61, Subpart I, *National Emission Standards for Radionuclide Emissions from Federal Facilities other than Nuclear Regulatory Commission Licensees Not Covered by Subpart H*

10 CFR §20.1101, *Radiation Protection Programs*

AFPD 32-70, *Environmental Quality*, 20 Jul 94

AFI 32-7040, *Air Quality Compliance and Resource Management*, 4 Nov 14, incorporating changes, 14 Oct 16, certified current, 14 Oct 16

42 U.S.C., Chapter 103, *Comprehensive Environmental Response, Compensation, and Liability*

AFJMAN 23-209, *Storage and Handling of Hazardous Materials*, 13 Jan 99

42 U.S.C., Chapter 116, *Emergency Planning and Community Right-to-Know*

40 CFR Part 355, *Emergency Planning and Notification*

EO 13834, *Efficient Federal Operations*, 22 May 18

49 CFR, Chapter I, *Pipeline and Hazardous Materials Safety Administration, Department of Transportation*

DTR 4500.9-R-Part II, Chapter 204, *Hazardous Material*, 11 Apr 16

DTR 4500.9-R-Part II, Chapter 208, *Packaging and Handling*, 17 Apr 17

AFMAN 24-210, *Package of Hazardous Material*, 21 Apr 15

AFJI 23-504, *Radioactive Commodities in the DoD Supply System*, 10 Mar 04

AFJMAN 23-209, *Storage and Handling of Hazardous Materials*, 13 Jan 99

AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*, 13 Jul 17

International Air Transport Association (IATA), *Dangerous Goods Regulation*, 59th Ed., 2018

International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*, 2012

10 CFR Part 31, *General Domestic Licenses for Byproduct Material*

10 CFR Part 30, *Rules for General Applicability to Domestic Licensing of Byproduct Material*

HAF MD 1-18, *Assistant Secretary of the Air Force (Installations, Environment and Energy)*, 10 Jul 14

10 CFR §30.35, *Financial Assurance and Recordkeeping for Decommissioning*

10 CFR §30.36, *Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas*

10 CFR §40.36, *Financial Assurance and Recordkeeping for Decommissioning*

10 CFR §70.25, *Financial Assurance and Recordkeeping for Decommissioning*

HAF MD 1-48, *The Air Force Surgeon General*, 7 May 15

10 CFR Part 20, *Standards for Protection Against Radiation*

10 CFR Part 35, *Medical Use of Byproduct Material*

10 CFR §74.13, *Material Status Reports*

10 CFR §74.15, *Nuclear Material Transaction Reports*

10 CFR §20.2207, *Reports of Transactions Involving Nationally Tracked Sources*

10 CFR Part 40, *Domestic Licensing of Source Material*

10 CFR Part 70, *Domestic Licensing of Special Nuclear Material*

10 CFR Part 21, *Reporting of Defects and Noncompliance*

10 CFR Part 37 Appendix A, *Category 1 and Category 2 Radioactive Materials*

10 CFR Part 20 Appendix E, *Nationally Tracked Source Thresholds*

10 CFR Part 30.72 Schedule C, *Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release*,

10 CFR Part 71, *Packaging and Transportation of Radioactive Material*

49 CFR Chapter I, Subchapter C, *Hazardous Materials Regulations*

AFI 65-601 Vol 1, *Budget Guidance and Procedures*, 24 Oct 18

AFI 48-148, *Ionizing Radiation Protection*, 20 Nov 14

AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 15 Aug 14, incorporating change, 27 Apr 16, certified current 10 Jul 17

AFMAN 23-122, *Materiel Management Procedures*, 14 Dec 16, with guidance memo, 5 Sep 18

NUREG 1556 Volume 9, Revision 2, *Program-Specific Guidance About Medical Use Licenses*, Jan 08

NUREG 1556 Volume 11, Revision 1, *Program-Specific Guidance about Licenses of Broad Scope*, Feb 17

10 CFR §19.12, *Instruction to Workers*

NUREG-1556, *Consolidated Guidance about Materials Licenses*, Volumes 1-21, most current

10 CFR Part 37, *Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material*

10 CFR §30.15, *Certain Items Containing Byproduct Material*

10 CFR §30.19, *Self-luminous Products Containing Tritium, Krypton-85, or Promethium-147*

10 CFR §30.20, *Gas and Aerosol Detectors Containing Byproduct Material*

10 CFR §30.18, *Exempt Quantities*

10 CFR §30.34, *Terms and Conditions of Licenses*

10 CFR §31.12, *General License for Certain Items and Self-luminous Products Containing Radium-226*

32 CFR Part 989, *Environmental Impact Construction*

10 CFR Part 51, *Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions*

10 CFR Part 71, Subpart H, *Quality Assurance*

10 CFR Part 71, Subpart G, *Operating Controls and Procedures*

NRC Regulatory Guide 7.10, *Establishing Quality Assurance Programs for Packaging Used in Transport of Radioactive Material*, Jun 15

