BY ORDER OF THE
SECRETARY OF THE AIR FORCE

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Supplement

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Medical Command

MANAGING RADIOACTIVE MATERIALS IN THE US AIR FORCE

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 40-2, *Radioactive Materials (Non-Nuclear Weapons)*. It applies to Department of Defense (DOD) personnel, Air Force Reserve Command (AFRC) Units, Air National guard (ANG), Department of Energy (DOE) personnel, DOE prime contractors, and other civilian contractors who bring radioactive materials (RAM) onto or use RAM on any United States Air Force (USAF) owned or leased property. It sets forth how USAF personnel or units manage (to include acquire, receive, use, store, transfer, transport, distribute, and dispose of) all RAM not expressly excluded from the purview of the AFI. This instruction also prescribes how non-USAF activities get approval to use RAM on USAF installations. RAM covered by this instruction includes, without limitation, byproduct, source, special nuclear material (SNM), naturally occurring, and accelerator produced RAM. This AFI does not apply to nuclear reactor programs, nuclear weapon systems and fuel and other material controlled under Sections 91(a) or 91(b) of the Atomic Energy Act (AEA) unless such are not covered by AFI 91-101, *Air Force Nuclear Weapons Surety Program,* or any other instruction managed by the Air Force Safety Center (AFSC). **Exception:** Intrinsic radiation (INRAD) safety and the management of mixed waste are addressed. Persons subject to the Uniform Code of Military Justice (UCMJ) who violate requirements and prohibitions or deviate from standards contained in this instruction are subject to punishment under UCMJ, Article 92, for failure to obey an order or regulation, or for dereliction of duty. 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 instruction. This instruction complies with the Privacy Act of 1974. The authority to collect and keep the information required by this instruction is in DOD Directive 5400.11, *DOD Privacy Program*, and AFI 33-332, *USAF Privacy Act Program*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Send comments and suggested improvements on AF IMT 847, *Recommendation for Change of Publication*, through appropriate channels, to Air Force Medical Support Agency/Bioenvironmental Engineering Division/Radiation Health (AFMSA/SG3PB), 1500 Wilson Blvd, Suite 1600, Arlington, VA 22209.

(MOODYAFB) AFI40-201, 16 March 2011 is supplemented as follows: This supplement applies to Moody Air Force Base. It applies to all tenant organizations, Air National Guard, Air Force Reserve Components, and contractor operations on Moody AFB. The objective of the radioactive material management program is to ensure items containing radioactive material are used, maintained, stored, transported IAW federal, state, and Air Force regulations. This instruction applies to all military and civilian personnel who use radioactive material or may be present in areas where radioactive material may be used. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, *Recommendation of Change Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System Records Disposition Schedule located at

https://www.my.af.mil/afrims/afrims/afrims/rims.cfm. Contact supporting records managers as required.

SUMMARY OF CHANGES

This revision has been extensively rewritten and requires review in its entirety.

Chapter 1

INTRODUCTION

1.1. Purpose. This instruction provides uniform policy, instruction, and guidance for the management and control of RAM in the USAF world-wide. It sets forth how USAF personnel or units manage (to include acquire, receive, use, store, transfer, transport, distribute, and dispose of) all RAM not expressly excluded from the purview of this AFI. This instruction also prescribes how non-USAF entities get approval to use RAM on USAF installations.

1.2. Applicability. RAM covered by this instruction includes, without limitation, byproduct, source, SNM, and naturally occurring or accelerator produced RAM. This instruction does not apply to nuclear reactor programs, nuclear weapon systems and fuel, and other material controlled under Section 91(a) or 91(b) of the AEA unless such are not covered by AFI 91-101 or any other instruction managed by AFSC. The handling of waste from operations involving nuclear munitions maintenance is discussed in context with AFI 91-108.

1.3. Objectives. The objectives of this instruction are to:

1.3.1. Ensure the proper acquisition, possession, storage, use, transfer, disposal and transportation of RAM covered by this instruction.

1.3.2. Establish a unified approach to the management and safeguarding of RAM used by the USAF or contractors working on USAF installations world-wide.

1.3.3. Implement a unified policy for authorizing the acquisition, possession, storage, use, transfer, disposal and transportation of RAM world-wide.

1.4. Regulatory Authority for Radioactive Materials. This instruction implements NRC requirements across the USAF. It also sets requirements for USAF-owned RAM not under the jurisdiction of the NRC. The NRC is the primary regulatory authority for the USAF use of RAM in the United States. In locations outside of the United States and its territories, USAF units will comply with this instruction where practicable, or host nation requirements, if required by an applicable international agreement.

1.5. Nuclear Regulatory Commission (NRC) Regulatory Authority. The AEA of 1954, as amended (including the Energy Policy Act of 2005), and the Energy Reorganization Act of 1974 (Public Law 93-438) grant the NRC the authority to regulate byproduct, Naturally Occurring or Accelerator Produced Radioactive Material (NARM), accelerator, source, and SNM, 42 U.S.C. § 2011 et seq. This authority does not extend to material described in Sections 91(a) and 91(b) of the 1954 Act, 42 U.S.C. §§ 2121(a) – (b).

1.5.1. NRC authority extends across the United States, its possessions and territories, and Puerto Rico. For regulations issued and enforced by the NRC, reference Title 10, *Code of Federal Regulations (CFR),* Chapter 1, Parts 1 through 199.

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

1.6. USAF Regulatory Authority.

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

1.6.2. Authority for USAF production, receipt, storage, distribution, use, transfer, and disposal by USAF organizations of NARM is also covered under this instruction, IAW Energy Policy Act of 2005 that expanded the NRC jurisdiction to include NARM.

1.6.3. The USAF also maintains authority over the use of RAM by non-USAF organizations on USAF installations where exclusive Federal jurisdiction exists. **Exception:** Tenant organizations operating under a non-USAF permit are not subject to the conditions of this instruction. These tenant organizations should inform the IRSO of materials authorized on their license/permit. Tenant organizations are not subject to AFIA/SG inspections.

1.6.4. Authority for USAF receipt, use, storage, distribution and disposal of 91(a) and 91(b) material is covered under AFI 91-108 and AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems.*

1.6.5. USAF activities outside the United States follow applicable laws and regulations of the host country concerning import, export, control, and disposal of RAM according to the Status of Forces Agreement (SOFA), or similar document, with the host country. Radiation safety standards and requirements followed by USAF organizations will be at least as stringent as those within the United States. USAF installations located within the host nation will honor contractor host nation licenses for using RAM in like manner as a NRC or Agreement State License.

1.7. 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. These regulations are found in Title 40, Code of Federal Regulations. For purposes of RCRA take note of the following definitions: Low-Level Mixed Waste (LLMW) is waste that contains both low-level radioactive waste and RCRA hazardous waste. Low-Level Radioactive Waste (LLW) 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. As such, MW is subject to dual regulation under EPA and NRC rules. However, 40 CFR Part 266, subpart N (Part(s) 266.210 – 266.310) provides for conditional exemption from RCRA coverage for LLMW storage, treatment, transportation and disposal so long as the LLMW meets the subpart N requirements.

1.7.1. 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, Code of Federal Regulations, Chapter 1, *Environmental Protection Agency*, Part 261, *Identification and Listing of Hazardous Waste* (40 CFR part 261).

1.7.2. Waste that contains both AEA-regulated RAM and hazardous waste (as defined by 40 CFR 261.3) is termed mixed waste (See 1.7 and 40 CFR Part 266.210).

1.7.2.1. The NRC regulates the byproduct, source, and SNM constituents.

1.7.2.2. EPA regulates the hazardous chemical and non-NRC regulated constituents.

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

1.7.2.4. Generators of mixed waste must meet both NRC and EPA regulations unless exempted by those regulations. Refer to 40 CFR 261 and 266, subpart N, AFPD 32-70, *Environmental Quality*; AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*; AFI 32-7020, *The Environmental Restoration Program*, AFI 32-7042, *Waste Management;* AFPD 48-1, *Aerospace Medicine*, and AFPD 32-70, *Environmental Quality,* for guidance on compliance with EPA hazardous materials regulations.

1.8. Clean Air Act (CAA). The CAA gives the EPA authority over non-NRC regulated radionuclide emissions from Federal facilities. For applicable regulations, reference 40 CFR 61, Subpart I, *National Emission Standards for Radionuclide Emissions From Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities Not Covered by Subpart H*. NRC regulates air emissions from NRC licensed Federal facilities IAW 10 CFR 20.1101(d). Organizations that generate emissions must comply with both NRC and EPA rules. For guidance on complying with EPA air emission standards, refer to AFPD 32-70, *Environmental Quality*, and AFI 32-7040, *Air Quality Compliance*.

1.9. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Section 103 of CERCLA requires notification of the National Response Center immediately at 1-800-424-8802 in the event a release of greater than the "reportable quantity" of a hazardous substance is released to the environment. A list of applicable reportable quantities for radionuclides can be found in 40 CFR 302.4, Appendix B-*Radionuclides*.

1.10. Emergency Planning and Community-Right-To-Know-Act (EPCRA). EPCRA requires that whenever a "reportable quantity" of a CERCLA hazardous substance leaves installation boundaries, the State Emergency Response Commission and Local Emergency Planning Commission must be notified immediately (reference 40 CFR 355, *Emergency Planning and Notification*). Note that EPCRA is not, by its terms, applicable to Federal facilities. The USAF complies with EPCRA, as directed by Executive Order 13148 (April 26, 2000).

1.11. Transportation of Hazardous Material. Department of Transportation (DOT) regulations, 49 CFR, *Transportation,* specify requirements for marking, labeling, shipping documents, containers, and other requirements when shipping or transporting hazardous materials, including RAM. 49 CFR 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials, Communications, Emergency Response, and Training Requirements*, and 49 CFR 173, *Shippers – General Requirements for Shipments and Packaging*, and DTR DOD 4500.9-R-Part II, Chapter 204.

1.12. Radioactive Material Categories. This instruction stipulates that all RAM (with the exception of 91(a) and 91(b) material) will be regulated using the policies and procedures in this instruction and in the MML as identified in paragraph 1.6.

1.12.1. Specifically Licensed RAM. Many activities with RAM require a specific license with the NRC whereby detailed information is provided on the activity, RAM involved, organization, responsible radiation safety officer, etc. In a similar manner, the USAF issues specific permits for these activities accomplished with NRC-licensed materials within the USAF. Most USAF permits are template types, those issued for devices or applications that pose little radiological risk and employ standardized permit conditions. USAF non-template permits are for activities or applications that pose much higher radiological risks.

1.12.2. Generally Licensed Devices (GLDs) containing RAM. The Code of Federal Regulations provides a general license for the use of RAM contained in certain products. This allows persons to receive and use devices containing these radioactive materials if the device has been manufactured and distributed IAW a specific license issued by the NRC or by an Agreement State. Most GLDs possessed by USAF units/organizations do not require permits, though the USAF does permit some GLDs, as described in this instruction. If a permit is not required by the USAF for a particular device, this instruction lists other requirements for the possessing unit/organization, the most important of which is the need to enter GLDs in the Radioactive Materials Management Information System (RAMMIS).

1.12.3. 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 instruction, and 10 CFR 30.70, Schedule A, or 30.71, Schedule B.

1.13. USAF Acceptance, Transfer, Storage, or Use of Radioactive Materials. USAF units shall accept, transfer, store or use RAM IAW this instruction.

1.14. Non-USAF Organizations Using RAM on USAF Installations. Non-USAF organizations on USAF, or USAF-led joint, installations shall accept, transfer, store, or use RAM IAW this instruction. **Exception:** Tenant organizations operating under a non-USAF permit are not subject to the conditions of this instruction. These tenant organizations should inform the IRSO of materials authorized on their license/permit. Tenant organizations are not subject to AFIA/SG inspections.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Deputy Assistant Secretary of the Air Force, Environment, Safety and Occupational Health (SAF/IEE).

2.1.1. Appoints a voting and alternate representative to the RIC.

2.1.2. Provides guidance, direction, and oversight on all matters pertaining to the formulation, review, and execution of Environment, Safety, and Occupational Health (ESOH) policies, plans, programs and budgets.

2.1.3. Delegates the authority to AFMSA/SG3 to take all actions needed to ensure USAF operations comply with Federal, DOD, and USAF requirements, as well as those of the USAF MML.

2.1.4. Coordinates financial assurance (provided by SAF/IE) to the RICS, for submittal to the NRC on all applicable USAF decommissioning activities, IAW 10 CFR 30.35, 40.36 and 70.25.

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

2.2.1. Appoints a voting representative and alternate to the RIC.

2.2.2. Ensures acquisition procedures exist governing the life-cycle management of RAM brought into the USAF, and that those procedures follow Federal regulations and applicable AFIs.

2.2.3. Coordinates approval with the RICS, prior to acquisition, new systems and upgrades that contain RAM prior to fielding in the USAF.

2.3. Office of the Surgeon General (AF/SG).

2.3.1. On behalf of the USAF, manages all aspects of control of RAM within the purview of this AFI and the MML.

2.3.2. Maintains and sustains the RIC, under the Assistant Surgeon General, Health Care Operations (AF/SG3), to provide oversight of USAF use of RAM are under the purview of this instruction.

2.3.3. Directs AF/SG3 to appoint a Chair to the RIC from the AF Medical Support Agency, Aerospace Medicine Division (AFMSA/SG3P) and establish the RICS. The RICS is a dedicated operational body, within the Radiation Health function, required by the MML.

2.3.4. Selects a health physics consultant who shall act as the Chief of the RICS. Reference AFI 44-104, *Military and Civilian Consultant Program and Medical Enlisted Career Field Manager Program*.

2.3.5. Selects a medical physicist consultant who shall be a voting member of the RIC. Reference AFI 44-104, *Military and Civilian Consultant Program and Medical Enlisted Career Field Manager Program*.

2.3.6. In coordination with the AFIA, provides for inspections prescribed by this instruction to evaluate compliance with permits issued by the RICS.

2.3.7. Provides authority to and directs the RIC to take enforcement action against a Permittee who fails to comply with this instruction, a permit, or Federal regulations as executed by the RICS.

2.3.8. Provides required resources to the RICS to protect the interests of the MML and remain in compliance with applicable NRC and other Federal regulations, DOD instructions, and applicable and relevant guidance documents.

2.4. Deputy Chief of Staff for Logistics, Installations, and Mission Support (USAF/A4/7).

2.4.1. Appoints a representative (primary and alternate) to the RIC who can represent: logistics, maintenance, CE, environmental issues, and security forces.

2.4.2. Coordinates on logistics, maintenance, CE, and security policies dealing with RAM covered by this instruction.

2.4.3. Provides guidance to AFMC on the management of items containing RAM.

2.4.4. Maintains an AF Radioactive Waste Site Registry.

2.5. Assistant Surgeon General, Health Care Operations (AF/SG3).

2.5.1. Establishes the RICS as a duty of the Radiation Health function of AFMSA to work on behalf of the RIC in providing functional oversight of non-nuclear weapons related RAM use in the USAF.

2.5.2. Chairs, or delegates a chair to the RIC. Authorizes the Chief of the RICS to act in the Chairperson's absence.

2.5.3. Appoints a voting and alternate representative from Radiation Health (AFMSA/SG3PB) to the RIC.

2.5.4. Appoints a voting and alternate representative from Bioenvironmental Engineering (AFMSA/SG3PB) to the RIC.

2.5.5. Through the Bioenvironmental Engineering (BE) Associate Corps Chief, appoints, in writing, the following primary and alternate voting members to the RIC:

2.5.5.1. Representative(s) in operational health physics.

2.5.5.2. Representative(s) in medical physics.

2.6. The AF Inspection Agency, Medical Operations Directorate (AFIA/SG).

2.6.1. Appoints a voting representative to the RIC. Resources and prioritizes inspections according to this instruction and in coordination with the RICS and NRC.

2.6.2. Maintains a staff qualified health physicist (or Bioenvironmental Engineer equivalent) with appropriate NRC training and security clearance, to conduct USAF RAM permit and 91 (b) RAM permit inspections.

2.6.3. Budgets for and conducts inspections to assess Permittee compliance with the terms and conditions of their permit authorizing the use and possession of RAM (reference **Attachment 13**).

2.6.4. Distributes inspection schedules and reports concerning permit compliance according to AFI 90-201, to the RICS or AFSC/SEW, as appropriate.

2.6.5. Sends inspection reports pertaining to NRC regulated materials to the Permittee, the RICS and NRC, Region IV.

2.6.6. Provides the RIC with quarterly and annual summaries of the status of permit compliance inspections, results of completed inspections and trends in violations.

2.6.7. Consults with the RICS on permit inspection policies and methods. Notifies them immediately when a NRC Severity Level I-III, or higher, violation is suspected or issued.

2.6.8. Conducts an inspection within 60 days of the termination of a broad scope permit.

2.6.9. Conducts Special Emphasis Item inspections upon request of the RICS.

2.7. HQ AF, Chief of Safety (HQ AF/SE). Directs HQ AFSC/SEW to:

2.7.1. Appoint a voting member to the RIC to advise on RAM control issues relative to 91(a) and 91(b) material, for consistent control of RAM within the USAF.

2.7.2. Regulate 91 (b) materials (acquired from DOE for DOD use in weapons, power production, and other military-unique applications IAW 41 U.S.C. Ch. 23 Div. A).

2.7.3. Issue permits to CONUS installations for the possession, use, characterization, and remediation of residual 91(b) material from past nuclear weapon accidents, incidents and maintenance activities, as well as dismantled/decommissioned reactor 91(b) material still under USAF possession. RAM associated with stockpiled nuclear weapons and current maintenance residuals are not subjected to permitting under the MML.

2.7.4. Provide oversight of USAF uses of 91(b) material.

2.7.5. Coordinate with the RICS on all radiation safety policy and RAM controls issues related to nuclear capable units and 91(b) material.

2.7.6. Coordinate with the AF Nuclear Weapons Center (AFNWC) on occupational safety and health issues related to INRAD exposures and on 91(b) material waste generated from nuclear weapon operations.

2.7.7. Coordinate with AFIA/SGI on inspection criteria compliance requirements for 91(b) permits.

2.8. Director of Civil Law, AF Legal Operations Agency (AFLOA/JAC).

2.8.1. Appoints a voting representative and alternate to the RIC.

2.8.2. Coordinates on legal issues about RAM, including internal and external enforcement matters, and acts as counsel to the RIC.

2.9. USAF School of Aerospace Medicine (USAFSAM/OEH).

2.9.1. Appoints a voting representative and alternate to the RIC.

2.9.2. Supports MAJCOMs and installations by maintaining and providing National Voluntary Laboratory Accreditation Program accredited radiation dosimetry services through the AF Dosimetry Center, comprehensive radio-analytical capabilities, and health physics consultative services.

2.9.3. Provides quarterly and annual summaries of occupational radiation exposure from RAM to the RIC.

2.9.4. Provides technical and on-site health physics support to the RIC and AFSC/SEW as required to prevent, investigate and mitigate human exposure or environmental contamination from RAM.

2.10. AF Medical Support Agency, Aerospace Medicine Division, Bioenvironmental Engineering (AFMSA/SG3PB).

2.10.1. Resources and sustains a Radiation Health function that establishes and implements AF Medical Service policy on all forms of radiation. The RICS is a component of the Radiation Health function.

2.10.2. For clarity, the Chief, RICS, the Chief, Radiation Health, and the Health Physics Consultant to the AF/SG may be the same individual. Reference **paragraph 2.3.4**.

2.11. USAF Radioisotope Committee (RIC).

2.11.1. Provides direction of USAF uses of RAM and grants authority to the RICS to conduct business consistent with applicable and relevant Federal, DOD and USAF policy, regulations, and guidance IAW with the MML.