NUREG 1556 Vol 20, *Guidance About Administrative Licensing Procedures*, Aug 18

10 CFR §150.20, *Recognition of Agreement State Licenses*

10 CFR Part 835, *Occupational Radiation Protection*

10 CFR §19.11, *Posting of Notices to Workers*

10 CFR §30.13, *Carriers*

10 CFR §40.12, *Carriers*

10 CFR §70.12, *Carriers*

10 CFR §21.6, *Posting Requirements*

NRC Regulatory Issue Summary 2005-31, *Control of Security-related Sensitive Unclassified Nonsafeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material*, Revision 1, 26 Dec 17

10 CFR Part 110, *Export and Import of Nuclear Equipment and Material*

49 CFR Part 173, *Shippers—General Requirements for Shipments and Packaging*

10 CFR §40.64, *Reports*

DTR 4500.9-R-Part II, *Cargo Movement*, May 14

10 CFR §31.5, *Certain Detecting, Measuring, Gauging, or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere*

49 CFR §172.202, *Description of Hazardous Material on Shipping Papers*

International Atomic Energy Agency (IAEA), *Regulations for the Safe Transport of Radioactive Material*. 2016

NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual*, including Supplement 1, Jan 09

NUREG 1757, *Consolidated Decommissioning Guidance, Volume II, Characterization, Survey, and Determination of Radiological Criteria*, Feb 12

10 CFR §20.1402, *Radiological Criteria for Unrestricted Use*

AFI 32-7020, *The Environmental Restoration Program*, 7 Nov 14, incorporating changes, 18 Apr 16, certified current, 18 Apr 16

10 CFR §20.1901, *Caution Signs*

10 CFR §20.1902, *Posting Requirements*

10 CFR §20.1903, *Exemptions to Posting Requirements*

AFI 32-7042, *Waste Management*, 7 Nov 14, incorporating changes, 8 Feb 17, certified current, 8 Feb 17

10 CFR §20.2001, *General Requirements*

10 CFR § 35.92, *Decay-in-storage*

10 CFR §20.2003, *Disposal by Release Into Sanitary Sewerage*
10 CFR §20.2005, *Disposal of Specific Wastes*
10 CFR §20.2006, *Transfer Disposal and Manifests*
10 CFR §20.2002, *Method for Obtaining Approval of Proposed Disposal Procedures*
10 CFR §20.2108, *Records of Waste Disposal*
10 CFR Part 61, *Licensing Requirement for Land Disposal of Radioactive Waste*
10 CFR Part 60, *Disposal of High-level Radioactive Waste in Geologic Repositories*
10 CFR Part 63, *Disposal of High-level Radioactive Waste in a Geologic Repository at Yucca Mountain, Nevada*
AFI 91-204, *Safety Investigations and Reports*, 27 Apr 18
AFMAN 10-206, *Operational Reporting*, 18 Jun 18
40 CFR Part 302, *Designation, Reportable Quantities, and Notification*
AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, 19 Apr 16, with guidance memo 26 Sep 18
5 U.S.C., Chapter 5, *Administrative Procedure*
10 CFR Part 2, *Agency Rules of Practice and Procedure*
AFI 90-201, *The Air Force Inspection System*, 20 Nov 18
NRC Management Directive No. 8.8, *Management of Allegations*, 29 Jan 16

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*
AF Form 1297, *Temporary Issue Receipt*
DOE/NRC Form 741, *Nuclear Material Transaction Report*
NRC Form 3, *Notice to Employees*
NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters*
NRC Form 313, *Application for Materials License*
NRC Form 314, *Certificate of Disposition of Materials*

Abbreviations and Acronyms

AEA—Atomic Energy Act of 1954, as amended
AF—Air Force

AFCEC—Air Force Civil Engineering Center
AFI—Air Force Instruction
AFIA—Air Force Inspection Agency
AFJI—Air Force Joint Instruction
AFJM—Air Force Joint Manual
AFMAN—Air Force Manual
AFMSA—Air Force Medical Support Agency
AFPD—Air Force Policy Directive
AFRRAD—Air Force Radioactive Recycling and Disposal Office
AFSEC—Air Force Safety Center
ALARA—As Low As is Reasonably Achievable
CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act
CFR—Code of Federal Regulations
DoD—Department of Defense
DOE—Department of Energy
DTR—Defense Transportation Regulation
EPA—Environmental Protection Agency
EPCRA—Emergency Planning and Community-Right-To-Know-Act
ESOHC—Environmental, Safety, and Occupational Health Council
GLD—Generally Licensed Device
HAZMAT—Hazardous Material
IAEA—International Atomic Energy Agency
IATA—International Air Transport Association
IRSO—Installation Radiation Safety Officer
LLMW—Low Level Mixed Waste
LLRW—Low Level Radioactive Waste
MAJCOM—Major Command
MML—Master Materials License
MW—Mixed Waste
NARM—Naturally Occurring or Accelerator Produced RAM
NOV—Notice of Violation
NRC—Nuclear Regulatory Commission

NSN—National Stock Number

PRSC—Permit Radiation Safety Committee

PRSO—Permit Radiation Safety Officer

RAM—Radioactive Material(s)

RAMMIS—Radioactive Materials Management Information System

RCRA—Resource Conservation and Recovery Act

RIC—Radioisotope Committee

RICS—Radioisotope Committee Secretariat

RPM—Remedial Project Manager

RSC—Radiation Safety Committee

RSO—Radiation Safety Officer

RWS—Radioactive Waste Sites

SNM—Special Nuclear Material

SSDR—Sealed Source and Device Registry

USAF—United States Air Force

USAFSAM—United States Air Force School of Aerospace Medicine

U.S.C.—United States Code

Terms

91(a) Material—RAM exempted from NRC licensing controls under Section 91(a) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DOE.

91(b) Material—RAM exempted from NRC licensing controls under Section 91(b) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DoD. These include materials in nuclear weapons.

Accelerator Produced Radioactive Material—RAM produced as the result of operating a particle accelerator.

Agreement State—Any state, territory, or possession of the US that, by agreement with the NRC, has assumed regulatory authority over byproduct, source, and certain small quantities of SNM.

Allegation—Declaration, statement or assertion of impropriety or inadequacy associated with NRC or USAF regulated activities, the validity of which has not been established.

Alternate Permit Radiation Safety Officer—A person, named on the USAF RAM Permit, who is qualified by education or training, to act as PRSO when the primary PRSO is absent. Unless otherwise requested by the Permittee, the alternate PRSO becomes the primary PRSO when the named primary PRSO leaves the organization.

Annual—Recurring, done, or performed every year (i.e., every 12 months) at intervals not to exceed 1 year; or, once per year, at about the same time each year, plus or minus one calendar month.

As Low As is Reasonably Achievable (ALARA)—In accordance with the US Nuclear Regulatory Commission (NRC), ALARA means making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

Authorized User—For non-medical permits, authorized users are approved by the RSC or in the absence of an RSC, the RICS based on a review of qualifications, or by the Permittee if authorized by a permit condition. For medical permits, in accordance with 10 CFR §35.2: a physician, dentist or podiatrist who meets the requirements in 10 CFR §35.59, and §35.190(a), §35.290(a), §35.390(a), §35.392(a), §35.394(a), §35.490(a), §35.590(a) or §35.690(a), and is an authorized user as specified on a USAF RAM permit.

Byproduct Material—RAM (except source or SNM) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using source or SNM. The definition of byproduct material has changed with the Energy Policy Act of 2005 to include some forms of naturally occurring or accelerator produced RAM (reference AFD 40-2).

Exclusive Federal Jurisdiction—Property under the exclusive control or ownership of the Federal government that has been ceded legislative power by the state or has had such power reserved from grants to the states.

General License—The NRC and/or an Agreement State issues a general license for individuals to acquire and use specific devices that have been manufactured and distributed according to the specifications approved by the NRC or the Agreement State. Individuals do not need to apply for this license; it is inherent in the distribution of the device. However, they must comply with the requirements for labeling, instructions for use, and proper storage or disposition of the device in accordance with 10 CFR §31.5.

Incident—For purpose of this manual, any event involving radioactive material that is not defined as a mishap, and that may result in adverse public reaction. This includes weather-induced events, attacks against sensitive information, or spontaneous/unforeseen failures of equipment or material.