2.11.2. Serves, through the RICS, as the USAF single point of contact for the MML. Similarly, serves as the single point of contact with Agreement States.

2.11.3. Recommends policies to USAF/SG3 for keeping exposure from approved uses of RAM "As Low As Reasonably Achievable" (ALARA) but always below regulatory limits as promulgated in 10 CFR 20.

2.11.4. Serves, through the RICS, as the USAF single point of contact with the Conference of Radiation Control Program Directors (CRCPD) and CRCPD licensing states for issues pertinent to the MML.

2.11.5. Directs and adjudicates enforcement actions when such actions are required to protect persons or property or maintain compliance with permit and MML conditions.

2.11.6. Identifies new or special inspection needs and reports them to AFIA/SG.

2.11.7. Reviews unique actions and permit requests referred by the RICS.

2.11.8. Reviews and advises on special situations involving RAM as requested by the RICS, Air Staff, or MAJCOMs.

2.11.9. Identifies and invites technical experts, as necessary, to assist in ensuring regulatory compliance.

2.11.10. Meets as agreed upon with the NRC. Convenes ad hoc or emergency meetings to discuss matters requiring timely actions.

2.11.11. Publishes, and makes available, minutes of meetings to all committee members, or others, as appropriate.

2.11.12. Provides final ruling on the interpretation of this instruction, permits and Federal regulations affecting compliance with the MML.

2.11.13. Provides final resolution for any allegations concerning the safe and regulatory compliant use of RAM in the USAF (reference **Attachment 15**).

2.11.14. RIC membership and business practices are identified in **Attachment 2**.

2.12. USAF Radioisotope Committee Secretariat (RICS).

2.12.1. Serves 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 United States and overseas permitted activities that also entail attention to host nation requirements.

2.12.2. Establishes and implements policy, in coordination with the RIC, to receive, possess, use, distribute, store, transport, transfer, and dispose of or otherwise manage RAM in the USAF, consistent with applicable and relevant Federal, DOD and USAF policy, regulations, and guidance and IAW with the MML.

2.12.3. Manages and controls all RIC correspondence, maintains copies of the following documents:

2.12.3.1. The MML;

2.12.3.2. Documentation of all RIC actions;

2.12.3.3. USAF issued permits, as well as documentation regarding other actions involving the use of RAM within the USAF;

2.12.3.4. AFIA/SG reports of RAM activities.

2.12.4. Reviews, 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.

2.12.5. Determines whether individuals are qualified by training, education, and experience to use RAM, manage the radiation safety programs for use of RAM, or provide audit services for medical permits.

2.12.6. Regulates the remediation of all radioactive waste disposal sites containing RAM under the purview of this instruction.

2.12.7. Establishes terms and conditions for acquiring, receiving, storing, distributing, using, transferring, and disposing of RAM under the authority of the RIC.

2.12.8. Coordinates with AFSC/SEW on issues involving the licensing of certain RAM. **Note:** For aerospace and space power reference AFI 91-110.

2.12.9. Provides permit documentation to AFIA/SG. Notifies AFIA/SG of changes to Federal regulations that may have an effect on inspection practices.

2.12.10. Provides interpretation of this instruction, permits and Federal regulations affecting compliance with the MML and USAF policy.

2.12.11. Conducts pre-permitting visits, directs investigations of RAM incidents and mishaps to ensure compliance, and may accompany, as deemed necessary, AFIA/SG and/or the NRC during inspections.

2.12.12. Implements 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.

2.12.13. May, as deemed appropriate by the Chief, RICS, independently conduct USAF RAM permit inspections.

2.12.14. Implements enforcement actions IAW **Attachment 14** of this instruction. These may include Notices of Violation (NOV), and revocation and termination orders to protect persons, property, or to maintain MML compliance.

2.12.15. Has the authority to temporarily suspend a Permittee from any requirement of this instruction, provided the exemption does not conflict with NRC policy or Federal regulations.

2.12.16. Has the authority to impose policy or permit requirements more stringent than NRC policy or Federal regulations.

2.12.17. Submits the annual USAF inventory of NRC-regulated SNM to the Nuclear Material Management & Safeguards System before 31 March of each year, IAW 10 CFR 74.13.

2.12.18. Submits a Nuclear Material Transaction Report in computer-readable format no later than the close of business of the next working day to the Nuclear Material Management & Safeguards System of DOE IAW 10 CFR 74.15

2.12.19. Submits the National Source Tracking System transaction report IAW 10 CFR 20.2207 (b) to (f). The applicable Permittee is responsible for submitting this report to the RICS, for forwarding to the National Source Tracking System, by the close of the next business day after the transaction.

2.12.20. Submits the USAF annual inventory of Category 1 and 2 nationally tracked sources to the National Source Tracking System by 31 January of each year, IAW 10 CFR 20.2207 (g).

2.12.21. Appoints a Trustworthy and Reliability Official for matters involving radioactive sources which meet the criteria for Increased Controls.

2.13. Commander, Air Force Materiel Command (AFMC/CC).

2.13.1. Appoints one voting member to the RIC from AFMC/SG.

2.13.2. Establishes a radioactive waste program office to oversee all radioactive and mixed waste disposition activities in the USAF.

2.13.3. Programs and advocates funding for radioactive waste management.

2.13.4. Establishes a capability to oversee and coordinate recycling of USAF RAM where appropriate and cost effective.

2.13.5. Ensures all radioactive items, including waste products, are identified in a manner required by 10 CFR 29, or 40 CFR 261, et seq. Data for each item will be coordinated with and developed by the appropriate USAF activity radiation safety focal point.

2.13.6. As necessary, coordinates with the RIC on unique conditions requiring variances to the MML involving the USAF radioactive waste program and recycling of USAF RAM.

2.14. 88th Air Base Wing Commander.

2.14.1. Appoints a voting representative and alternate to the RIC from the Air Force Radioactive Recycling and Disposal (AFRRAD) Office.

2.14.2. Sustains the AFRRAD to oversee all radioactive and mixed waste disposition activities. This office shall:

2.14.2.1. Provide technical consultation for all radioactive waste activities to include decommissioning and/or remediation of radiological waste burial sites or contaminated facilities.

2.14.2.2. Program and advocate funding for radioactive waste management other than decontamination and decommissioning projects.

2.14.2.3. Coordinate radioactive waste disposal among USAF activities, the DOD Executive Agent, disposal contractors, and disposal site operators, IAW **Attachment 10**.

2.14.2.4. Provide instructions to waste generators, in consultation with AFLOA/JACE, on how to package and transport radioactive waste for disposal according to 10 CFR 71, 49 CFR 172, 173, and 178, 40 CFR part 261 et seq., (for mixed waste) and all applicable disposal site rules.

2.14.2.5. Provide quarterly summaries of radioactive waste disposal, waste specific issues for decontamination and decommissioning activities to the RIC or AFSC/SEW as appropriate. Provide the RICS summaries of 10 CFR 31 material received for disposal as requested.

2.14.2.6. Maintain all records of radioactive waste transferred for disposal IAW guidance at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**.

2.14.2.7. Implement billing procedures IAW AFI 65-601, V1, to allow funded activities to plan, program, and fund the cost of contracted services for the disposition of the RAM they generate.

2.14.2.8. Appoint a member to the DOD Disposition Advisory Committee.

2.15. Installation Commander. In addition to the responsibilities outlined in AFI 48-148:

2.15.1. Enforces compliance with this instruction and NRC General Licensing conditions.

2.15.2. Delegates authority to the IRSO to suspend installation operations involving RAM that pose a significant health risk to personnel, are in clear violation of regulations or requirements, or can negatively impact USAF operations, materiel, or real estate.

2.15.3. Provides required resources to the IRSO to maintain compliance with this instruction and applicable Federal, DOD, and AF regulations and/or directives.

2.15.4. Provides the IRSO with clearance and access to all activities governed by this instruction.

2.15.5. Prohibits the receipt or transfer of RAM (to include RAM used in classified operations) without prior coordination and/or approval by the IRSO.

2.15.6. Ensures the IRSO is notified of all activities pertaining to the generation and maintenance of radioactive waste or radioactive waste burial sites.

2.15.7. Affords to AFIA/SGI or NRC inspectors, at all reasonable times, the opportunity to inspect permitted materials as well as the records, premises, facilities, and activities

associated with their acquisition, receipt, possession, use, storage, transfer, transport, or disposal.

2.15.8. Requires the IRSO to brief the internal audit of all permits on the installation by 31 December of each year.

2.16. Installation Radiation Safety Officer (IRSO). In addition to the responsibilities outlined in AFI 48-148, the IRSO:

2.16.1. Approves the procurement, acceptance, transfer and use of all RAM on USAF installations, including those from non-USAF organizations, as outlined in this instruction (Reference **paragraph 1.14**).

2.16.2. Assists local, host or tenant organizations requesting to use RAM that require a permit under the MML. Supports installation organizations in the application process and serves as a liaison with the RICS.

2.16.3. Establishes, implements, and manages the overall installation radiation protection program and informs the installation, tenant and subordinate commanders about radiation health and safety issues and compliant measures to control radiation hazards.

2.16.3.1. Establishes the installation's program to manage generally licensed RAM and devices possessed by local, host or tenant organizations IAW **Attachment 3**.

2.16.3.2. Maintains and annually reviews the installation radiation safety instruction.

2.16.3.3. Obtains approval for changes to the installation radiation safety instruction from the installation commander or equivalent.

2.16.3.4. Coordinates changes with the affected installation units.

2.16.3.5. Ensures compliance with this AFI, and other applicable instructions, and applicable NRC General License requirements (**Attachment 3**).

2.16.4. Consults with and provides contracting officers information necessary to ensure compliance with the conditions of **paragraph 2.20**.

2.16.4.1. **(Added-MOODYAFB)** Upon request, provides training, checklists, or other resources to contracting officers on radiation safety and compliance regarding contracts that involve radioactive material.

2.16.5. Conducts, documents, and briefs, at least annually, a review of the installation radiation protection program with regards to regulatory compliance, material safety and security, and personnel exposures IAW 10 CFR 20.1102(c) to the installation commander, fire chief, base Civil Engineer and security forces squadron commander.

2.16.6. Briefs, at least annually, the Environmental, Safety and Occupational Health Council (ESOHC) or equivalent, on use(s) of RAM on the installation. Provides summaries and trends of personnel dosimetry results and surveys to demonstrate exposures are ALARA.

2.16.7. Applies applicable local, state and Federal guidance on handling, staging, storage and disposition of RAM, radioactive waste and mixed waste. Coordinates such activities with affected personnel to include but not limited to PRSOs, the fire chief, the Staff Judge Advocate, environmental coordinators, Bioenvironmental Engineering, and Civil Engineering.

2.16.8. Reviews all work orders prepared for installation-level actions involving potential use, movement, transfer or disposal of RAM.

2.16.9. Reviews surveys of locations where RAM are received, used, or stored, or where radioactive waste are stored, buried, or not otherwise covered by a permit, IAW AFI 48-148. Retain records IAW **Attachment 7** and 10 CFR 20.2110. Additionally, ensures:

2.16.9.1. Compliance with personal protective equipment; shielding; training; posting; personnel dosimetry requirements; 10 CFR 20.1301; applicable permit conditions; this instruction; local instructions; and Federal regulations.

2.16.9.2. Radiation survey meters (used for determining compliance with AFIs and Federal regulations) are calibrated according to American National Standards Institute (ANSI) guidance at intervals not to exceed one year, unless otherwise specified by the permit, AFIs or Federal regulations. Each radiation survey meter shall be capable of measuring the energies of interest and operationally checked with an appropriate check source or internal reference standard prior to use. Records of calibration shall be kept as prescribed in **Attachment 7**. A record of operational checks is not required, but is recommended.

2.16.9.3. Postings and labeling are appropriate and coordinates with CE to ensure appropriate warning signs are posted IAW AFIs and Federal regulations.

2.16.9.4. **(Added-MOODYAFB)** Annually review exposure surveys for all workplaces which own, store, maintain, and/ or operate any radioactive materials, sources, emitters, or USAF Radioactive Material Permits.

2.16.10. Collects and presents metrics in support of **paragraphs 2.16.5** and **2.16.6**. Establishes, when an RSC is not required, investigation levels to ensure exposure to personnel is maintained ALARA. Investigational levels should be developed for each occupational group and are intended to identify adverse trends, assess their causes, and implement appropriate corrective actions.

2.16.10.1. **(Added-MOODYAFB)** The investigation action levels for Moody Air Force Base are 62.5 mrem per quarter, 250 mrem per year, 5 mrem per month for pregnant occupational radiation workers for the duration of her pregnancy. The investigation action levels are the same for all radiation workers on the dosimetry program.

2.16.11. Exercises authority granted by the installation commander according to **paragraph 2.15**. Reports deviations from this instruction to the unit Commander and, as necessary, the RICS or AFSC/SEW, as appropriate.

2.16.12. Reviews and compiles RAM inventories (including GLDs and certain exempt quantities – see **paragraph 3.1.12**) received from CE (e.g., radioluminescent exit signs), unit radiation safety officer (URSO) or PRSOs and enters these into RAMMIS.

2.16.13. Maintains knowledge of radiation safety requirements and issues inherent to radioactive dials and gauges authorized for possession and use on the installation (e.g., static display aircraft or other weapon system components).

2.16.13.1. Ensures displays containing RAM open to the public 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 20 and maintained ALARA.

2.16.13.2. "Military operational use" sources are exempt from NRC licensing requirements. "Military operational use" is defined as activities such as warfare, combat, battlefield missions, training for battlefield missions, materials in 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.

2.16.13.3. Up to 100 non- "military 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. In excess of 100 non- "military operational use" Ra-226 sources in the same location will require a USAF RAM permit.

2.16.14. Approves or disapproves the use of RAM for installation level, military readiness training or exercises that may result in exposures to personnel outside of approved medical diagnostic or therapeutic practices. ALARA must be maintained.

2.16.15. Assists the Range Operating Authority in the identification and permitting of RAM in targets or target materials prior to placement on a range.

2.16.16. Coordinates with AFSC and RICS regarding the authority for the transfer to, or use of, RAM on the installation by DOE or DOE prime subcontractors.

2.16.17. Provides assistance to the Logistics Readiness Squadron to ensure compliance with the application of this instruction, local instructions and Federal regulations on the receipt, shipment and transfer of RAM.

2.16.18. Provides assistance to the Contracting Squadron in evaluating compliance with this instruction, local instructions and Federal regulations on procurement of RAM and contractor use.

2.16.19. Provides assistance to template PRSOs including administering the template RSO training, aiding in the transfer or receipt of RAM, and, when necessary, providing radiation detectors to the PRSO, or taking radiation measurements.

2.16.19.1. **(Added-MOODYAFB)** Provide certification testing, oversight, and guidance to PRSOs.

2.16.20. Audits all installation permits, IAW AF/IG or NRC guidance, and briefs the installation commander by 31 December of each year and provides a copy of the audit report to the RICS, within 30 days of the briefing.

2.16.21. **(Added-MOODYAFB)** Evaluate requests from unit commanders to bring RAM or radiation-producing devices onto the base. If the requests meet all of the federal, state, and Air Force requirements, grant approval. Continue to assist the commanders, if requested.

2.17. Range Operating Authority. In addition to the requirements of AFI 13-212, paragraph 2.5.35, range authorities shall develop and implement procedures to inventory all targets that potentially contain and/or are suspected to contain RAM. All RAM shall be removed from targets or target materials prior to placement on a range. Use of targets or target material containing RAM must be authorized by a USAF RAM Permit.

2.18. Installation Staff Judge Advocate (SJA). The SJA shall be consulted by the IRSO whenever a question of compliance with Federal, state, or local requirements governing the storage, packaging, handling, manifesting, transport, or disposal of RAM, MW, or LLMW, is the issue. The SJA shall also be consulted when the IRSO requires assistance in interpreting either DOD or Air Force policy/instructions governing RAM, MW, or LLMW. Overseas, the SJA performs 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 SOFA, as appropriate. The SJA is the legal advisor for claims or potential regulatory violations brought against the installation by Federal agencies or civilian parties.

2.19. System Program Managers, Developmental Systems Managers, and System Support Managers. Program Managers (PMs), including Product Group Managers, are responsible for development and sustainment of systems and items acquired by the USAF IAW DOD 5000-series policy, as implemented principally for non-space systems by AFI 63-101, Operations of Capabilities Based Acquisition, and for space systems and items acquired by the USAF IAW National Security Space Acquisition Policy 03-01.

2.19.1. Ensure that RAM is acquired, used, or distributed in the USAF inventory within systems only after obtaining the authority of a permit or general license, approval of the RICS, or as otherwise exempted by Federal regulation.

2.19.2. Ensure systems or items being developed or acquired by the USAF do not contain radium. Ensure items possessed by the USAF that contain radium are returned to the manufacturer, when possible, IAW with approved procedures and in consultation with the IRSO (reference **paragraph 2.16**).

2.19.3. Limit the use of RAM where feasible, consistent with USAF needs. Justification shall be documented for deciding that non-RAM or less hazardous RAM are not feasible. 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. Documentation will be maintained by the program office for the duration the material remains in the USAF inventory.

2.19.4. Ensure environment, safety, and occupational health considerations are integrated into the Systems Engineering process from the earliest stages of system design for systems that will use RAM, using the processes described in MIL-STD-882D, to identify hazards and manage the risks associated with hazards that cannot be eliminated.

2.19.5. Specify ANSI and American Society of Testing Materials standards for plated or encapsulated sources that contain RAM.

2.19.6. Ensure that RAM in a developed or modified system is identified to testers, operators, and maintainers by specifying its radionuclide, form, and activity. Include the NRC's Sealed Source and Device Registry (SSDR) numbers and a copy of the DOT Special Form certification, if applicable. **Note:** The SSDR must specify both the plated or encapsulated source of RAM, as well as the approved device(s) that can contain it. Ensure that related information concerning the material's hazards and risks is also identified to testers, operators, and maintainers to facilitate Operational Risk Management by the user.

2.19.7. Ensure testers, operators, and maintainers of developed or modified systems that contain radioactive devices/items receive easily understood written instructions on how to properly acquire, receive, use, store, transfer, transport, distribute and/or dispose of the material. Instructions shall also include reporting requirements for incidents involving these materials.

2.19.8. Ensure any shipment or transfer of RAM for which the PM is responsible is coordinated with the IRSO and is prepared IAW, at a minimum, the Defense Transportation Regulations (DTRs), 49 CFR 171 and 172, 10 CFR Part 71, and DOD 4500.9-R-Part II, *Cargo Movement*. This list is not all inclusive. Consult with the IRSO and SJA to ensure all requirements have been met. Ensure a copy of a recipient's permit or license has been obtained prior to shipping permitted or licensed RAM to verify authorization for receipt. Ensures a copy of material receipt is immediately obtained after the transfer. The documents should be provided to the IRSO or PRSO and kept according to **Attachment 7.**

2.19.9. Coordinate with user MAJCOM Bioenvironmental Engineering office to include radiation safety requirements in all contracts for operating, changing, or repairing systems that contain RAM.

2.19.10. Ensure that contractors supporting the PM coordinate with the IRSO prior to bringing RAM onto USAF installations. Ensure contractors are fully informed (orally and in writing) of the requirement to possess the appropriate licensure. In areas of exclusive Federal jurisdiction, contractors must have an NRC license, or an Agreement State license with current NRC Form 241, authorizing possession, use, storage, and transfer of RAM on the installation. Written approval from the installation commander's appointed approval authority is also required; this is normally the IRSO.

2.19.10.1. Ensure contractors have established procedures instructing their employees and subcontractors on how to use their RAM safely. Contractors are solely responsible for the safety and health of their employees and subcontractors.

2.19.10.2. Contractors shall immediately contact the IRSO and contracting officer if radioactive devices/items may impact operations, personnel, facilities, or real estate.

2.20. Chief of the Contracting Office for the Installation.

2.20.1. Ensures that all contracts involving RAM contain the terms and conditions the IRSO has determined must be in the contract in order to be in compliance with all applicable statutes, regulations and instructions for managing RAM in the USAF. Contracts involving use of RAM must have:

2.20.1.1. An NRC or Agreement State license. A copy of the NRC Form 241 must be an adjunct to the Agreement State license for those areas of exclusive Federal jurisdiction. For those areas of concurrent or proprietary jurisdiction in an agreement state, then the respective Agreement State license is a valid authorization; or

2.20.1.2. A valid US Navy or Veterans Affairs (VA) RAM permit; or

2.20.1.3. Written certification from DOE organizations or DOE prime contractors that they are exempt from NRC license requirements; and

2.20.1.4. Written approval from the IRSO to transfer, transport, or use temporary storage areas for RAM on the installation.

2.20.1.5. A clause authorizing the IRSO to suspend unsafe operations involving the use of RAM.

2.20.2. All solicitations for goods or services that use RAM shall contain selection criteria that will be used in making an award. Compliance with these criteria is mandatory and must receive IRSO approval of compliance before award approval.

2.20.3. Provides all design reviews and work order requests involving potential use, movement or disposal of RAM to the IRSO for review and approval prior to allowing work to commence on contract. Work requests without prior approval of the IRSO will be denied.

2.20.4. In coordination with the IRSO, and IAW the terms and conditions of the contract, suspends contractor operations that violate this instruction, a permit, or Federal regulations until corrective action is taken.

2.21. Logistics Readiness Squadron Operations Officer.

2.21.1. Prepares and transports RAM shipments IAW 10 CFR 71, 49 CFR 171 and 172, and DTR DOD 4500.9-R-Part II, Cargo Movement, as applicable, and is otherwise compliant with **paragraph 2.16**.

2.21.2. Ensures personnel performing transportation operations (e.g., receipt, shipment, and packaging) of RAM comply with training requirements specified in 49 CFR 172.704 and DTR DOD 4500.9-R-Part II.

2.21.3. Establishes procedures, in coordination with the IRSO, for the safe movement of RAM within or on an USAF installation.

2.21.4. Shall not transfer any RAM to units on the installation without prior coordination with the installation or affected PRSO. Permitted RAM will not be transferred to any organizations without a current permit, a PRSO, or without the proper identification of radionuclides/quantities of material/devices as authorized on the permit.

2.21.4.1. **(Added-MOODYAFB)** Ensures shipping documents include swipe sample results, if applicable, which determine package and item contamination levels. Consult the IRSO to determine if swipe surveys are required to ship a particular item.

2.21.5. Develops and implements procedures to prevent the inadvertent transfer of RAM/items of supply known or suspected of containing RAM through the Defense Reutilization Management Office (DRMO) system. Establishes 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 DRMO as having the potential to contain RAM and/or components.

2.22. Base Civil Engineer.

2.22.1. Immediately notifies the IRSO of damage (e.g., fire, natural disaster) to buildings or waste sites storing and/or containing RAM. This includes any incident or event where buildings or sites containing and/or storing RAM are potentially in danger and/or at risk because of their close proximity to the incident.

2.22.2. Ensures disaster emergency response plans include procedures for the theft, loss, sabotage or release of RAM. The IRSO shall be included in the development and exercise of all emergency response plans involving RAM.

2.22.3. Complies with the PRSO's instructions regarding incident(s) and/or mishaps involving permitted radionuclides of a quantity of concern as defined by the NRC (reference **Attachment 8**).

2.22.4. Semi-annually provides the IRSO a list of all radioluminescent exit signs on the installation IAW **paragraph 3.2.1.2.1**.

2.23. Installation, Security Forces.

2.23.1. Immediately notifies the IRSO of suspected, attempted or actual theft or sabotage of RAM, to include supply items containing RAM. This includes any situation where the potential for collateral damage exists due to threats in near proximity to RAM.

2.23.2. Complies with the instructions of the PRSO for special conditions associated with emergency response to incidents involving radionuclide quantities of concern as defined by the NRC (**Attachment 8**).

2.24. Installation, Antiterrorism/Force Protection Working Group. IAW AFI 31-210, paragraph 3.10.3, shall include the IRSO on the Force Protection Working Group.

2.25. Permittees. The Permittee is the commander, or equivalent, identified in Block 1 of the permit, and the individual ultimately responsible for meeting permit conditions, compliance with AFIs and Federal regulations.

2.25.1. The Permittee shall be an individual who:

2.25.1.1. Is a supervisor, with operational and administrative control (e.g., commander, division chief, branch chief) over the PRSO and all users, in the organization in which RAM is used; and

2.25.1.2. Cannot be the PRSO or user of the RAM authorized by the same permit unless approved by the RICS; and

2.25.1.3. Cannot be the IRSO, unless approved by the RICS; and

2.25.1.4. Cannot be a contractor, unless approved by the RICS; and

2.25.1.5. Is approved by the RICS.

2.25.2. Ensures compliance with the provisions of 10 CFR Parts 19, 20, 21, 30, 35, 36, 71, and 49 CFR. **Note:** All incident reports required by those parts must be forwarded to the RICS. Reporting criteria are found at **Attachment 11**.

2.25.3. Ensures compliance with this AFI, and other applicable instructions, permit conditions and representations in permit applications, or applicable NRC General License conditions. USAF requirements for GLDs are found in **Attachment 3**.

2.25.4. Provides required resources for the PRSO to maintain compliance with this instruction (reference **Attachment 11**).

2.25.5. Provides the PRSO and IRSO clearance and access to review, monitor, and implement controls for all processes involving the use of RAM covered by their permit.

2.25.6. May not provide authority to the PRSO to sign documents authorizing any permit actions (Template Permit Action Forms, NRC Form 313, and NRC Form 314). **Exception:**

In cases where there exists an active RSC, the PRSO may request permit actions without prior Permittee approval. Actions must be documented in the RSC minutes.

2.25.7. Delegates the authority to the PRSO to suspend operations that pose a significant health risk to personnel or the public, or can cause contamination of the environment or noncompliance with this instruction.

2.25.8. Ensures applicable program elements as outlined in Chapter 3 are accomplished.

2.25.8.1. **(Added-MOODYAFB)** Familiarize themselves with the operations of workplaces which own, store, maintain, and/or operate any radioactive materials, sources, emitters, or USAF Radioactive Material Permits.

2.25.9. Ensures all contact with the NRC will be made through the RICS except in the following instances:

2.25.9.1. Actions conducted under the provisions of 10 CFR 19 and NRC Form 3 (reference **Attachments 7 and 16**); or

2.25.9.2. Communication initiated by the installation Inspector General (IG) or AFIA/SGI.

2.25.10. Ensures an annual internal audit is completed. Additionally, for medical permits, ensure that a RICS-approved military or civilian medical physicist conducts an on-site review every two years. Validation of qualified active duty medical physicist can be determined by the regional consulting medical physics office or the AF/SG Consultant for Medical Physics as specified in AFI 48-148.

2.25.11. Executes the following administrative requirements:

2.25.11.1. Appoints an individual as the PRSO and submits their qualifications for approval by the RICS. For Template Permits, this requirement is satisfied by signing page two of the Request for Template Permit Action form;

2.25.11.1.1. **(Added-MOODYAFB)** In the event of a change in URSO and/or PRSO, notify the IRSO within 30 days of the change.

2.25.11.1.2. **(Added-MOODYAFB)** When appointing PRSOs, consider deployment schedules, time available given the operations tempo, technical expertise with RAM listed on the permit, etc. Often appointed PRSOs are unable to complete duties due to deploying simultaneously and cannot provide solid continuity (refer to paragraph A13.2.5.). The Permittee may appoint more than two (2) PRSOs. Consult the IRSO for more information.

2.25.11.2. Approves the RSC charter, membership, and Chairperson of the RSC, when required.

2.25.12. Permittees with radionuclides subject to increased controls shall follow the requirements in **Attachment 8**.

2.25.13. Submits the National Source Tracking System transaction report, IAW 10 CFR 20.2207 (b) to (f), to the RICS, by the close of the next business day. **Note:** This only applies to a limited number of Permittees; the RICS will contact Permittees for which this applies.

2.25.14. Permittees shall sustain leases on properties where permitted RAM is located until such time as the RICS terminates the permit.

2.25.15. When decommissioning of a property is required, Permittees shall not be released from a permit until a Final Status Survey has been approved by the RICS and the NRC.

2.25.15.1. **(Added-MOODYAFB)** Request authorization from the IRSO if radioactive material or radiation-producing devices are brought on the base. The request must include the following:

2.25.15.1.1. **(Added-MOODYAFB)** Description of the RAM or device

2.25.15.1.2. **(Added-MOODYAFB)** Use of the RAM or radiation-producing device

2.25.15.1.3. **(Added-MOODYAFB)** List of authorized users

2.25.15.1.4. **(Added-MOODYAFB)** Copy of the RAM permit, if applicable

2.25.15.1.5. **(Added-MOODYAFB)** Point of contact

2.25.15.1.6. **(Added-MOODYAFB)** Security procedures for the RAM or device

2.25.15.1.7. **(Added-MOODYAFB)** Date of the RAM or device coming on to the base

2.25.15.1.8. **(Added-MOODYAFB)** Duration of time the RAM or device will be used on the base

2.25.15.2. **(Added-MOODYAFB)** If the duration of time the RAM or device will be used on the base exceeds one year, a separate request must be submitted to the IRSO each year.

2.25.16. **(Added-MOODYAFB)** Develop a written radiation protection program. The written radiation protection program must be reviewed by the IRSO annually. The program will contain the elements outlined in the Moody Air Force Base Supplement to AFI 48-148 and paragraph 2.28.9 of this instruction. The program will also include procedures for satisfying all requirements in the RAM permit. The IRSO is available to assist with the development of the program.

2.25.17. **(Added-MOODYAFB)** All reports regarding the radiation safety program, to include compliance with federal, state, and Air Force regulations, will be sent to the IRSO within 30 days of being signed.

2.25.18. **(Added-MOODYAFB)** Allow IRSOs to have access to radiation protection program documents, as they have oversight of the base's radiation safety program.

2.26. Permit Radiation Safety Committee (PRSC). Some permit types, such as medical permits, IAW 10 CFR 35, and Type A broad scope permits, IAW 10 CFR 33.13, require the establishment of an RSC.

2.26.1. Must be familiar with this instruction, permit conditions, Federal regulations, and local requirements for using RAM.

2.26.2. Reviews the training and experience of nominated authorized users and PRSOs, and recommends approval/disapproval to the RICS.

2.26.2.1. When local approval of physicians as medical users is authorized, the PRSC may approve such users provided they have met the following requirements:

2.26.2.1.1. Holds a current medical license;

2.26.2.1.2. Is board certified, and/or has training and experience, described in 10 CFR 35;

2.26.2.1.3. Is an active participant in the facility's medical use program.

2.26.2.2. Periodically reviews the approved list of authorized users to verify that information and user's roles in the program(s) for which they have been approved are current.

2.26.3. Reviews and approves or denies requests to use RAM within the scope of their issued permit. Approved uses must comply with this instruction, permit conditions, and Federal regulations.

2.26.4. Denies or approves minor changes in radiation safety rules with the advice and consent of the PRSC Chairperson and PRSO, as applicable. See 10 CFR 35.26 for medical specific guidance.

2.26.5. Establishes specific requirements for special proposed uses of RAM (e.g., bioassays, physical examinations of users, and special survey methods).

2.26.6. Establishes investigation levels for individual occupational radiation exposures and recommend ways to maintain individual and collective doses ALARA.

2.26.7. Annually, reviews the PRSO's summary report of the entire radiation safety program to determine whether activities, in compliance with this instruction, the permit and Federal regulations and ensure exposures, are ALARA.

2.26.7.1. Directs investigations of all areas of non-compliance, terms and conditions that may, or already have, negatively affected the health/safety of personnel, members of the public, and/or property. Institutes sanctions as necessary to effect corrective actions.

2.26.7.2. Reviews AFIA/SG, self-inspection, and monitoring results. Implements action(s) to correct safety issues or violations and evaluate effectiveness of corrective actions and corrective non-ALARA exposure trends.

2.26.8. Reviews and approves or denies research protocols using RAM based on safe and approved uses of RAM IAW this instruction, the permit and Federal regulations.

2.26.9. Disseminates information to the staff that helps ensure permitted activities are performed safely and in compliance with regulations.

2.26.10. Reviews all dosimetry data quarterly for trend analysis, validation of controls, and to set investigational level based on specific permit activities.

2.27. Chairperson of the Permit Radiation Safety Committee. The Chairperson of the PRSC shall either be the Commander or Commander's designated representative, responsible for the permit, and usually a senior field grade officer within the Permittee's organization. The PRSO is prohibited from acting as the Chairperson.

2.27.1. Ensures membership is consistent with the scope of permitted activities and regulatory requirements. At a minimum, the PRSC should consist of the chairperson, PRSO, representatives using permitted material, and the IRSO.

2.27.2. Ensures the PRSC meets as often as required by the permit or this instruction and at least quarterly to assure the radiation safety program is operating in compliance with its permit, established procedures, and regulations. A quorum must be present at the scheduled meeting. A quorum consists of the PRSC Chairperson (or designated representative), the primary or alternate PRSO, IRSO or alternate, and at least half of the PRSC membership.

2.27.3. Invites commanders whose resources and/or direct activities influence successful outcomes of permitted activities. Invites ancillary personnel (e.g., safety, housekeeping, infection control, maintenance, security forces) as deemed necessary.

2.27.4. Generates minutes of the meeting including, but not limited to:

2.27.4.1. The date of the meeting

2.27.4.2. Members present and absent;

2.27.4.3. A summary of deliberations and discussions, including the numerical results of all votes;

2.27.4.4. Recommended actions, including identifying the Office of Primary Responsibility and whether the action is open or closed;

2.27.4.5. Approvals granted for individuals, protocols, or other actions, and a copy of the credentials or other documents used as the basis for the approvals;

2.27.4.6. Deviations from or violations of this instruction, the permit or Federal regulations;

2.27.4.7. Changes to permit conditions and inspection results; and

2.27.4.8. ALARA program reviews including trend analyses and self-inspection results.

2.27.5. Ensures 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.

2.27.6. Retains meeting minutes until permit termination.

2.28. Permit Radiation Safety Officer (PRSO). The PRSO shall be a member of the unit with authorized use of permitted RAM, unless otherwise approved by the RICS.

2.28.1. Coordinates with the Permittee on requests for an initial permit (as proposed PRSO), renewals, amendments to an existing permit, or termination of a permit. The PRSO cannot be the Permittee.

2.28.2. Ensures compliance with applicable parts of 10 CFR. **Note:** All incident reports required by those parts must be made to the RICS.

2.28.3. Ensures compliance with this AFI, other applicable instructions, permit conditions and representations in permit applications.

2.28.3.1. **(Added-MOODYAFB)** Understand and enforce all portions of the RAM permit, which may include inventories, radiation exposure surveys, security, training, proper use of material, and documentation and recordkeeping requirements.

2.28.3.2. **(Added-MOODYAFB)** All reports regarding the radiation safety program, to include compliance with federal, state, and Air Force regulations, will be sent to the IRSO within 30 days.

2.28.3.3. **(Added-MOODYAFB)** Allow IRSOs to have access to radiation protection program documents, as they have oversight of the base's radiation safety program per AFI 48-148.

2.28.3.4. **(Added-MOODYAFB)** In the event of a change of PRSO, notify the IRSO within 30 days of the change and provide the documentation sent to the RIC for approval.

2.28.4. Informs the Permittee, supervisors, workers, and IRSO when procedures are not in compliance with this instruction, Federal regulations, or ALARA.

2.28.5. Provides information, as necessary, to the IRSO regarding the receipt, possession, use, distribution, storage, transportation, transfer or disposal of any RAM, or commodity containing RAM.

2.28.6. Coordinates with the IRSO to apply for a USAF RAM Permit from the RICS, IAW **paragraph 3.4** or **paragraph 3.9**, unless the material is otherwise excluded by this instruction.

2.28.7. Coordinates with the IRSO on operations affecting the installation radiation safety program (e.g., changes in source-use locations, shipment of RAM, or method of disposal) and approves or disapproves actions under his/her jurisdiction.

2.28.8. Assists the Permittee and IRSO to determine report, promptly investigate and correct:

2.28.8.1. The causes, severity, and results of mishaps or incidents, and

2.28.8.2. Non-compliance or other variation(s) from approved radiation safety requirements.

2.28.9. Documents and maintains in binders or files, the Permittee's written policy and procedures for implementing requirements of the permit, this instruction and applicable Federal regulations. All permitted activities should have policy and procedures for conducting and documenting:

2.28.9.1. Communications with RICS, including mandatory reporting;

2.28.9.2. Authorized procurement of RAM;

2.28.9.3. Receipt and acceptance of RAM packaged;

2.28.9.4. Storage of RAM;

2.28.9.5. Inventories of RAM (including GLDs and certain exempt quantities – see **paragraph 3.1.12**) to include providing the inventory to the IRSO if requested;

2.28.9.6. Emergency response plans for the loss of control of RAM and updated emergency response numbers;

2.28.9.7. Safe use of RAM;

2.28.9.8. Periodic radiation surveys as required by permit, regulation, and with 10 CFR 20.1501 and 20.1502;

2.28.9.9. Calibration and quality assurance checks of survey instruments and other safety equipment;

2.28.9.10. Disposal of RAM;

2.28.9.11. Financial assurance plans, if required (reference **Attachment 3**);

2.28.9.12. Records of decommissioning of locations where RAM was previously used or stored;

2.28.9.13. Training of personnel who work in, or frequent RAM use and storage areas;

2.28.9.13.1. **(Added-MOODYAFB)** Ensure shop personnel receive initial and annual refresher site- or workplace-specific radiation safety training. The training must incorporate information from the radiation exposure survey, written radiation protection program. Initial training must be conducted within 60 days of assignment and training documentation will be maintained for three years.

2.28.9.14. Responses to all findings from AFIA/SG or NRC;

2.28.9.15. Archival of all documents with the installation safety office/environmental management office. Coordinate with the RICS on disposition of records requiring permanent archival storage at permit termination.

2.28.9.16. **(Added-MOODYAFB)** Request assistance from the IRSO, if necessary, with regard to maintaining and supporting the Permittee's written policy.

2.28.10. Ensures maintenance of records and reports required by NRC regulations and AFIs that apply to each permit, including the permit and permit application, amendments, and correspondence related to the permit.

2.28.11. Briefs, at least annually, the Permittee and IRSO on the permit radiation safety program, including program regulatory compliance and the results of personnel exposures. Documents the annual brief with a memo, Staff Summary Sheet (SSS), or electronic SSS signed by the Permittee and maintains this with permit records. A copy of this memo is to be sent to the RICS, as requested.

2.28.11.1. **(Added-MOODYAFB)** If findings are recorded, correct all findings in writing within 60 days of the review.

2.28.12. Ensures annual training is conducted IAW 10 CFR 19.12, and is commensurate with the level of radiation risk represented by authorized permit activities. Training of non-radiation workers that work in the area shall be conducted as well. Implementation should follow guidance in NRC NUREG 1556-series for the applicable permit type (reference **Attachment 1** and AFI 48-148 for additional information).