Items—Instruments, manufactured articles or major end items constructed of or having RAM as a component part, often assigned a NSN, normally procured, stored and distributed through USAF and Department of Defense logistical supply systems. Items include but are not limited to such devices as chemical agent detectors/monitors, radiation detector sets, lensatic/military compasses, dials, and gauges. Items are not considered to include any loose RAM, radioactive contamination on other materials or in soil, or any material exhumed from a radioactive burial site.

License—Written authorization from the NRC or an Agreement State to acquire, receive, use, store or transfer byproduct, source, or SNM. Licenses will be either (1) General License published in NRC or Agreement State Regulations, that is effective without any need to send an application to, or that is effective to any applicant on registration with, the NRC or an Agreement State or (2)

Specific License issued by the NRC or Agreement State to a named applicant who has filed an application authorizing acquisition, ownership, receipt, storage, use, transfer, and disposal of chemical or physical forms of radioisotopes specified in the license. This license has an expiration date renewable on application to the issuing authority. The license may be limited in scope (authorizing only certain specific radioisotopes for limited users) or broad (authorizing the use of a wide variety of radioisotopes without regard to form, quantity, or use).

Licensee—Individual who holds a an NRC or Agreement State radioactive material license.

Medical Event—Any event that meets the criteria of 10 CFR §35.3045(a).

Mishap—For purposes of this manual, a mishap is defined in AFI 91-202, *The U.S. Air Force Mishap Prevention Program*. An event involving human acts of omission or commission involving a nuclear reactor, radioisotope power system, or radioactive material resulting in any of the following: (A) A loss of control of radioactive material that presents a hazard to life, health, or property. This includes loss of control that may result in any person in exceeding federal limits. (B) Any unexpected event involving radioactive materials or radiation exposure that is serious enough to warrant the interest or action of officials or agencies outside the Air Force. This includes any event: having domestic or international implications, those that may cause inquiries by the public or press, and those requiring immediate notification to the Nuclear Regulatory Commission under federal regulations.

NUREG—Technical reports on various topics related to the regulation of nuclear energy published by Nuclear Regulatory Commission; NUREG is not an acronym but a term used by the Nuclear Regulatory Commission as a label for a series of technical reports.

Naturally Occurring and Accelerator Produced Radioactive Material (NARM)—Discrete sources of radium-226 or material made radioactive by use of a particle accelerator that is produced for use by commercial, medical or research activities. Examples include fluoride-18, cobalt-57, and iodine-123. Also included is any discrete source of naturally occurring RAM (other than source material) that the NRC determines could pose a threat to public health or security.

Nuclear Reactor—A facility using fissile materials in a self-supporting chain reaction (nuclear fission) to produce heat or radiation for both practical applications and research and development.

Nuclear Regulatory Commission (NRC)—An agency established by Title II of the Energy Reorganization Act of 1974 (Public Law 93-438) to regulate byproduct, source, and SNM as provided for by the Atomic Energy Act of 1954, as amended. Within the NRC, final authority rests with the five member Commission acting as a body.

Particle Accelerator—A device that accelerates electrically charged particles to high velocities, for the purpose of inducing high energy reactions or producing high energy radiation.

Permit—Shortened term for written authorization from an appropriate authority for Air Force organizations to receive, possess, distribute, use, transfer, or dispose of radioactive materials. See also Air Force Radioactive Material Permit.

Permittee—The Commander, civilian equivalent or designated representative of a USAF organization that is responsible for and controls the radiation safety program for RAM covered by this manual and has the authority to provide the resources necessary to achieve regulatory compliance.

Radiation Safety Committee—A group of individuals appointed by a Permittee to oversee all uses of permitted byproduct material. The Radiation Safety Committee (RSC) must include an authorized user of each type of use permitted, the RSO(s), a representative of the nursing service (for medical RSCs only), and a representative of management who is neither an authorized user nor an RSO. RSCs may include other members the licensee considers appropriate.

Radiation Safety Officer—An individual with specific education, training, and professional experience in radiation protection practice appointed by a Permittee or the USAF Radioisotope Committee to manage radiation safety programs. The term "Radiation Safety Officer" is a functional title and does not denote a commissioned status or specialty code. The RSO must have the education, training, and professional experience needed for the job. Take care when addressing RSO qualifications and duties to distinguish between IRSO and PRSOs. Individuals appointed as the IRSO might not always have the specific technical experience and training needed to qualify as the PRSO. See **Chapter 3** for RSO training requirements in the USAF.

Radiation Worker—An individual engaged in activities licensed or regulated by the NRC (or RIC) and controlled by a licensee (or Permittee) or regulated entity, but does not include the licensee (or Permittee) or regulated entity, in accordance with 10 CFR Part 19.