2.28.13. Assists the RSC, as applicable, in understanding the responsibilities of discharging their duties, and, at a minimum, provides the following information and documents in meeting minutes:

2.28.13.1. 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.

2.28.13.2. A summary of all incidents, mishaps and violations involving RAM to ensure the root cause was properly identified and appropriate corrective action(s) was taken.

2.28.13.3. A summary of amendments or changes to the permit, this instruction, USAF policies and Federal regulations affecting the program.

2.28.14. Ensures calibration of radiation instrumentation used for compliance monitoring according to ANSI guidance at intervals not to exceed one year unless otherwise specified by permit conditions, AF instruction, or Federal regulation. 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. Retains calibration records IAW **Attachment 7**. Records of operational checks are recommended, not required.

2.28.15. Ensures authorized users performing transportation functions (e.g., receipt, shipment, and packaging) of RAM comply with the training requirements specified in 49 CFR 172.704 and DTR DOD 4500.9-R-Part II.

2.28.16. Exercises authority granted by the Permittee to request permit amendments for broad scope and medical permits IAW **paragraph 2.25.6**.

2.28.17. Exercises authority granted by the Permittee according to **paragraph 2.25**. Reports deviations from this instruction to the unit commander and, as necessary, to the RICS.

2.28.18. One month in advance of the shipment or receipt of one gram or more of SNM, coordinates with the Permittee, IRSO, and RICS, then submits a completed NRC FORM 741(Nuclear Material Transaction Report) to the RICS on the same day. The RICS will, in turn, forward the completed NRC FORM 741to NRC/DOE by no later than the close of business the next working day.

2.28.19. **(Added-MOODYAFB)** Report any suspected or actual overexposures to the IRSO or alternate within 24 hours and assist in the subsequent investigation.

2.28.20. **(Added-MOODYAFB)** Inform the IRSO of any proposed change in the facilities for all operations that involve radioactive materials.

2.29. Workers. Personnel using RAM shall comply with the permit authorizing the materials use, this instruction, local instructions and Federal regulations. In addition, workers must:

2.29.1. Comply with directions of the IRSO and PRSO;

2.29.2. Immediately report conditions that are of imminent danger to life or health or may negatively affect USAF property to either the IRSO or PRSO;

2.29.3. Become familiar with NRC Form 3;

2.29.4. Perform all duties to keep radiation exposures ALARA;

2.29.5. Wear dosimetry when required and store dosimetry in the designated control area when not in use.

2.29.6. Not override engineering controls, modify personal protective equipment or tamper with radiation dosimeters or purposely expose radiation dosimeters to radiation or RAM;

2.29.7. Bring observed violations to the attention of their supervisors. All workers can report allegations to the RICS or NRC using the procedures in **Attachment 15**.

2.29.8. **(Added-MOODYAFB)** Use RAM IAW the permit requirements or Attachment 3 of this publication, when applicable.

Chapter 3

PROGRAM ELEMENTS

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

3.1.1. RAM shall not be applied to people or clothing. **Exception:** RAM may be applied as part of an approved medical diagnostic or therapeutic practice.

3.1.2. RAM 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.

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

3.1.4. RAM shall not be included in displays open to the general public. **Exceptions:**

3.1.4.1. 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;

3.1.4.2. Materials used to train personnel how to identify an item or substance;

3.1.4.3. Materials authorized by the AF Museum (e.g., static display aircraft or other weapon system components having dials, gauges containing RAM); or

3.1.4.4. A USAF RAM Permit authorizes the display.

3.1.4.5. 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 20, and ALARA.

3.1.5. Targets used on operational ranges shall not contain RAM, including exempted materials, unless specifically allowed to do so by a USAF RAM permit. Range authorities shall develop and implement procedures to screen all targets that potentially contain and/or suspect to contain RAM.

3.1.6. Only the RICS may cite the MML as authority to receive RAM or devices that have RAM into the USAF supply inventory.

3.1.7. Installation Commanders and Permittees will recognize the RIC/S as the interpretive authority on any AFIA/SG finding. The AFIA/SG shall not be cited as authority to deviate from the permit, AFIs, or Federal regulations. NOTE: “RIC/S” is used to designate the RIC and/or RICS.

3.1.8. A USAF RAM Permit shall not be cited as authority to receive RAM or devices that contain RAM unless specifically authorized on the permit.

3.1.9. Individuals or organizations shall not physically accept custody of non-exempted RAM without first obtaining written approval via a permit or other authorization from the RICS or AFSC/SEW.

3.1.9.1. **(Added-MOODYAFB)** The permit or documentation of authorization must be received by the IRSO prior to accepting custody of non-exempted RAM.

3.1.10. 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.

3.1.11. USAF activities in locations outside of the United States and its territories shall also follow applicable laws and regulations of either the United States or the host nation. 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 United States. 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 United States.

3.1.11.1. Permits issued to USAF organizations on installations in locations outside of the United States and its territories are subject to all applicable host nation restrictions under applicable international agreements.

3.1.11.2. 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.

3.1.12. Exempt Quantities. This instruction requires the inventory of material covered by 10 CFR 30.15 (e.g., electron tubes and wrist watches), 30.19 (e.g., gun sights), 30.20 (e.g., chemical agent detectors) and any discrete source in 30.18 (e.g., check sources) not otherwise excluded by the RICS. 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 AFRRAD.

3.2. Procuring Radioactive Materials.

3.2.1. Individuals or organizations:

3.2.1.1. Shall not procure RAM or accept RAM into the USAF supply inventory without a permit. **Exception:** Reference **paragraph 3.3.2**.

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

3.2.1.2.1. For all radioluminescent signs placed into use prior to the issuance of this instruction, the base CE office, in cooperation with the local Bioenvironmental Engineering office, must provide the IRSO with an updated semi-annual inventory of signs, to ensure compliance with **Attachment 3** and 10 CFR 31.5.

3.2.2. For guidelines on procuring items with RAM, follow AFJI 23-504 and this instruction.

3.3. Requirements for a Permit or License.

3.3.1. All USAF organizations must obtain a 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**.

3.3.1.2. No other organization can issue a USAF RAM permit except for the RICS.

3.3.2. USAF organizations do not require a permit for the following RAM:

3.3.2.1. Certain concentrations or quantities of RAM, as detailed in 10 CFR (e.g., 10 CFR 30.14 & 30.18). USAF units/organizations have restrictions on the disposition of exempt quantities of RAM, as detailed in this instruction, and 10 CFR 30.70, Schedule A, or 30.71, Schedule B. **Note:** The material must have been originally distributed from the manufacturer as exempt. Licensed or permitted RAM cannot be considered as exempt simply because it has decayed or has been subdivided to a quantity below the exempt quantity or has been diluted to a concentration below the exempt concentration.

3.3.2.2. Source material specifically exempted by 10 CFR 40.13. **Note:** The item must have been originally distributed from the manufacturer as exempt from licensing and meet strict activity and use limitations as specified in 10 CFR 40.13. This exemption only applies to the requirements of a permit, and not other requirements specified in 10 CFR 19 and 20 (e.g., radiation dose standards, reporting, disposal).

3.3.2.3. Source material (uranium or thorium) IAW 10 CFR 40.22. **Note:** The source material is generally licensed and USAF organizations obtaining source material under 10 CFR 40.22 are not exempt from the requirements of 10 CFR Parts 19, 20, and 21 since the USAF possesses source material under a specific license (reference 10 CFR 40.22(b)).

3.3.2.4. GLDs, when managed according to 10 CFR 31.3, 31.5, 31.7, 31.10, or 31.11. Requirements for possession, transfer and disposal of GLDs are summarized in **Attachment 3**. **Note:** Devices requiring registration under 10 CFR 31.5(c)(13), containing at least 10 mCi of Cesium-137, 0.10 mCi of Strontium-90, 1.0 mCi of Cobalt-60, or 1.0 mCi of Americium-241, shall be specifically permitted.

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

3.3.2.6. Reactor fuel elements and sources inherent to reactor operations (e.g., neutron start-up sources classed as 91(b) material). **Note:** This exemption does not apply to ancillary support sources, such as calibration sources, that are not classified as 91(b) material.

3.3.2.7. Electron tubes containing Rhenium-187, or otherwise specifically exempted under the provisions of **paragraph 3.3.2.1** and 10 CFR 30.15(a) (8).

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

3.3.3. Non-USAF organizations, except DOE organizations and DOE prime contractors, transferring or using RAM on USAF installations in areas of exclusive Federal jurisdiction must have an NRC or Agreement State license with a current NRC Form 241 authorizing transfer and use on the installation and written approval from the installation commander's appointed approval authority, normally the IRSO.

3.3.4. DOE organizations and DOE prime contractors must certify, in writing, that they are exempt from NRC licensing requirements.

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

3.4.1. There are two types of USAF RAM permits: Template and Non-Template.

3.4.1.1. Template permits are issued for devices or applications that pose relatively little radiological risk and employ standardized permit conditions (reference **paragraph A3.3.1** for examples).

3.4.1.2. Non-Template permits are issued to organizations that involve significant amounts of sealed or unsealed RAM and pose greater than minimal radiological risk. These permits mandate detailed radiation protection programs and terms and conditions for use. Examples include nuclear medicine clinics, radioactive waste sites, research laboratories or other unique applications where standard permit conditions are not appropriate.

3.4.2. Initial applications for permits are prepared and submitted IAW **Attachment 4**. Contact the RICS if an immediate mission critical permit or amendment is required and cannot be handled IAW **Attachment 5** due to time constraints.

3.4.2.1. For NRC forms, regulatory guides, and guidance on the administrative aspects of permits, contact the RICS. Regulatory guides are also available through the Nuclear Regulatory Commission at **http://www.nrc.gov/reading-rm/doc-collections**/.

3.4.2.2. Applications require the signature of the Permittee and appointment of a PRSO and, if possible, an alternate PRSO. The Permittee is generally the Commander, or civilian equivalent, responsible for the organization. Refer to **paragraph 2.28** and **Attachment 5** for PRSO requirements.

3.4.2.3. Organizations planning new or unique applications of RAM must contact the RICS as early as possible to decide the scope of the permit and the need for a site visit by the permit action officer.

3.4.2.4. Plans for new facilities must be approved by the RICS prior to construction in which either large quantities of sealed radioactive sources (see **Attachment 8** for threshold values) or unsealed RAM will be used. Plans must include provisions for baseline surveys prior to initially storing RAM in a location. Increased controls shall be in place and inspected by AFIA/SG before the permit will be issued.

3.4.2.5. Applications for activities expected to have a significant environmental impact shall be evaluated IAW 32 CFR 989. Construction of a facility or site at which the activity will be conducted shall not begin until the environmental impact report has been submitted with the permit application, and found acceptable, pursuant to subpart A of 10 CFR 51.

3.4.2.6. Pursuant to 10 CFR 30.35, 40.36 or 70.25, certain applications require a proposed decommissioning funding plan and/or a certification of financial assurance for decommissioning. The RICS should be contacted prior to non-template permit application submission on the need for these plans.

3.4.2.7. 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 – Quantities of Radioactive Material Requiring Consideration of the Need for an Emergency Plan*,

requires either a dose assessment or an emergency plan pursuant to 10 CFR 30.32(i)(1)-(3). The RICS should be contacted to coordinate development of these materials.

3.4.2.8. Applicants desiring to ship, transfer or transport RAM greater than a Type A quantity (reference 10 CFR 71, Appendix A, *Determination of A1 and A2*) must have an NRC approved transportation quality assurance (QA) program IAW 10 CFR 71, Subpart H*;* this can be accomplished by:

3.4.2.8.1. Submitting an application to the RICS following guidelines in 10 CFR 71, Subpart G, Subpart H; and NRC Regulatory Guide 7.10. **Note:** Contact the RICS for guidance if not using a commercial NRC approved package.

3.4.2.8.2. Alternately, utilizing a source vendor or other NRC or Agreement State licensee with a NRC approved transportation QA program. **Note:** Ensure that the contractor has jurisdictional authority to perform desired work. Contact the RICS for guidance.

3.4.2.8.3. Applicants desiring to ship or transport RAM greater than 100 times the values listed in **Table A8.2** of this instruction must also implement additional security measures. **Note:** Contact the RICS for guidance, if needed, at least six months prior to shipping date.

3.4.3. Renewal Permit Applications:

3.4.3.1. USAF RAM Permits are issued with expiration dates. Renewal applications for both types of permits are prepared and submitted IAW **Attachment 4**.

3.4.3.1.1. 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.

3.4.3.1.2. 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.

3.4.3.1.3. 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 AFSC/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.

3.4.4. Permit Amendments: All requests must be submitted through the IRSO with a courtesy copy to the MAJCOM Bioenvironmental Engineer. Permittees must apply for a permit amendment when the following conditions are anticipated:

3.4.4.1. Changing the primary or alternate PRSO. (Reference **paragraph 2.28** and **Attachment 5** for PRSO requirements);

3.4.4.2. Changing authorized user, nuclear pharmacist, medical PRSO, or authorized medical physicist for medical permits. **Note:** Both medical and broad scope Permittees

shall also notify the RICS when an authorized user, nuclear pharmacist, medical PRSO, or authorized medical physicist leaves or discontinues their duties under the permit, as applicable.

3.4.4.3. Procuring RAM that is not authorized by the permit, changing radionuclide, chemical or physical form variation, or more than the maximum quantity authorized on the permit. This includes RAM exceeding NRC quantities of concern (reference **Attachment 8**).

3.4.4.4. Changing the use or storage areas of RAM listed in the application or listed on the permit.

3.4.4.5. Formulating any changes in the shielding of rooms used for medical radiotherapy, industrial radiography, instrument calibration, irradiation or other RAM use that require radiation shielding in walls, floor or ceiling to protect adjacent areas.

3.4.4.6. Using RAM for a clinical procedure allowed by 10 CFR 35, but not authorized by the existing permit.

3.4.4.7. New permit applications and amendments for the issuance of all types of chemical agent monitors shall be coordinated with the RICS.

3.4.4.8. 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. Documentation shall include:

3.4.4.8.1. The effective date of the change;

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

3.4.4.8.3. The reason for the change;

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

3.4.4.8.5. The signature of the PRSO; and

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

3.4.4.9. Permit amendments are not required for the following:

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

3.4.4.9.2. Replacing permitted items with identical items;

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

3.4.4.9.4. Assigning service contracts for services such as equipment repair or calibration, waste disposal, health physics or bio-environmental engineering advisor.

3.4.4.10. Permittees must submit an amendment request to the RICS prior to changing their mailing address or when personnel listed on the permit such as users or RSOs

permanently cease their duties or change their names. Medical Permittees must notify the RICS in writing within 30 calendar days when they change their mailing address or when changing personnel listed on the medical permit.

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

3.4.5. Non-USAF organizations using RAM, including NARM, on USAF installations. When a civilian organization or other Federal agency desires to transfer, transport, or temporarily store RAM on or conduct operations using RAM on an USAF installation, written approval must be obtained from the IRSO.

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

3.4.5.2. Requests must be in writing and include:

3.4.5.2.1. A brief description of the proposed activities;

3.4.5.2.2. A copy of a current NRC or Agreement State license with current NRC Form 241 for areas of exclusive Federal jurisdiction, when applicable. For those areas of concurrent or proprietary jurisdiction in an Agreement State, then 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 United States where the NRC or Agreement State has jurisdiction. **Exception:** Contractors using generally licensed materials (e.g., certain NITON Lead Paint Analyzers) and DOE or DOE prime contractors operating IAW 10 CFR 835 do not require an NRC license or NRC Form 241.

3.4.5.2.3. 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;

3.4.5.2.4. A copy of the contract clause of the USAF contract describing work to be performed at the installation and the inclusive dates of the work; and

3.4.5.2.5. A written authorization in the contract that the IRSO can conduct periodic assessments to ensure contractor personnel is complying with radiation safety practices to prevent exposures to USAF personnel and avoid contamination of government property. In addition, the contract should specify the IRSO must have authority to suspend contractor operations believed to be unsafe.

3.4.5.3. 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. The form must specify the correct locations and dates of performance of licensed activities. State licensees may not work on USAF or other installations where exclusive Federal jurisdiction exists for more than 180 calendar days per calendar year without first getting an NRC license.

3.4.5.4. 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.

3.4.6. Permittees under new permits must notify AFIA/SG immediately upon first receipt of RAM.

3.5. Posting Notices to Workers.

3.5.1. Applicants and Permittees using NRC-licensed RAM and personnel using RAM, including at overseas locations, must post an NRC Form 3. Each Permittee shall post a supplemental notice regarding the availability of a permit and MML documentation according to 10 CFR 19.11. Reference **Attachment 5** for the supplemental notice.

3.5.2. Permittees, IAW 10 CFR 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 10 CFR 21.6. Reference **Attachment 6** for Section 206 of the Energy Reorganization Act of 1974.

3.5.3. The forms and notices must be posted IAW 10 CFR 19.11 and 10 CFR 21.6.

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. 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. Reference 10 CFR 20, Subpart I, for more information.

3.6.2. All permitted and licensed radioactive sources and devices must be inventoried as follows:

3.6.2.1. Permitted RAM or devices shall be inventoried at the frequency specified in the permit.

3.6.2.2. Licensed RAM or devices not requiring a permit shall be inventoried IAW the applicable CFR, Technical Order or AFI (reference **Attachment 3**).

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

3.6.3. Inventory documentation must be retained IAW the applicable CFRs (reference **Attachment 7**). Documentation must include the following:

3.6.3.1. Date of the inventory;

3.6.3.2. Model number and serial number of each source, if assigned;

3.6.3.3. The identity of the radionuclide, manufacturer date, and source activity;

3.6.3.4. The location of each source;

3.6.3.5. The signature of the PRSO endorsing the inventory; and

3.6.3.6. NSN, if applicable.

3.6.3.7. **(Added-MOODYAFB)** Note: The inventory requirements listed in paragraph 3.6.3. may differ from the requirements outlined in the RAM permit. The inventory documentation must satisfy both the requirements of paragraph 3.6.3. and the RAM permit.

3.6.3.8. **(Added-MOODYAFB)** A copy of the inventory must be sent to the IRSO NLT seven (7) days following completion of the inventory.

3.6.4. Information Security and Increased Controls for Certain Quantities of RAM: All RAM and information about the RAM shall be protected from malicious use. Specific requirements are provided in **Attachment 8** for the control of information for certain threshold quantities of material. **Attachment 8** also details specific requirements on increased controls for radionuclide quantities of concern and for transportation of large quantities of RAM.

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, USN, or VA RAM permit, NRC license, or Agreement State License.

3.7.1.2. USAF agencies with written authorization from the RICS or AFSC/SEW, as appropriate.

3.7.1.3. DOE and DOE prime contractors who certify, in writing, that they are authorized to receive the materials.

3.7.1.4. Organizations or persons outside the United States under an export license issued IAW10 CFR 110. 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.

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. Package, label, and consign materials for shipment according to 10 CFR 71 and 49 CFR 173.

3.7.2. Permittees shall ensure that any recipient has authority to receive the RAM before making the transfer by:

3.7.2.1. Obtaining and filing a copy of the recipient's NRC license, USAF, USN, or VA RAM permit, or Agreement State license giving authority to receive the RAM, or

3.7.2.2. Obtaining and filing 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 10 CFR 40.64 or 10 CFR 74.15 respectively, must be used for specific transfers.

3.7.4. When shipping NRC specifically licensed, generally licensed or permitted RAM, verify the RAM is received by the ship-to-address and/or the intended destination. Verification of receipt, in writing, by the recipient is the preferred method. 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. 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.

3.7.5. Report transfer of generally licensed material to the RICS with the information required by the NRC IAW 10 CFR 31.5 (reference **Attachments 3** and **11**).

3.7.6. Coordinate with the RICS or AFSC/SEW, as appropriate, at least six (6) months in advance, for transfer of RAM exceeding NRC quantities of concern (reference **Attachment 8**).

3.7.7. Keep records of all transfers according to **Attachment 7**.

3.7.8. Transfer of all RAM from one permit to another does not constitute termination or relieve the Permittee from notifying the RICS or AFSC/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.

3.7.9. **(Added-MOODYAFB)** All transfer activities must be approved by the IRSO in writing prior to transfer. The IRSO will provide quality control for documentation and transfer procedures. It is the responsibility of the PRSO or URSO to contact the IRSO whenever items containing RAM must be transferred.

3.8. Transporting Radioactive Material.

3.8.1. USAF organizations shipping or transporting RAM must comply with the DTR DOD 4500.9-R-Part II, DOT, and US Postal Service regulations.

3.8.2. The generating activity must properly identify RAM and items containing RAM when sending to the Traffic Management Flight for packaging and shipping. Identification of these items and/or RAM shall be IAW 49 CFR 172.202 and the following:

3.8.2.1. Radionuclide(s);

3.8.2.2. Description and number of items;

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

3.8.2.4. Individual and total activity in units of becquerel (Bq) with curies (Ci) in parentheses; and

3.8.2.5. Chemical and physical form (e.g., special form, normal form).

3.8.3. When shipping between or to OCONUS locations, compliance with applicable SOFA, International Air Transportation Association standards and International Atomic Energy Agency Transportation Safety Standards (TS-R-1) is required.

3.8.4. **(Added-MOODYAFB)** The PRSO or URSO must contact the IRSO in the event items containing RAM must be shipped. The IRSO is responsible for the following actions:

3.8.4.1. **(Added-MOODYAFB)** Measure radiation levels or take swipe samples taken prior to shipment, IAW the RAM permit and 49 CFR 173.441. The swipe results must be received and analyzed prior to shipment to ensure compliance with federal, state, and Air Force regulations.

3.9. Managing and Remediating Radioactive Waste Sites.

3.9.1. Manage and remediate radioactive waste sites according to AFI 32-7020 and policies established by USAF/A4/7 and **Attachment 9** of this instruction.

3.9.2. Radioactive waste site remediation is a complex multi-phase, multi-agency process that is subject to NUREG-1575. **Attachment 9** outlines the major responsibilities for each agency and provides a chronological sequence of events that should be followed in order to ensure regulatory compliance.

3.9.3. USAF organizations are not authorized to possess radioactive investigation derived waste or radioactive remediation waste unless authorized by a specific permit.

3.9.4. All suspected radioactive waste sites must be entered into the AF Radioactive Waste Site Registry, maintained by AF/A7CAN. The registry is a database of all formerly known and/or potentially radioactive waste sites. For reasons of posterity, privatization of land, occupational health, public health and public relations, it is imperative that the USAF maintain a master log of these sites.

3.9.5. Any USAF organization, or agency acting on behalf of the USAF, performing intrusive characterization or site remediation involving RAM must have:

3.9.5.1. An NRC or Agreement State RAM license that authorizes site remediation activities, or

3.9.5.2. A USAF or USN RAM permit that authorizes site remediation activities; and

3.9.5.3. Experience with site remediation.

3.9.6. Installations may undertake invasive characterization only if they intend to remediate the site. If this is the case, approval of the RICS or AFSC/SEW, as appropriate, is also required.

3.9.6.1. Remediating a site generates radioactive waste that must be controlled and properly disposed of IAW current AFRRAD guidance. Remediating a site may also release waste in quantities that dictate a prompt total exhumation.

3.9.6.2. Prior to instigating intrusive investigation contracts, the installation should perform a complete historical site assessment.

3.9.7. Work and health and safety plans for remediation of radioactive waste sites, to include waste disposal procedures, must be coordinated IAW **Attachment 9** of this instruction. 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 AFSC/SEW as appropriate, to determine requirements for continuation of field activities.

3.9.7.1. All plans will be submitted to USAFSAM and the AFRRAD office for approval during the project planning stage.

3.9.7.2. 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 AFSC/SEW.

3.9.7.3. Plans for all other sites shall be submitted to the RICS for review. Those sites containing or potentially containing byproduct, source, NARM, and SNM will be forwarded by the RICS to the NRC for their review.

3.9.8. Final reports of remediation of all sites containing RAM shall be sent to the RICS or AFSC/SEW, as appropriate, for archival purposes. The AFRRAD office will maintain and archive all disposal records and manifests for radioactive waste generated from a remediation.

3.10. Managing and Disposal of Radioactive Materials.

3.10.1. IRSO and PRSOs jointly prepare requirements for waste management, according to **Attachment 10**, by considering local conditions such as quantities and types of waste produced, where waste is generated, and the location and configuration of available storage.

3.10.1.1. The base Civil Engineer provides environmental consultation to generating units, the IRSO, and the 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.

3.10.1.2. The base Civil Engineer oversees compliance with installation RCRA permits, if applicable, and/or RCRA requirements for storage, treatment, and disposal of mixed waste IAW Federal, state, and local requirements, AFI 32-7042, and in coordination with the IRSO and the AFRRAD office.

3.10.1.3. Installation generators will coordinate the disposal of radioactive waste and mixed waste with the base Civil Engineer and the IRSO, who will in turn, coordinate with the AFRRAD office.

3.10.2. A USAF RAM permit is required for all radioactive waste storage areas used for permitted or licensed quantities of NRC regulated waste.

3.10.2.1. 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 AFSC/SEW, as appropriate. 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 AFSC/SEW.

3.10.3. Permittees shall ensure an inventory is maintained and all RAM and items containing or contaminated with RAM is secured pending disposal or transfer.

3.10.4. Permittees shall also comply with all other applicable Federal, state, and local regulations and instructions regulating all hazardous and mixed waste at the site. Coordinate with the base Civil Engineer to determine local requirements for managing and staging mixed waste.

3.10.5. Radioactive waste shall be disposed of as soon as practical. 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. Do not collect or store radioactive waste for a period longer than 365 days. Coordinate promptly with the AFRRAD office via the PRSO and IRSO.

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

3.10.6.1. Transfer to an authorized recipient (reference **paragraph 3.7**), subject to the restrictions of 10 CFR 20.2001;

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

3.10.6.2.1. 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

3.10.6.2.2. All radiation labels and markings shall be removed or obliterated; and

3.10.6.2.3. A record of each disposal shall be retained for 3 years.

3.10.6.2.3.1. 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. Medical Permittees must adhere to 10 CFR 35.92(b).

3.10.6.3. Release to effluents IAW 10 CFR 20.2001, if authorized by the RICS.

3.10.6.4. Release to the sanitary sewer IAW 10 CFR 20.2003 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; or

3.10.6.5. Release Carbon-14 and Hydrogen-3 as non-RAM if it meets the requirements of 10 CFR 20.2005, or other more stringent Federal, state, or local regulations.

3.10.7. Disposal by land-burial must be authorized by the AFRRAD office IAW **Attachment 10**, to include adherence to 10 CFR 20.2006. Do not ship radioactive waste from an USAF installation without first acquiring written instructions from AFRRAD.

3.10.8. 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 IAW 10 CFR 20.2003. As noted in **paragraph 3.10.6.4**, in all cases, the Permittee shall coordinate with base Civil Engineering prior to disposal to ensure compliance with local ordinances, state law and Clean Water Act permits.

3.10.9. Permittees may propose alternative disposal procedures, IAW 10 CFR 20.2002, to the RICS for approval.

3.10.10. PRSOs or IRSOs shall maintain disposal records IAW with 10 CFR 20.2108 and as required in **Attachment 7**.

3.10.11. Organizations must be specifically permitted/licensed to receive waste containing RAM for:

3.10.11.1. Treatment prior to disposal;

3.10.11.2. Treatment or disposal by incineration;

3.10.11.3. Decay in storage;

3.10.11.4. Disposal at a land disposal facility licensed under 10 CFR 61; or

3.10.11.5. Disposal at a geologic repository under 10 CFR 60 or 63.

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 material stops. 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. 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.

3.11.3. If a permit is allowed to expire, the permit authorizations remain in full force and effect for *possession only* of material, but ceases for *use* of the material. Permits will remain in *possession only* status until formally terminated.

3.11.4. If a decommissioning plan is required IAW 10 CFR 30.36, 40.47, and 70.38, it must be submitted to the RICS for approval. Decommissioning plans will be reviewed by the RICS and offered to the NRC for their review.

3.11.5. Permittees shall execute the RICS-approved decommissioning plan and properly dispose of all RAM through AFRRAD.

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

3.11.6.1. A completed NRC Form 314;

3.11.6.2. 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. **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;

3.11.6.3. A final status survey, if required, to demonstrate no RAM or residual contamination above limits for unrestricted release as prescribed in NUREG 1575, Rev 1, NUREG 1757, Volume II, and 10 CFR 20.1402; and

3.11.6.4. For permits authorizing possession only sealed or plated sources, a final leak test demonstrating source integrity. Additionally, for permits authorizing possession only

of short half-life material meeting the requirements of **paragraph 3.10.6.2**, a radiation survey/report demonstrating no residual radiation levels in use or storage areas are above background is required IAW NUREG 1575, Rev 1, Appendix B.

3.11.7. Upon termination of the permit, provide all program-related documents to the RICS for final archiving. The RICS will determine the records required. Documents such as records of personnel exposure investigations, spills and contamination are of relevancy and will be maintained by the RICS.

3.12. Reporting Radioactive Material Incidents and Mishaps.

3.12.1. Follow reporting criteria and time limits in **Attachment 11**. Reference **Attachment 12** for a general reporting checklist.

3.12.2. The Permittee, the PRSO, and the IRSO must each ensure the RICS receives reports required by **Attachment 11**. Report an incident if you have any reservations about whether reporting is required.

3.12.3. Report incidents initially by telephone (installations outside the United States may report by message/email) and confirm by fax or message. Report to the RICS by calling DSN 425-6308, Commercial (703) 588-6308, emailing **USAF.RIC@pentagon.af.mil**, or faxing to DSN 425-1272, Commercial (703) 588-1272.

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

3.12.3.2. Inform the Installation Chief of Safety, MAJCOM/SEW, and IRSO of any INRAD or 91(b) material mishaps IAW AFI 91-204.

3.12.3.3. The URSO or Weapons Safety Officer, IAW AFI 91-108, will inform HQ AFSC/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.

3.12.4. 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. Include as much of the information outlined in **Attachments 11 and 13** as is available, but do not delay reporting if you have not collected all the pertinent information.

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

3.12.6. A copy of all written reports must be forwarded to the IRSO, Installation Commander, MAJCOM Bioenvironmental Engineer, MAJCOM functional office and AFIA/SG.

3.12.7. The requirements in **paragraphs 3.12.1 through 3.12.6** are separate from the reporting requirements of AFI 10-206 and AFI 91-204. This instruction 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 Section 91(b) of the AEA.

3.12.8. EPA regulations require reporting releases of RAM characterized as hazardous substances under 40 CFR 302. 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 IAW AFI 10-2501. These reports are separate from the reporting requirements described in this instruction.

3.12.9. 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. The IRSO provides information, approved by the installation commander, and sent through the installation public affairs office, of these types of incidents. Security restrictions on classified information shall be adhered to except in cases of immediate risk to health and/or significant environmental impact.

3.12.10. Safeguard classified information when making reports. 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 reports involving RAM exceeding NRC quantities of concern shall be handled as sensitive information and transmitted as directed by the RICS. All information will be properly marked and secured from unauthorized access.

3.12.11. By Federal law, the USAF must give the NRC certain types of information normally protected from release. When investigating the cause of an incident or mishap and the involvement of persons for reports under this instruction, do not compromise confidentiality of information.

3.13. Response to Radioactive Materials Incidents and Mishaps.

3.13.1. Comply with the requirements in AFIs 91-204, 41-106, 10-2501, and this instruction.

3.13.2. Acceptance of any RAM from civilian sources (e.g., scrap yards, private individuals) is prohibited unless approved by the RICS.

3.13.3. Ensure adequate precautions are taken to prevent possible radiological contamination of personnel or equipment, and to minimize the spread of any contamination that might be present. Protective actions to be considered include:

3.13.3.1. Ensure response personnel use appropriate protective equipment (e.g., gloves, respirators, or protective clothing) when responding to mishaps potentially involving RAM.

3.13.3.2. Ensure that appropriate radiation detection equipment is available and personnel are properly trained to use it.

3.13.3.3. If radioactive contamination is detected, take action as soon as possible to identify, notify and assess those initial responders or other personnel who might have been contaminated during initial life-saving operations.

3.13.3.4. Collect and segregate RAM at the incident/mishap site after immediate life-saving and incident control actions are complete.

3.13.4. When responding to aircraft incidents, recognize that cargo and/or aircraft components may contain RAM. Examples include:

3.13.4.1. Licensed or permitted RAM or items containing licensed or permitted RAM in the cargo.

3.13.4.2. Munitions, ballast and counterweights made of DU.

3.13.4.3. Magnesium-thorium in airframe and engine parts.

3.13.4.4. Thorium-coated lenses and static elimination sources (Po-210) in target designators.

3.13.4.5. Radioluminescent exit markers, dials, and gauges containing tritium (H-3) or radium (Ra-226).

3.13.4.6. Americium-241 sources in Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) or SNIPER systems.

3.13.4.7. Strontium-90 in in-flight Blade Inspection Systems (IBIS).

3.13.5. Electron tubes, ignition and spark gaps, or other items may contain exempt quantities of radionuclides and present a minimal hazard risk when damaged. Use gloves when handling, and bag or wrap damaged items for proper disposal.

3.14. Investigating Radioactive Materials Incidents and Accidents.

3.14.1. The Permittee is responsible for investigating and preparing a report on events listed in **paragraph 3.12** and **Attachment 11** that involve permitted RAM, unless directed otherwise by higher authority. The PRSO, assisted by the IRSO, normally performs the investigation.

3.14.1.1. **(Added-MOODYAFB)** The Permittee, PRSO, and IRSO will make a good faith effort to recall all RAM.

3.14.2. The Commander of the affected organization is responsible for the investigation and report for reportable events not involving permitted materials. The IRSO normally performs the investigation.

3.14.3. 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 3.12.10** and **3.12.11** about protecting classified information. Consult with the RICS.

3.14.4. Forward reports to organizations listed in **paragraph 3.12.6**.

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

3.14.6. 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 instruction or Federal regulations (reference **paragraph 3.16**).

3.15. Retaining Records. Records shall be retained for the receipt, storage, distribution, use, transfer, disposal and incident involving permitted or licensed RAM IAW 10 CFRs Parts 19, 20, 30-36, 40, 70, 71, as implemented in **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**.

If a conflict exists, then maintain records with the more stringent retention period. Reference Attachment 7 for retention periods.

3.16. Inspecting Permit Holders and Enforcing Compliance.

3.16.1. Inspections: Inspections of Permittees issued USAF 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 **Attachment 13**.

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

3.16.1.2. An inspection priority code is assigned to each permit (refer to the cover letter issuing the permit or permit renewal). A priority 1 permit is a high priority permit inspected annually; a priority 3 permit is inspected every three years. 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.

3.16.1.3. Copies of USAF inspection reports are forwarded to:

3.16.1.3.1. The Permittee and PRSO;

3.16.1.3.2. The owning MAJCOM/SG and IG;

3.16.1.3.3. The RICS (AFMSA / SG3PB); and

3.16.1.3.4. The NRC, by the RICS, when approved according to AFI 90-201.

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

3.16.1.5. Permittees must report corrective actions for noncompliance IAW this instruction and AFIA/SG.

3.16.1.6. 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.

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

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

3.16.1.6.3. 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 NOVs noted.

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

3.16.2. Enforcement: The RICS may take enforcement action as a result of reported incidents, inspection findings, or identified violations. Enforcement policy details are provided in **Attachment 14**.

3.16.2.1. The RICS takes administrative enforcement actions including:

3.16.2.1.1. Issuances of NOVs;

3.16.2.1.2. Adjusting AFIA/SG findings and NOVs.

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

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

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

3.16.2.2. Commanders and the Permittee are responsible for the discipline of individuals according to the Uniform Code of Military Justice (UCMJ).

3.16.2.3. The NRC can also enforce regulatory compliance IAW 10 CFR 2. The NRC's enforcement policy can be found at:

http://www.nrc.gov/what-we-do/regulatory/enforcement/enforce-pol.html.

The NRC's enforcement procedures are found at:

http://www.nrc.gov/what-we-do/regulatory/enforcement/guidance.html#manual.
Note: The NRC also issues press releases on enforcement actions.

3.16.2.4. Approval and acceptance of Permittee corrective actions are at the discretion of the RICS.

3.17. Managing Allegations.

3.17.1. Employees have a right and responsibility to report unsafe practices, or those that may be in violation of permit conditions, this instruction, or Federal regulations. Employees shall report their concerns immediately to their supervisor. If resolution of the issue cannot be achieved, then the employees can make allegations directly to the RICS or the NRC (reference NUREG/BR-0240, Rev. 3). All Permittee employees are required to be aware of NRC Form 3 that must be posted for employees to view. **Attachment 15** provides details on management of allegations.

3.17.2. For allegations against the RICS or AF/IG, individuals may contact the NRC representative in their region.

3.18. Adopted Forms. DOE/NRC Form 741, *Nuclear Material Transaction Report*

DOE/NRC Form 742, *Material Balance 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 Reciprocity Form)*

NRC Form 313, *Application for Materials License*

NRC Form 314, *Certificate of Disposition of Materials*

NRC Form 483, *Registration Certification-In Vitro Testing with Byproduct Material Under General License*

NRC Form 742 C, *Physical Inventory Listing*

3.19. Prescribed Forms. The RICS prescribes a custom form for all template permit actions. The "Request for Template Permit Action" form may change based on regulatory requirements. It can be obtained by writing or calling the RICS, or by accessing: **https://kx.afms.mil/rad_prot**.

CHARLES B. GREEN
Lieutenant General, USAF, MC, SFS
Surgeon General

(MOODYAFB)

BILLY D. THOMPSON, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Part 19, *Notices, Instructions and Reports to Workers: Inspection and Investigations*

Part 20, *Standards for Protection Against Radiation*

Part 21, *Reporting of Defects and Noncompliance*

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

Part 31, *General Domestic Licenses for Byproduct Material*

Part 33, *Specific Domestic Licenses of Broad Scope for Byproduct Material*

Part 34, *Licenses for Radiography and Radiation Safety Requirements for Radiographic Operations*

Part 35, *Medical Use of Byproduct Material*

Part 36, *Licenses and Radiation Safety for Irradiators*

Part 40, *Domestic Licensing of Source Material*

Part 70, *Domestic Licensing of Special Nuclear Material*

Part 71, *Packaging and Transportation of Radioactive Material*

Part 74, *Material Control and Accounting of Special Nuclear Material*

Part 110, *Export and Import of Nuclear Equipment and Material*

Part 150, *Exemptions and Continued Regulatory Authority in Agreement States*

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Part 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements*

Part 173, *Shippers – General Requirements for Shipments and Packaging*

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Abbreviations and Acronyms

AEA—Atomic Energy Act of 1954, as amended

AFRRAD—Air Force Radioactive Recycling and Disposal Office

ALARA—As Low As Reasonably Achievable

CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act

CFR—Code of Federal Regulations

CRCPD— Conference of Radiation Control Program Directors (a professional organization made up of the Directors and staffs of State regulatory programs)

DOD—Department of Defense

DOE—Department of Energy

DOT—Department of Transportation

DU—Depleted uranium

EPA—Environmental Protection Agency

IRSO—Installation Radiation Safety Officer

LLRW—Low Level Radioactive Waste

MML—Master Materials License

NARM—Naturally Occurring or Accelerator Produced RAM

NOV—Notice of Violation

NRC—Nuclear Regulatory Commission

NSN—National Stock Number

PRSO—Permit Radiation Safety Officer

RADIAC—Radioactivity Detection Indication and Computation (refers to radioactivity detection instrumentation)

RAMMIS—Radioactive Materials Management Information System

RCRA—Resource Conservation and Recovery Act

RIC—Radioisotope Committee

RICS—Radioisotope Committee Secretariat

RSO—Radiation Safety Officer

SNM—Special Nuclear Material

SSDR—Sealed Source and Device Registry

T.O.—Technical Order

UCMJ—Uniform Code of Military Justice

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 United States 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).