Radioactive Item—A single unit or article constructed of or having RAM, greater than exempt quantities, as a component part.

Radioactive Material (RAM)—Material with nuclei, because of their unstable nature, that decay by emission of ionizing radiation. The radiation emitted may be alpha particles, beta particles, gamma rays, X-rays, or neutrons.

Radioactive Material Management Information System (RAMMIS)—An online database used to maintain NRC compliance by allowing users to manage and inventory all permitted and generally licensed USAF radioactive materials.

Radioactive Waste—Waste that contains RAM. Radioactive waste can be generally classed in one of four categories:

Radioactive Waste: High-Level Radioactive Waste—Spent nuclear fuel from nuclear power plants and waste material from reprocessing spent nuclear fuel.

Radioactive Waste: Low-level Radioactive Waste (LLRW)—LLRW is any radioactive waste that is not High-Level Radioactive Waste, uranium tailings, or transuranic waste.

Radioactive Waste: Mixed Waste—A waste that contains both hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) and source, special nuclear or byproduct material subject to the Atomic Energy Act of 1954, as amended.

Radioactive Waste: Transuranic Waste—Waste material that contains transuranic elements with half-lives greater than 20 years and concentrations greater than 100 nanoCuries per gram. A transuranic is an element with an atomic number greater than 92 (e.g., plutonium, americium, and curium).

Radionuclide—An unstable isotope of an element that decays or disintegrates spontaneously, thereby emitting radiation.

Restricted Area—For this manual, a restricted area is an area having access limited to protect individuals against undue risk from exposure to radiation and RAM. Restricted area does not

include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

Requiring Activities—For this manual, organization charged with meeting a mission and delivering requirements; responsible for obtaining funding or developing the program objective memorandum and may also be responsible for written requirement or statement of need for services; provides trained and qualified Contracting Officer's Representative to monitor contractor performance.

Source Material—Uranium or thorium or any combination thereof in any physical or chemical form; or ores that have, by weight, one-twentieth of 1 percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include SNM.

Specifically Licensed Material—RAM controlled by a specific NRC or Agreement State license; or a USAF, US Navy, or Veterans Affairs permit.

Special Nuclear Material (SNM)—Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235; any other material that the NRC determines to be SNM and any material artificially enriched by the foregoing. SNM does not include source material.

Unrestricted Area—For this manual, an unrestricted area is any area access to which is not controlled by the Permittee. Generally, it is an area that is accessible to a person who is not trained to work with RAM or accessible to a member of the public.

USAF Master Materials License (MML)—The single Nuclear Regulatory Commission license issued to the United States Air Force and managed by the Air Force Radioisotope Committee.

USAF Radioactive Material Permit—Written authorization from the Air Force Radioisotope Committee for Air Force organizations to receive, possess, distribute, use, transfer, or dispose of radioactive materials.

USAF Radioisotope Committee (RIC)—A committee established to satisfy the requirements of with the Air Force master materials license to coordinate the administrative and regulatory aspects of licensing, possessing, distributing, using, transferring, transporting and disposing of all radioactive material in the Air Force except that transferred from Department of Energy to the Department of Defense in nuclear weapon systems, certain radioactive components of weapons systems and nuclear reactor systems, components and fuel controlled under Section 91 of the Atomic Energy Act of 1954, as amended.

USAF Radioisotope Committee Secretariat (RICS)—The office providing day-to-day management of USAF permitting activities under the purview of the USAF MML. The Secretariat generally comprises members from the Radiation Health function of AFMSA/SG3PB.

United States School of Aerospace Medicine (USAFSAM)—An organization, belonging to the 711th Human Performance Wing, whose mission's include, relative to this AFMAN: The Air Force Dosimetry Center, a radioanalytical lab, and health physics consultants.

User—For this manual, a user is (1) An organization authorized by a USAF RAM Permit to have and use RAM, or (2) A person specifically named on a USAF RAM Permit as authorized to handle or to supervise handling RAM listed on the permit, or (3) A person named in a permit condition by a radiation safety committee with local approval authority to handle or supervise the handling of RAM listed on the permit. Also see Authorized User.

Written Directive—An authorized user's record written order for the administration of byproduct material or radiation from byproduct material to a specific patient or human research subject, as specified in 10 §CFR 35.40. An order must be in writing for a specific patient, dated and signed by an authorized user before the administration of iodine-131 greater than 30 microCuries, any therapeutic dosage of unsealed byproduct material or any therapeutic dose of radiation from byproduct material in accordance with 10 CFR §35.40.