As Low As Reasonably Achievable (ALARA)—The principle that personnel exposures must be maintained as low as possible consistent with existing technology, cost, and operational requirements.

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. For medical permits, IAW 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 AFPD 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.

Human Use—The internal or external administration of RAM, to humans.

Incident— For purpose of this instruction, an incident is any event involving RAM that is not defined as a mishap or medical event, or 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, RADIAC sets, Lensatic 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).

Medical Event—any event that meets the criteria of 10 CFR 35.3045(a).

Mishap—For purposes of this instruction, a mishap is defined in AFI 91-202. It is an event involving human acts of omission or commission involving a nuclear reactor, radioisotope power system, or RAM resulting in any of the following:

1) A loss of control of RAM that presents a hazard to life, health, or property. This includes loss of control that may result in any person in an unrestricted area exceeding the limits for exposure to ionizing radiation as stated in Title 10, CFR, Part 20, *Standards for Protection Against Radiation*.

2) Any unexpected event involving RAM or radiation exposure that is serious enough to warrant the interest or action of officials or agencies outside the USAF. This category includes event: having domestic or international implications, those that may cause inquiries by the public or press, and those requiring immediate notification to the NRC under Title 10, Code of Federal Regulations, Part 20, Standards for Protection Against Radiation.

NUREG—technical reports on various topics related to the regulation of nuclear energy published by Nuclear Regulatory Commission.

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 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—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 USAF or USN RAM Permit. See USAF RAM 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 instruction and has the authority to provide the resources necessary to achieve regulatory compliance.

Prescribed Dosage—The quantity of radiopharmaceutical activity as documented in (1) a written directive or (2) in the diagnostic clinical procedures manual or in any proper record according to the directions of the authorized user for diagnostic procedures.

Prescribed Dose—(1) For gamma stereotactic radiosurgery: The total dose as documented in the written directive, (2) For brachytherapy: Either the total source strength and exposure time or the total dose, as documented in the written directive.

Radiation Safety Officer—An individual with specific education, military 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, military 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.

Radioactive Item—A single unit or article constructed of or having RAM, greater than exempt quantities, as a component part.

Radioactive Material (RAM)—Materials whose nuclei, because of their unstable nature, decay by emission of ionizing radiation. The radiation emitted may be alpha particles, beta particles, gamma rays, X-rays, or neutrons.

Radioactive Waste—Waste that contains RAM. Radioactive waste can be generally classed in one of four categories:

High-Level Radioactive Waste (HLRW)—HLRW is spent nuclear fuel from nuclear power plants and waste material from reprocessing spent nuclear fuel.

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, curium).

Low-level Radioactive Waste (LLRW)—LLRW is any radioactive waste that is not HLRW, uranium tailings, or transuranic 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.

Radioisotope Thermoelectric Generator (RTG)—A power system using the thermal energy produced by the radioactive decay of the unstable nuclei of certain isotopes as its energy source.

Restricted Area—For this instruction, a restricted area is an area having access limited to protect individuals against undue risks 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.

SAFE HAVEN—Temporary storage provided Department of Energy classified shipment transporters at Department of Defense facilities in order to assure safety and security of nuclear material and/or non-nuclear classified material.

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 USAF, USN, or VA 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 instruction, 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 NRC license issued to the Department of the Air Force delegating to the USAF regulatory authority over byproduct, source, and limited quantities of SNM used by the USAF.

USAF Radioactive Material Permit—Written authorization from the USAF Radioisotope Committee for USAF organizations to receive, possess, use, distribute, store, transport, transfer and dispose of RAM. Permits parallel NRC licenses in applications and scope. The USAF's Master Materials License, and Broad Scope licensees, issue permits which are equivalent to NRC licenses for authorizing NRC regulated material. Unlike the NRC, a single permit may authorize byproduct, source, SNM, and NARM.

USAF Radioisotope Committee (RIC)—A committee established IAW requirements of the USAF Master Materials License to coordinate the administrative and regulatory aspects of

permitting, acquiring,, receiving, possessing, using, distributing, storing, transporting, transferring and disposing of all RAM in the USAF, except that material transferred from the Department of Energy to the Department of Defense in nuclear weapon systems, certain radioactive parts of weapons systems and nuclear reactor systems, parts and fuel controlled under Section 91(a) or 91(b) of the AEA. It is composed of stake-holder representatives from Staff Air Force and Headquarters Air Force.

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 Radiation Health function of AFMSA / SG3PB).

User—For this instruction, 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 by product 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 I-131 greater than 30 microCuries, any therapeutic dosage of unsealed byproduct material or any therapeutic dose of radiation from byproduct material.

Attachment 2

USAF RADIOISOTOPE COMMITTEE

A2.1. USAF Radioisotope Committee (RIC) Charter. The RIC is responsible for providing regulatory oversight for the use of RAM by USAF organizations except weapons related materials falling under Section 91(a) or 91(b) of the AEA. 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 and instructions.

A2.2. RIC Committee Members, Organization, and Responsibilities.

A2.2.1. Table A.2. lists 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.

A2.2.2. RIC Secretariat (RICS): Organization, scheduling and planning of the RIC meeting, and generation of meeting minutes.

A2.2.3. 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.

A2.2.4. RIC Members: Ensure either they or their alternates attend scheduled RIC meetings and are prepared to address agenda items.

Table A2.1. RIC Membership and Responsibilities.

Office	RIC Membership			Responsibilities
	Chair	Voting	Alternate	
Deputy Assistant Secretary of the Air Force, Environment, Safety and Occupational Health, SAF/IEE		1	1	Delegates authority for execution of the MML to AFMSA/SG3.
Assistant Secretary of the Air Force for Acquisition, SAF/AQ		1	1	Ensures that the RICS approves the acquisition of new systems and upgrades that contain RAM prior to fielding USAF-wide.
Surgeon General, USAF/SG				Holder of the MML. Reference **paragraph 2.3** regarding appointments.
Deputy Chief of Staff for Logistics, Installations, and Mission Support, USAF/A4/7		1	1	Represents logistics, maintenance, CE, environmental issues and security forces functions to the RIC.
Assistant Surgeon General, Health Care Operations, AF/SG3	1	1	1	Responsible for the execution of the conditions of the MML and for the RIC.
Air Force Inspection Agency, Medical Operations Directorate, AFIA/SG		1		Provides the RIC with quarterly and annual summaries of the status of permit compliance inspections, results of completed inspections and trends in violations.
HQ AFSC/SE		1		Advises on RAM control issues relative to 91(a) and 91(b) material within the USAF.

Office	RIC Membership			Responsibilities
	Chair	Voting	Alternate	
Director of Civil Law, Air Force Legal Operations Agency, AFLOA/JAC		1	1	Coordinates on legal issues about RAM, including internal and external enforcement matters, and acts as counsel to the RIC.
USAF School of Aerospace Medicine (USAFSAM/OEH)		1	1	Provides the RIC quarterly and annual summaries of occupational radiation exposure from RAM.
				Provides technical and on-site health physics support to the RIC and AFSC/SEW as required to prevent, investigate and mitigate human or environmental exposures to all RAM.
Air Force Medical Support Agency (AFMSA/SG3PB)		1	1	Provides technical support from Bioenvironmental Engineering to the RIC.
Health Physics Consultant to the SG		1		Provides operational health physics support to the RIC, manages and executes the USAF MML for the RIC as Chief, RICS and is the alternate RIC Chair.
Medical Physics Consultant to the SG		1		Provides medical physics support to the RIC.
Commander, Air Force Materiel Command, AFMC/CC		2		One voting member is from AFMC/SG and one is from the AFRRAD Office.
				Through AFRRAD, provides quarterly summaries of radioactive waste disposal, decontamination and decommissioning activities to the RIC or AFSC/SEW, as appropriate. Provides the RICS monthly summaries of material received for disposal IAW 10 CFR 31, as requested by RICS.

A2.3. Business Practices.

A2.3.1. 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.

A2.3.1.1. 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 schedule by the RICS.

A2.3.1.2. 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.

A2.3.1.3. 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.

A2.3.1.4. A quorum for a meeting is established by having a least one-half of the voting members present.

A2.3.2. Meetings will be conducted IAW 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.

A2.3.3. Motions and Voting.

A2.3.3.1. Only members and guests recognized by the Chair may speak.

A2.3.3.2. Only voting members may vote on an issue.

A2.3.3.3. 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:

A2.3.3.3.1. There can be a vote on the motion. In the event of a tie, the Chair casts the deciding vote; or

A2.3.3.3.2. 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

A2.3.3.3.3. 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

A2.3.3.3.4. There may be no action on the motion--therefore it becomes old business at a future meeting.

A2.3.3.4. 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.

A2.4. Disagreement Resolution. The RIC Chair is responsible for maintaining order. On procedural questions, the Chair's ruling will be final.

A2.5. Record Keeping.

A2.5.1. The RICS will ensure that appropriate files for each meeting are maintained IAW 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.

A2.5.2. RICS will maintain correspondence, permit actions, NOVs or enforcement actions, and other applicable materials during the quarter to ensure a complete agenda.

A2.5.3. Records of RIC meetings, to include agendas, presentations, and meeting minutes, shall be kept for the duration of existence of the MML.

Attachment 3

MANAGING GENERALLY LICENSED DEVICES

A3.1. Generally Licensed Devices (GLDs). The NRC or Agreement State issues a general license to acquire, receive, use, store or transfer certain devices that contain RAM which have been manufactured, tested and labeled by the manufacturer IAW the specifications contained in a specific license issued to the manufacturer by the NRC or an Agreement State. The following devices are labeled as being generally licensed:

A3.1.1. 10 CFR 31.3, *Certain Devices and Equipment*: These are devices that are covered under 10 CFR 31.3 and include static elimination devices consisting of not more than 500 microCuries of Polonium-210 per device; ion generating tubes consisting of not more than 500 microCuries of Polonium-210; or not more than 50 milliCuries of Hydrogen-3 (tritium).

A3.1.2. 10 CFR 31.5, *Certain Detecting, Measuring and Controlling Devices and Devices Producing Light*: These are devices covered under 10 CFR 31.5, and include devices to detect and measure something, or produce light or an ionized atmosphere. Devices include Ionscans, tritium exit signs, IBIS indicators, and some chemical agent detectors (e.g., APD-2000). **Exception:** GLDs under 10 CFR 31.5 that contain at least 10 mCi of Cesium-137, 0.10 mCi of Strontium-90, 1.0 mCi of Cobalt-60, or 1.0 mCi of Americium- 241, 0.10 mCi of Radium-226 or any other transuranic shall be specifically licensed, i.e., require a USAF RAM permit Reference **Attachment 4**.

A3.1.3. 10 CFR 31.10, *Sr-90 Ice Detection Device*s. These include devices that contain no more than 50 µCi of Strontium-90.

A3.1.4. 10 CFR 31.11, *In-Vitro Clinical Testing*. These include prepackaged kits containing not more than 10 µCi Iodine-125; 10 µCi Iodine–131; 10 µCi Carbon-14; 50 µCi Hydrogen-3; 20 µCi Iron-59; and 10 µCi Selenium-75. USAF organizations that want to use RAM specified under 10 CFR 31.11 shall:

A3.1.4.1. Possess an existing USAF RAM permit that authorizes medical use of RAM. If a permit does not exist, apply IAW **paragraph 3.4** and **Attachment 4**.

A3.1.4.2. Conduct and maintain a record of quarterly radiation swipe surveys when using radionuclides other than Hydrogen-3 and Carbon-14.

A3.2. Acquisition of GLDs. GLDs should 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.

A3.2.1. **(Added-MOODYAFB)** Units who wish to purchase GLDs must receive written permission from the IRSO prior to purchase.

A3.3. 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. In addition:

A3.3.1. All USAF units will ensure that the IRSO enters all GLDs (e.g., radioluminescent exit signs, some chemical agent monitors) into the RAMMIS database and keeps the RAMMIS database current.

A3.3.2. Units with GLDs that do not possess a USAF RAM permit will appoint a responsible individual to ensure that the requirements of the SSDR are met and that the RAMMIS inventory is current. For units with issued permits, the PRSO will be the responsible individual. The responsible individual shall:

A3.3.2.1. Provide the IRSO an updated inventory every six months so that the IRSO can input the data into RAMMIS.

A3.3.2.2. Preserve all labels affixed to the device and ensure all the instructions are followed.

A3.3.2.3. If required by the SSDR, the device shall be tested for leakage, and proper operation of any on-off mechanism or indicator, if any, at no longer than 6 month intervals, or as specified by the SSDR. All leak tests will be coordinated with the IRSO so that appropriate protocols and materials are used. The following do not require leak tests:

A3.3.2.3.1. Devices containing only Krypton-85.

A3.3.2.3.2. Devices containing only Hydrogen-3.

A3.3.2.3.3. Devices containing not more than 100 µCi of other beta and/or gamma emitter or 10 µCi of an alpha emitter, and devices held in their initial shipping container prior to installation.

A3.3.2.3.4. Leak tests are waived for devices kept in storage for no longer than two years, at which time a leak test is required before return to storage. However, devices retrieved from storage shall be tested for leakage before being put in use if over six months have elapsed since the last test.

A3.3.3. 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. Defects shall be reported to the RIC IAW 10 CFR 21.

A3.3.4. Units shall not transfer GLDs to entities outside of the installation, unless the entity possesses a specific license for the item(s). Movement of GLDs from one unit, on the same installation to another, does not require the gaining unit to possess a USAF RAM permit. All transfers of GLDs shall be coordinated by the IRSO.

A3.3.4.1. Inventories must be updated in RAMMIS to reflect the transfer or movement. Report transfer of generally licensed material to the RICS with the information required by the NRC in 10 CFR 31.5, *Certain Detecting, Measuring, Gauging or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere* and provide a copy of the SSDR to the gaining unit. The gaining unit shall provide verification of receipt, to include serial numbers, to the losing unit

A3.3.4.2. A leak test and shutter test, if required by the SSDR, must be performed prior to transferring the device and shipping procedures must be IAW 49 CFR and this instruction.

A3.3.4.3. GLDs shall be properly disposed of IAW **Attachment 10**. The AFRRAD shall report receipt of GLDs to the RICS IAW permit conditions. No GLDs shall be transferred to the Defense Reutilization Management Office (DRMO) for disposal.

A3.3.4.4. **(Added-MOODYAFB)** All shipping requests must be approved by the IRSO prior to shipment. The IRSO will ensure all 49 CFR and 10 CFR shipping requirements are met, to include swipe samples or package survey, if necessary.

A3.3.5. The appointed individual shall report any incidents, thefts or loss of GLDs to the IRSO. IRSO shall comply with the reporting requirements of **Attachment 11**.

A3.3.6. The IRSO shall update in RAMMIS, all relevant GLD use information, including changes to the storage location, the responsible unit, and current address.

Attachment 4

APPLYING FOR A USAF RADIOACTIVE MATERIAL PERMIT

A4.1. Regulatory control of radioactive material in the USAF is accomplished as follows:

A4.1.1. Exempted: RAM in items obtained, manufactured, and distributed by a licensee having a specific NRC license authorizing exempt distribution or otherwise exempted by NRC IAW 10 CFR 30.71 is not controlled. Examples include:

A4.1.1.1. Electron tubes, spark gaps, timepieces covered under 10 CFR 30.15.

A4.1.1.2. Lensatic compasses covered under 10 CFR 30.19.

A4.1.1.3. Smoke detectors specified in 10 CFR 30.20.

A4.1.1.4. Thorium lantern mantles and welding rods specified in 10 CFR 40.13. **Note:** Some items, such as magnesium-thorium components, may be exempt from licensing/permitting but not exempt from disposal requirements. These items shall be properly identified as containing RAM and assigned a Hazardous Characteristic Code (A1, A2, or A3).

A4.1.2. Controlled by Technical Order: Some RAM items are controlled by T.O.s or AFIs.

A4.1.3. A Template Permit: A template permit is issued for sealed source items posing minimal radiological risk and having standardized conditions of use.

A4.1.4. A Non-Template Permit: A non-template permit is issued for large scope RAM use situations that require custom applications and many conditions and requirements to assure safe use.

A4.1.5. A General License: A general license issued by the NRC (reference **Attachment 3**).

A4.2. Example Items Controlled by Technical Order, Air Force Instructions or General License:

A4.2.1. Less than 100 dials, gauges, buttons or other RAM contained on static display aircraft or other military items containing Radium-226 (10 CFR 31.12).

A4.2.2. Airframe or engine components constructed of magnesium-thorium alloy or nickel-thorium alloy (individual system technical orders, 10 CFR 40.13 (c) (8)).

A4.2.3. Thoriated optics (individual technical order, 10 CFR 40.13 (c) (7)).

A4.2.4. Airframe counterweights constructed of DU (individual system technical orders, 10 CFR 40.13 (c) (5)).

A4.2.5. Individual storage areas for 30 mm API munitions having DU penetrators are controlled by T.O. and a central distribution permit.

A4.2.6. Tritium exit signs (10 CFR 31.5 – but prohibited by this instruction from USAF acquisition).

A4.3. Template Permits.

A4.3.1. Template permitted items are generally commodity items that pose low health risks but still require strict accountability. Common items include:

A4.3.1.1. M8A1 Chemical Agent Detectors (CADs) (250 mCi of Americium-241), Chemical Agent Monitors (CAMs) or Improved Chemical Agent Monitors (ICAMs) (15 mCi of Nickel-63), Automatic Chemical Agent Detector and Alarm (ACADA) (two, 15 mCi Nickel-63 sources).

A4.3.1.2. In-flight Blade Integrity System (IBIS) indicators (100 or 500 mCi of Strontium-90).

A4.3.1.3. LANTIRN/SNIPER Pods (two, 4-6 mCi Americium-241 sources).

A4.3.1.4. Niton XRF Lead Paint Analyzers (any amount of Cadmium-109).

A4.3.2. The list of template permitted items will change periodically. The AFMSA web site, **https://kx.afms.mil/rad_prot**/ should be consulted for the most current list of template permitted items and the standardized "Request for Template Permit Action" form and application instructions. Do not alter the form.

A4.3.3. Applying for or renewing a template permit is accomplished through completion of the "Request for Template Permit Action" form. Applications or amendments and associated training documentation should be forwarded to the RICS at least one month, but no more than three months, prior to the receipt of material or requested change, respectively. Once received, a renewed or amended permit will be provided to the Permittee. **Note:** For renewals only, if PRSO qualifications are already on file, they need not be resent.

A4.4. Non-Template Permits. RAM uses not identified in **paragraph A4.3.1** require a non-template permit. Common activities and practices performed under a non-template permit include: nuclear medicine, radiation oncology, research and development, training institutions, waste processing, irradiator operations, and significant remediation activities at sites that were historically identified as being contaminated with byproduct, source, SNM or NARM, to include radium. Before any effort is undertaken by organizations, contact the RICS for guidance on permitting requirements.

A4.4.1. Applying for Non-Template Permits: An NRC Form 313, *Application for Material License*, shall be completed and shall include a detailed description of the radiation protection program for the intended practice. Guidance for application preparations can be found in the NRC NUREG 1556-series at **http://www.nrc.gov/reading-rm/doc-collections**/. Contact the RICS for guidance on permitting requirements for remediation activities (reference **Attachment 9**). Certain permitted activities meeting the criteria of 10 CFR 30.32(i) and 10 CFR 30.35(a) shall include, respectively:

A4.4.1.1. An emergency response plan complying with the criteria prescribed in 10 CFR 30.32(i)-(xii). **Note:** This is a rare requirement for USAF Permittees.

A4.4.1.2. A decommissioning financial assurance (cost estimate and funding) plan to satisfy the requirements of 10 CFR 30.35, 10 CFR 40.36, or 10 CFR 70.25. The RICS can assist in developing your cost estimate.

A4.4.2. Amending a Non-Template Permit**:** Send requests to amend permitted activities, conditions, or specific terms at least three (3) months, but not more than six (6) months, prior to the desired date of implementation to the RICS. The memo should be as detailed as possible, especially if it includes the changing of procedures that could affect exposure levels to staff or members of the general public. Details must include: source device, amount, type,

manufacturer, source or device use, locations of the source, exposure levels (if they have changed), and any new procedures. Refer to applicable NUREG 1556 volumes for additional information.

A4.4.3. Renewal of a Non-Template Permit:

A4.4.3.1. Renewal applications for non-template permits must be received at least three (3) months, but not more than six (6) months, prior to the expiration of the permit. Once a permit renewal application is received, a "Deemed Timely Filed" memo will be provided prior to the permit expiration date.

A4.4.3.2. Renewal packages must be completed without reference to earlier permit documentation.

A4.4.4. While a permit is in Deemed Timely Filed status, requirements and conditions of the expiring permit remain in full force and effect. Contact the RICS when immediate changes to permit conditions are required.

A4.5. Routing and Timelines for Permit Actions.

A4.5.1. Route all permit requests (new, amendments, renewal and terminations) through the host IRSO to the RICS, with a courtesy copy to the MAJCOM Bioenvironmental Engineer.

A4.5.2. Template permit requests can be faxed or a scanned and e-mailed to the RICS.

A4.5.3. Send template permit requests so they arrive at the RICS at least 30 calendar days prior to the date the request is to be implemented.

A4.5.4. Send non-template permit requests to the RICS at least 90 days prior to the date the request is to be implemented. Submit at least a year in advance if the use involves new construction. Typical uses requiring extended processing time will include:

A4.5.4.1. New research or laboratory facilities;

A4.5.4.2. Nuclear medicine programs;

A4.5.4.3. Major industrial operations;

A4.5.4.4. Multi-curie irradiators or radiographic sources;

A4.5.4.5. Firing ranges using DU munitions; and/or

A4.5.4.6. Remediation activities.

A4.5.5. The RICS will provide a copy of issued permits to AFIA/SG.

Attachment 5

MINIMUM TRAINING AND EXPERIENCE REQUIRED FOR PRSO AND PERMIT INSTRUCTORS OF MANUFACTURER'S DEVICE TRAINING

A5.1. Required Training for PRSOs. The training required for PRSOs is listed below for specific permit types**.** PRSOs must have formal training commensurate with the type and quantity of RAM possessed. All RSO training curricula must be approved by the RICS. Specific requirements for a RICS approved 40 hour PRSO course are listed in **paragraph A5.3**. A summary of requirements are listed in **Table A5.1**.

A5.1.1. Portable Gauges: PRSOs shall have training commensurate with guidance in NUREG 1556, Volume 1, to include regulatory requirements of the NRC for RAM accounting, reporting, transferring, shipping, disposing of material, servicing and leak testing of the specific gauge, if required.

A5.1.1.1. Gauges Covered by Template Permits (e.g., CAMs, CADs, LANTIRN/SNIPER pods, NITON XRF meters): PRSOs must have successfully completed a RICS approved PRSO training course.

A5.1.1.2. Moisture Density Gauges (e.g., Troxler density gauges): PRSOs must have completed (1) either 40 hours of RICS approved RSO training that encompasses the requirements in **paragraph A5.3** or the manufacturer's RSO training, and (2) the manufacturer's device training, emphasizing source security, accountability and ALARA for workers and the public.

A5.1.1.3. Cargo and Vehicle Inspection Systems: PRSOs must have completed 40 hours of RICS approved RSO training that encompasses the requirements in **paragraph A5.3** and the manufacturer's device training.

A5.1.2. Fixed Gauges: PRSOs must have successfully completed 40 hours of RICS approved PRSO training, commensurate with guidance in NUREG 1556, Volume 4, including regulatory requirements of the NRC for RAM accounting, reporting, transferring, shipping and disposing of material and servicing and leak testing and manufacturer's training (if required by the manufacturer's SSDR or USAF RAM permit).

A5.1.3. Personnel Security Screening Systems: PRSOs must have successfully completed a RICS approved PRSO training course and the manufacturer's device training.

A5.1.4. Academic, Research and Development, and Other Permits of Limited Scope: PRSOs must have successfully completed 40 hours of RICS approved PRSO training, and have additional training and experience relevant to the permitted material and commensurate with guidance in NUREG 1556, Volume 7.

A5.1.5. Broad Scope Permits: PRSOs should have training and experience as specified in NUREG 1556, Volume 7, and approved by the RICS. Training and experience must be relative to the RAM and the specific applications approved in the permit.

A5.1.6. Medical Permits: PRSOs must have training as specified in 10 CFR 35 and NUREG 1556, Volume 9, Rev 2.

A5.1.7. Decommissioning and Decontamination Permits: PRSO should take MARSSIM or MARSAME course, as appropriate.

A5.1.8. Other Permits: PRSO qualifications for all other permits shall be approved by the RICS on a case-by-case basis. General criteria used by the RICS includes the education, training and experience of the individual, regulatory requirements specified in 10 CFR (if any) and guidance provided in the applicable NUREG 1556 Volume for the type of permitted material. **Note**: Training for IRSOs and URSOs is listed in AFI 48-148.

A5.2. 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. All manufacturer's device instructor training curricula and permit device training instructors shall be approved by the RICS. A summary of requirements is listed in **Table 6.2**.

A5.2.1. Moisture Density Gauges: Instructors must have successfully completed:

A5.2.1.1. One year as a full time approved authorized user and have a good inspection performance history; and

A5.2.1.2. Manufacturer's RSO training; and

A5.2.1.3. Manufacturer's instructor's training.

A5.2.2. Cargo and Vehicle Inspection Systems: Instructors must have successfully completed:

A5.2.2.1. One year as a full time approved authorized user and have a good inspection performance history; and

A5.2.2.2. Forty (40) hours of RICS approved PRSO training that encompasses the requirements in **paragraph A5.3**; and

A5.2.2.3. Manufacturer's instructor's training.

A5.2.3. Personnel Security Screening Systems: Instructors must have successfully completed:

A5.2.3.1. One year as a full time approved authorized user and have a good inspection performance history; and

A5.2.3.2. A RICS approved PRSO training course; and

A5.2.3.3. Manufacturer's instructor's training.

A5.2.4. Other Permitted Devices: Instructor qualifications for all other permitted devices shall be approved by the RICS on a case-by-case basis.

A5.3. 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:

A5.3.1. Radiation safety topics:

A5.3.1.1. Radiation vs. contamination,

A5.3.1.2. Internal vs. external exposure and dose equivalents,

A5.3.1.3. Biological effects of radiation,

A5.3.1.4. Types and hazards associated with RAM possessed,

A5.3.1.5. ALARA concept,

A5.3.1.6. Time, distance, and shielding to minimize exposure,

A5.3.1.7. Sealed source location within the gauge,

A5.3.1.8. "Lessons learned" from prior events involving permitted material, and

A5.3.1.9. Inspection by regulatory agencies.

A5.3.2. Regulatory requirements for the following topics:

A5.3.2.1. Applicable regulations,

A5.3.2.2. License/Permit conditions, amendments, renewals,

A5.3.2.3. Locations of use and storage of RAM,

A5.3.2.4. Material control and accountability,

A5.3.2.5. Annual audit of radiation safety program,

A5.3.2.6. Transfer and disposal,

A5.3.2.7. Record keeping,

A5.3.2.8. Managing incidents/mishaps,

A5.3.2.9. Recognition and assurance of radiation warning signs; visibility and legibility,

A5.3.2.10. Requirement for complete and accurate information,

A5.3.2.11. Employee protection, and

A5.3.2.12. Deliberate misconduct.

A5.3.3. 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.

Table A5.1. PRSO Training Requirements.

PRSO Training Requirements							
Permit Type[6]	**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 CFR33 and NUREG 1556 V 11**	**Requirements in 10 CFR35 and NUREG 1556 V 9, Rev 2**	**Increased Controls Training as defined by the RICS**
Template Permits		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[3,4]						X	
Increased Controls[5]							X

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

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

[3]Medical PRSO requires approved radiation safety training be given no later than 7 years prior to being appointed as a medical PRSO. Medical permit holders need 25 hours of continuing education training in radiation safety and RAM control either through courses provided by professional organizations for continuing education or as approved by the RICS.

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

[5] Increased Control Training is in addition to other training required for the specific permit type.

[6]Contact the RICS for the minimum training requirements for PRSOs responsible for multiple permit types.

Table A5.2. Permit Instructor for Device Training.

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

Attachment 6

NOTICES TO WORKERS

A6.1. Posting Supplemental Notice. Each Permittee shall post a supplemental notice that contains, at a minimum, the information given on the sample notice of this attachment. **Note**: Validate current AFMSA/SG3PB contact information prior to posting this Supplementary Notice.

USAF SUPPLEMENTARY NOTICE TO NRC FORM 3

US Air Force Radioactive Material Permit No. _____[1] issued under the Air Force's Nuclear Regulatory Commission Master Materials License No. 42-23539-01AFP authorizes use of radioactive materials at this location. Contact _____[2] to see a copy of the permit, amendments and supporting documents including Title 10 Code of Federal Regulations Parts 19, 20 and 21, AFI 40-201, and all operating procedures applicable to permitted activities. The Air Force Master Materials License, amendments, and supporting application are maintained by the USAF Radioisotope Committee Secretariat. These documents are available for viewing at the USAF Radioisotope Committee Secretariat (RICS) office. The RICS may be contacted by writing to AFMSA / SG3PB, 1500 Wilson Blvd, Suite 1600, Arlington, VA 22209, calling DSN 425-6308, Commercial (703) 588-6308, or, for after-hours emergencies, through the Andrews Regional Command Post at 301-981-5058; DSN 858-5058.

SECTION 206 OF THE ENERGY REORGANIZATION ACT OF 1974

Notification to Commission of Noncompliance

Any individual director, or responsible officer of a firm constructing, owning, operating, or supplying the components of any facility or activity that is licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954 as amended (42 U.S.C. 2011 et seq.), or pursuant to this chapter, who obtains information reasonably indicating that such facility or activity or basic components supplied to such facility or activity -

(1) fails to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order, or license of the Commission relating to substantial safety hazards, or

(2) contains a defect that could create a substantial safety hazard, as defined by regulations that the Commission shall promulgate, shall immediately notify the Commission of such failure to comply, of such defect, unless such person has actual knowledge that the Commission has been adequately informed of such defect or failure to comply.

A6.1.1. **Penalty for failure to notify.** Any person who knowingly and consciously fails to provide the notice required by Section 206 of the Energy Reorganization Act of 1974 shall be

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[1] Enter the applicable permit number or numbers

[2] Enter the individual, organizational office symbol, address, and telephone extension

subject to a civil penalty in an amount equal to the amount provided by Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282).

A6.1.2. **Posting of requirements.** The requirements of this section shall be prominently posted on the premises of any facility licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).

A6.1.3. **Inspection and enforcement.** The Commission is authorized to conduct such reasonable inspections and other enforcement activities as needed to insure compliance with the provisions of this section.

SOURCE (Pub. L. 93-438, Title II, Sec. 206, Oct. 11, 1974, 88 Stat. 1246.)

Attachment 7

SUMMARY OF RECORDS RETENTION REQUIREMENTS

A7.1. Refer to the applicable CFR to obtain technical details on records retention. This attachment serves as a general guideline for regulatory requirements. All records must remain legible throughout the retention period. Records must include all pertinent information, such as stamps, initials and signatures (10 CFR 20.2110). Archive all documents with the base safety office/environmental management office. Coordinate with the RICS on disposition of records requiring permanent archival storage at permit termination. Records creation, maintenance, use, and disposition must adhere to requirements found in AFI 33-322, *Records Management Program*; AFMAN 33-363, *Management of Records*, and AFI 33-364, *Records Disposition: Procedures and Responsibilities*.

Table A7.1. Record Retention Requirements.

Required record	Record Maintenance	Notes	CFR Reference
Provisions of radiation protection program	Until permit termination		10 CFR Part 20.2102(b)
Annual audit, reviews of radiation protection program	3 years after record made		10 CFR Part 20.2102(b)
Surveys, inventories and calibrations	3 years after record is made		10 CFR Part 20.2103(a)
Leak tests	3 years after test was conducted		10 CFR 20.2102
External dose determination surveys	Until permit termination	Must use rem, rad, Ci IAW 10 CFR Part 20.2101	10 CFR Part 20.2103 (b) 1
Internal dose determination surveys	Until permit termination	Must use rem, rad, Ci IAW 10 CFR Part 20.2101	10 CFR Part 20.2103 (b) 2
Air sampling, surveys and bioassay	Until permit termination	For respiratory protection program	10 CFR Part 20.2103 (b) 3
Effluent dose measurements and calculations	Until permit termination		10 CFR Part 20.2103 (b) 4
NRC Form 4	Until permit termination	Dose estimate of prior occupational exposure	10 CFR Part 20.2104 (f)
Planned special exposures	Until permit termination		10 CFR Part 20.2105 (b)
Dosimetry records	Until permit termination. NOTE: USAFSAM maintains MRER records indefinitely.	Includes DDE, SDE, LDE, embryo fetus and pregnancy declaration	10 CFR Part 20.2106

Required record	Record Maintenance	Notes	CFR Reference
Demonstration of dose limits to public	Until permit termination		10 CFR Part 20.2107
Accident and incident reports and records	Until termination of the MML		10 CFR 30.51(b) and (c)
Decommissioning records	Until site released for unrestricted use. Permanent archival storage is required for large decommissioning efforts that are compliant with NUREG 1757, Volume 3	Can transfer to new permit. Include records of spills, as built drawings, restricted areas, cost estimates, etc.	10 CFR 30.35 (g) 10 CFR 30.36 10 CFR 30.51
Receipt of permitted material	As long as possessed,	Unless otherwise specified.	10 CFR 30.51 (a) (1)
Transfer of permitted material	Three years after transfer	Unless otherwise specified.	10 CFR 30.51 (a) (2)
Disposal of permitted material	Until permit termination or three years, whichever is longer	Disposal records of significant magnitude or cost (e.g., site decommissioning waste): Permanent Archival Record.	10 CFR Part 20.2108 10 CFR 30.51 (a)(3)
Records relating to the treatment and/or disposition of low level RAM and mixed waste	100 years after inactivation of facility	Prescribed retention period for specified environmental planning documents.	Rule 10, Table 91-2, AFM 37-139
Other records (not otherwise specified)	Until permit termination	If no specified retention	10 CFR Part 30.51(b)
The permit of a transferee (the organization receiving permitted material)	Prior to transfer of RAM	No specific retention after transfer given, possibly 3 yrs, reference 10 CFR Part 30.51	10 CFR Part 30.41 (c) and (d)(1)
Sealed source leak tests and on/off mechanism and indicator	3 years after last leak check / mechanism check or till transfer or disposal	Removal, installation, shielding or containment	10 CFR Part 31.5 (c) (4) i. and ii.
Records of shipment of RAM shipped under 10 CFR Part 71	3 years after shipment	Does not include RAM exemption under 10 CFR Part 71.10 (low level, such as less than type A)	10 CFR Part 71.91 (a)

Required record	Record Maintenance	Notes	CFR Reference
Packaging qualified under 10 CFR Part 71 certification	3 years after life of package	Packages under 10 CFR Part 71.85	10 CFR Part 71.91 (c)
Material purchased for packages conforms	Life of package	Packages under 10 CFR Part 71	10 CFR Part 71.115(b)
Transportation quality assurance records for shipping	3 years past activity for which Transportation QA program written	Also 3 years after superseded	10 CFR Part 71.135
IP-1 package certification	1 year after last shipment		49 CFR Part 173.411(c)
7A package certification	1 year after shipment		49 CFR Part 173.415(a)
Records concerning historical radioactive waste sites	Until full remediation of site or 50 years from the time of generation		CERCLA (42 U.S.C. s/s 9601 et seq. (1980))

Table A7.2. Medical Requirements.

Required record	Record Maintenance	Notes	CFR Reference
Actions taken by permittee management	5 years		10 CFR 35.2024(a)
Duties and responsibilities of RSO	Duration of permit		10 CFR 35.2025(b)
Radiation protection program changes	5 years		10 CFR 35.2026
Written directives	3 years		10 CFR 35.2040
Procedures for administrations requiring written directives	Duration of permit		10 CFR 35.2041
Medical events	Duration of permit	Not specified in 10 CFR, but should be retained	AFI 40-201
Calibrations of instruments used to measure activity of unsealed byproduct material	3 years		10 CFR 35.2060
Radiation survey instrument calibrations	3 years		10 CFR 35.2061
Dosages of unsealed byproduct material for medical use	3 years		10 CFR 35.2063(a)
Leak tests and inventory of sealed sources and brachytherapy sources	3 years	Decrease from old 10 CFR 35.	10 CFR 35.2067 (a) and (b)
Surveys of ambient radiation	3 years		10 CFR 35.2070

exposure rates where unsealed byproduct material was used or administered			
Basis for authorizing release of patients	3 years		10 CFR 35.2075(a)
Instructions provided to a breast-feeding female	3 years		10 CFR 35.2075(b)
Release of individuals containing unsealed byproduct material or implants containing byproduct material	3 years		10 CFR 35.2075(c)
Letters authorizing use of byproduct material a client's address for mobile services	3 years	After the last provision of service	10 CFR 35.2080(a)
Radiation surveys for mobile medical services	3 years		10 CFR 35.2080(b)
Decay-in-storage records	3 years		10 CFR 35.2092
Molybdenum-99 concentrations	3 years		10 CFR 35.2204
Safety instructions for the use of unsealed byproduct material requiring a written directive, manual brachytherapy; and remote after-loader, teletherapy, and gamma stereotactic radiosurgery units	3 years		10 CFR 35.2310
Records of surveys after brachytherapy source implant and removal	3 years		10 CFR 35.2404
Brachytherapy source accountability	3 years		10 CFR 35.2406(a)
Calibration measurements of brachytherapy sources	3 years		10 CFR 35.2432(a)
Records concerning remote after-loaders, teletherapy, and gamma stereotactic radiosurgery units	Between 3 years and duration of permit	Unique record keeping requirements for these therapy modalities	Review 10 CFR 35.2600 Series for records requirements

Attachment 8

INCREASED CONTROLS AND PROTECTION OF INFORMATION

A8.1. Permittees in possession of material exceeding **Table A8.1** quantities are required to comply with additional precautions for managing information that pertains to their permitted material, to include its storage and transport. Permittees shall implement the guidance provided in NRC regulatory issue summary (RIS) 2005-31, *Control of Security-Related Sensitive Unclassified Non-safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation for the Use of Source, Byproduct, and Special Nuclear Material*, available at: **http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues**/.

Table A8.1. Radionuclide Screening Threshold Values.

Radionuclide	Threshold Values[1] (TBq)	Threshold Values[2] (Ci)
Am-241	0.06	1.6
Am-241/Be	0.06	1.6
Cf-252	0.02	0.54
Cm-244	0.05	1.4
Co-60	0.03	0.81
Cs-137	0.1	2.7
Gd-153	1	27
Ir-192	0.08	2.2
Pm-147	40	1100
Pu-238	0.06	1.6
Pu-239/Be	0.06	1.6
Se-75	0.407	11
Sr-90 (Y-90)	0.2	5.4
Tm-170	1	27
Yb-169	20	540
Combinations of RAM listed above[3]	0.3	8.1
	See footnote below[4]	

[1]When multiple isotopes of concern are present compliance is determined by ensuring that the sum of the ratio of the amount of an isotope on hand to the amount of the level above for each isotope on hand needs to be less than or equal to 1.
[2]TBq values are the regulatory standard and the curie values are rounded to two significant figures.
[3]Radioactive materials are to be considered collocated if breaching a common physical security barrier (e.g., a locked door at the entrance to a storage room) would allow access to the RAM or devices containing the RAM. For sources installed in devices, each device should be considered a separate location.
[4]If several radionuclides are aggregated, the sum of the ratios of the activity of each source, I of radio-nuclide, n, A (i, n), to the quantity of concern for radionuclide n, Q (n), listed for that radionuclide exceeds one. [(aggregated source activity for radionuclide A) ÷ (quantity of concern

for radionuclide A)] + [(aggregated source activity for radionuclide B) ÷ (quantity of concern for radionuclide B)] + etc. >1.

A8.2. Permittees possessing, or who are required to possess, RAM in quantities exceeding the amounts in **Table A8.2** (or aggregation of material such that the quantity exceeds **Table A8.2**) are required to implement increased controls for both these sources and information related to these sources. Permittees shall coordinate directly with the RICS for increased control requirements.

A8.2.1. Additional requirements are also imposed for Permittees who desire to transport RAM in quantities in excess of 100 times the levels found in **Table A8.2**. Permittees shall coordinate directly with the RICS at least 120 days prior to moving material that exceeds the levels found in **Table A8.2**.

Table A8.2. Radionuclide Quantities of Concern.

Radioactive material	Quantity of Concern[1] (TBq)	Quantity of Concern[2] (Ci)
Actinium-227	0.2	5.4
Americium-241	0.6	16
Americium-241/Be	0.6	16
Californium-252	0.2	5.4
Cobalt-60	0.3	8.1
Curium-244	0.5	14
Cesium-137	1	27
Gadolinium-153	10	270
Iridium-192	0.8	22
Plutonium-238	0.6	16
Plutonium-239/Be	0.6	16
Polonium-210	0.6	16
Promethium-147	400	11,000
Radium-226	0.4	11
Selenium-75	2	54
Strontium-90	10	270
Thorium-228	0.2	5.4
Thorium-229	0.2	5.4
Thulium-170	200	5,400
Ytterbium-169	3	81

Combinations of RAM listed above[3]	See footnote below[4]	

[1]The aggregate activity of multiple, collocated sources should be included when the total activity exceeds the quantity of concern.
[2]TBq values are the regulatory standard and the curie values are rounded to two significant figures.
[3]Radioactive materials are to be considered collocated if breaching a common physical security barrier (e.g., a locked door at the entrance to a storage room) would allow access to the RAM or devices containing the RAM. For sources installed in devices, each device should be considered a separate location.
[4]If several radionuclides are aggregated, the sum of the ratios of the activity of each source, I of radionuclide, n, A (i, n), to the quantity of concern for radionuclide n, Q (n), listed for that radionuclide exceeds one. [(aggregated source activity for radionuclide A) ÷ (quantity of concern for radionuclide A)] + [(aggregated source activity for radionuclide B) ÷ (quantity of concern for radionuclide B)] + etc.... >1

A8.3. Transportation. Quantities of materials subject to increased controls shall not be transported without the approval of the RICS 60 days prior to the anticipated movement.

A8.4. Trustworthiness. Permittees shall maintain current rosters of individuals deemed to be trustworthy IAW NRC Order EA-07-305 dated 5 December 2007. These rosters shall be submitted to the RICS on an annual basis.

A8.5. Aggregate Quantity Rule. Permittees who possess isotopes listed in the above tables shall maintain the documents to demonstrate compliance with the increased controls requirements. Particular attention will be paid to locations where multiple isotopes are stored to ensure that the aggregate quantity rule is not exceeded.

A8.6. Reporting. The Permittee shall submit the National Source Tracking Transaction Report to the RICS, no later than the close of business on the day of transfer, receipt, disassembly, or disposal of a nationally tracked Category 1 or 2 source, IAW 10 CFR 20.2207 (f). The RICS will finalize the report and submit it to the NRC, IAW 10 CFR 20.2207.

Attachment 9

RADIOACTIVE WASTE SITES RESPONSIBILITIES

A9.1. The RICS will:

A9.1.1. Conduct historical search of documents, maintained at AFMSA / SG3PB, pertaining to potential Radioactive Waste Sites (RWS) upon request.

A9.1.2. Issue *possession only* permits for those registered 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.

A9.1.3. Act as an advisor for the Remedial Project Manager (RPM) for engaging with and addressing regulatory authority issues.

A9.1.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans.

A9.1.5. Conduct site visits before and during remediation and/or decommissioning to ensure compliance with RICS approved procedures.

A9.1.6. Advise AFIA on inspection protocol for each USAF permitted RWS.

A9.1.7. Terminate *possession only* permits for those sites that satisfy unrestricted release criteria, IAW 10 CFR 20.1402.

A9.2. AFSC/SEW will:

A9.2.1. Conduct historical search of documents maintained by the AFSC pertaining to potential RWS containing 91(a) or 91 (b) materials upon request.

A9.2.2. 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.

A9.2.3. Provide weapons related information, as required, to assist the Remedial Project Manager (RPM), USAFSAM, AFRRAD, and AFMSA / SG3PB in determining the radionuclides present at a 91(b) site and act as an advisor for the RPM for engaging with and addressing regulatory authority issues.

A9.2.4. Review and approve decommissioning plans, final status surveys, and site-specific safety and health plans.

A9.2.5. Conduct site visits before and during remediation and/or decommissioning to ensure compliance with AFSC approved procedures.

A9.2.6. Terminate *possession only* permits for those sites that satisfy unrestricted release criteria.

A9.3. AF/A7CAN will:

A9.3.1. Maintain and manage the USAF Radioactive Waste Site Registry that is an identification and tracking database of all suspected and confirmed USAF RWS.

A9.3.1.1. Present RWS Area of Concern (AOC) documentation to the RICS for review and validation.

A9.3.1.2. Register RWS AOC 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.

A9.4. Air Force Center for Engineering and the Environment (AFCEE): AFCEE will confirm with USAF/A7CAN or AFSC/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 addition, USAFSAM must be consulted regarding the selection of a qualified, licensed contractor to perform the required work and waste disposal procedures and requirements.

A9.5. USAFSAM will:

A9.5.1. Consult with the RPM in evaluating information pertaining to a suspected RWS AOC.

A9.5.1.1. Will search historical records and coordinate with the RICS and AFSC/SEW for data collection and information validation.

A9.5.1.2. Will assess potential source terms and conduct a preliminary risk assessment to assist with a relative risk determination.

A9.5.2. Provide technical consultation and expert remediation guidance to the RPM.

A9.5.3. Provide guidance to the RPM and the Service Center (e.g., AFCEE) in selecting a qualified, licensed contractor for conducting required remediation activities.

A9.5.4. Assist RPM, Installation Judge Advocate General, and the RICS in determining cleanup levels and regulatory requirements.

A9.5.5. Conduct scoping surveys of suspected RWS AOCs as requested by the IRSO.

A9.5.6. Coordinate all installation level actions, analysis, reports and recommendations with the IRSO.

A9.5.7. Act as technical advisor to AFMSA / SG3PB, the RIC and AFSC/SEW.

A9.5.7.1. Provide technical review for all remediation plans, decommissioning plans, and final status surveys and provide recommendation of approval or disapproval to the RICS.

A9.5.7.2. 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).

A9.5.7.2.1. 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.

A9.5.8. Assist AF/A7CAN in maintaining site registry.

A9.6. The Base Civil Engineer will:

A9.6.1. Contact the IRSO upon the discovery or knowledge of a location that may contain radioactive waste (reference **Figure A9.1**).

A9.6.2. 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.

A9.6.3. Ensure that confirmed or suspected RWS that present a health or environmental risk have:

A9.6.3.1. Site access limited with a strong physical barrier such as a chain link fence or other measures, to prevent exposure of individuals to RAM. An inspection of physical barriers shall be conducted, at a minimum, annually.

A9.6.3.2. 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 IAW 10 CFR 20.

A9.6.3.3. Protect the soil surface against erosion using grasses or other ground covers (such as stone or gravel) to maintain site stability. Keep the site clear of deep-rooted shrubs and trees.

A9.6.4. Ensure no RWS is removed from the Installation Master Plan, transferred, released, or disregarded as a RWS until approved by the RICS. AFSC/SEW and/or USAFSAM are available for assistance.

A9.7. The Remedial Project Manager (RPM) will:

A9.7.1. Serve as the responsible agent for the overall management and execution of a RWS remediation project. The RPM will usually be a member of the installation environmental management office. See **Figure A9.1** **and** **Figure A9.2**

A9.7.2. Ensure a suspected area of concern is registered through their chain of command with the RWS registry maintained by AF/A7CAN.

A9.7.3. Contact the IRSO to request assistance from USAFSAM in conducting a scoping survey of a suspected RWS AOC.

A9.7.4. Develop and submit application for a possession-only permit to the IRSO once a registered site is identified as positive for radioactive waste or before intrusive investigation commences. **Note:** Classified sites or material will require special procedures. See **Figure A9.1**.

A9.7.5. In conjunction with the IRSO:

A9.7.5.1. Consult with USAFSAM and/or AFRRAD, as appropriate, for assistance in selecting a qualified contractor.

A9.7.5.2. Consult with USAFSAM, the RICS, and regulatory agencies in selecting appropriate cleanup levels for remediation.

A9.7.5.3. Request technical assistance from USAFSAM and the RICS in developing and executing decommissioning plans, site safety and health plans, and final status surveys.

A9.7.6. Apply MARSSIM and MARSAME survey methodologies in developing all investigation and remediation work plans.

A9.7.7. 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.

A9.7.8. Contact the IRSO to ensure that Installation Restoration Program eligible sites are entered in the AFRIMS database.

A9.8. The Installation Radiation Safety Officer (IRSO) will:

A9.8.1. 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.

A9.8.2. Serve as the interface between the installation and the RICS, AFSC/SEW and USAFSAM for all radiation related issues. 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.

A9.8.3. Submit application for a possession-only permit to the RICS once a registered site is identified as positive for radioactive waste or before intrusive investigation commences (reference **Figure A9.1**).

A9.8.4. Consult with USAFSAM and AFRRAD for assistance in selecting a qualified contractor.

A9.8.5. 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. Assures appropriate health physics oversight of the effort.

A9.8.6. Conduct annual surveys of radioactive waste sites to include:

A9.8.6.1. Visual inspection of the integrity of pipe caps or other closure devices that extend above ground.

A9.8.6.2. Conducts radiation surveys if there is an indication of intrusion or damage to the site.

A9.8.6.3. Ensure that fencing, security devices, and signage are in good order.

A9.8.7. Report a release or exposure to RAM IAW **Attachment 11** of this instruction.

A9.9. The Air Force Inspection Agency will:

A9.9.1. Inspect, as appropriate, sites permitted for either *possession only* or for decommissioning. If no permit has been issued, then no inspection by AFIA/SG is required.

A9.9.2. Will only inspect sites containing only 91(a) or 91(b) material as regulated by the AFSC upon request.

A9.10. The Installation Staff Judge Advocate General will:

A9.10.1. Assist the RPM, USAFSAM, AFRRAD, 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.

A9.10.2. Assist the RPM, USAFSAM, and the RICS in identifying statutory and regulatory requirements and determining appropriate cleanup levels.

Figure A9.1. Site Registration and Possession-Only Permit Issuance.

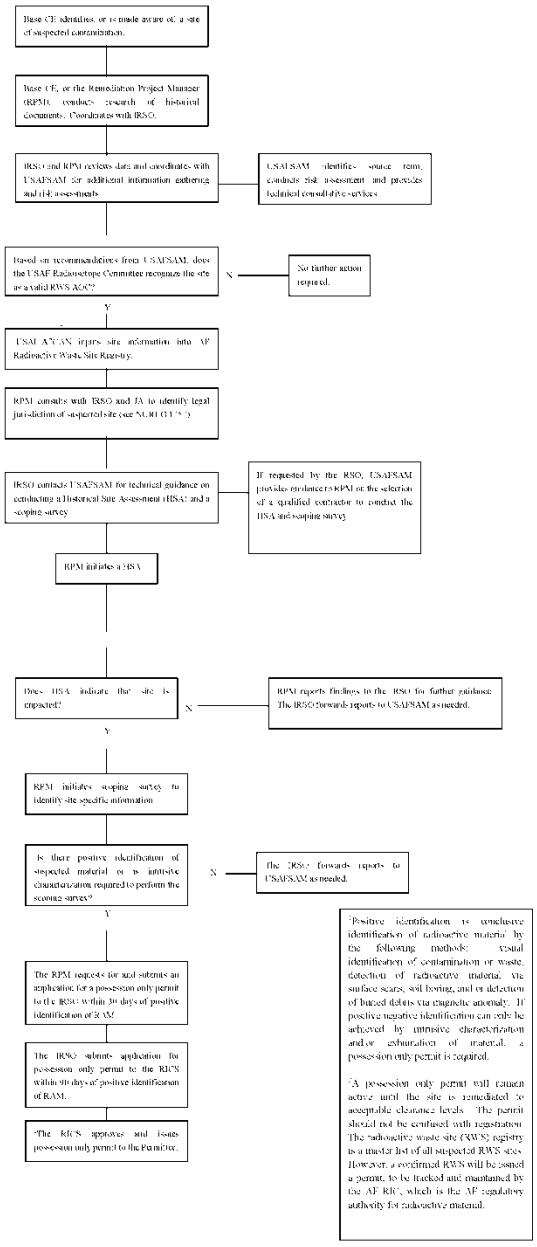
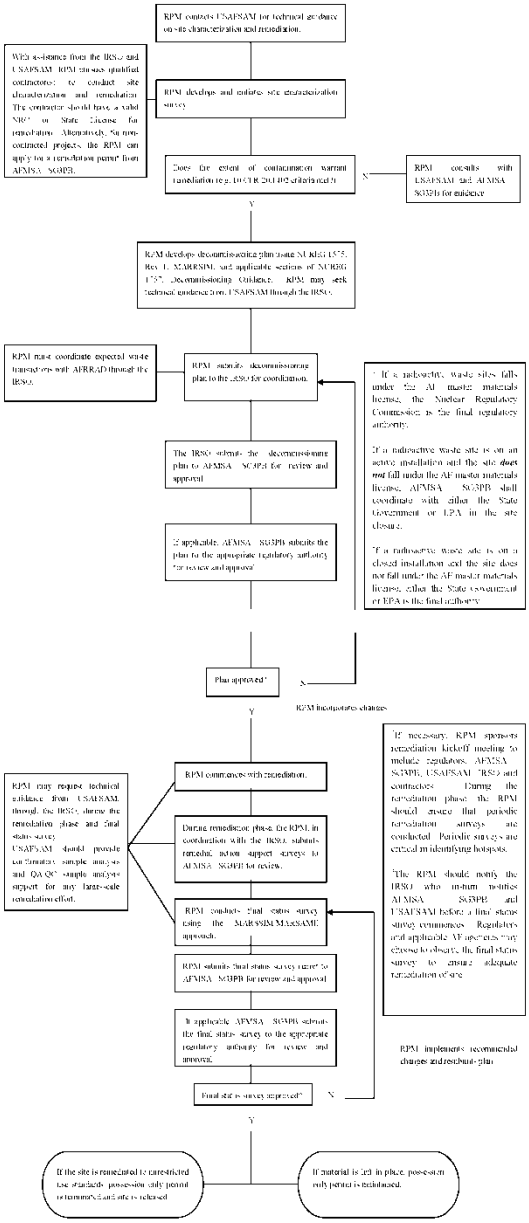


Figure A9.2. Site Characterization, Remediation and Property Release.



Attachment 10

MANAGING AND DISPOSING OF RADIOACTIVE WASTE

A10.1. Requirements for Waste Generating Activities.

A10.1.1. 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.

A10.1.2. The PRSO will maintain a log for information about RAM placed into radioactive waste containers and record radiation levels. The log shall include:

A10.1.2.1. Name of the installation;

A10.1.2.2. The building and number of the room containing radioactive waste containers;

A10.1.2.3. The types of containers and the identification number assigned to each container;

A10.1.2.4. The date items were placed in the container;

A10.1.2.5. 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;

A10.1.2.6. The radionuclide(s) contained in the item;

A10.1.2.7. The known or estimated radioactivity in curie or becquerel units. Do not abbreviate unit or prefixes;

A10.1.2.8. 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 AFRRAD (reference A10.4);

A10.1.2.9. The chemical form of each radionuclide, for example, oxide, chloride, and the chemical name of the labeled compound;

A10.1.2.10. The name and initials of the individual making the entry;

A10.1.2.11. Meter readings in millirem or milliSievert per hour (mrem/hr or mSv/hr) measured outside the containers;

A10.1.2.12. The name and initials of the individual conducting the survey; and

A10.1.2.13. Evidence of PRSO and IRSO coordination, as applicable.

A10.1.3. The PRSO will survey radioactive waste storage areas periodically to ensure compliance with 10 CFR 20 and document the results.

A10.1.4. The PRSO will maintain records of all disposals of radioactive waste for the duration of the permit.

A10.1.5. Before sealing a waste container, the PRSO must:

A10.1.5.1. 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.

A10.1.5.2. 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 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.

A10.1.5.3. The PRSO must secure the waste and records and investigate to resolve discrepancies if observations or measurements give unusual results.

A10.1.6. Close and seal the plastic bag or container for transfer and disposal after the PRSO's audit.

A10.2. Requirements and Rules for Storage of Radioactive Waste Containers.

A10.2.1. Long-term storage is not encouraged and should be avoided. In general, store radioactive waste for no longer than one (1) year.

A10.2.2. PRSOs must maintain a listing of all sealed radioactive waste storage containers and account for and inspect semiannually the integrity of each container. A record of the inspection shall be maintained for three (3) years.

A10.2.3. A copy of the waste inventory sheet must be attached to each waste container held in long-term storage.

A10.2.4. Do not open waste containers to conduct periodic inspections.

A10.2.5. Ensure storage areas are properly ventilated prior to survey.

A10.2.6. 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.

A10.2.7. 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.

A10.2.8. Do not store liquid waste more than one (1) year. Solidify the waste with the help of AFRRAD.

A10.3. Disposal by Decay-in-Storage. Permittees authorized to dispose by decay-in-storage will comply with the record keeping requirements prescribed in 10 CFR 35.92(b).

A10.4. Disposal by Burial or Recycling.

A10.4.1. 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. Written requests shall include the following information:

A10.4.1.1. NSN or part number and manufacturer's name or code of the radioactive source, if applicable;

A10.4.1.2. Nomenclature (e.g., Lensatic compass, tube assembly, test sample);

A10.4.1.3. Quantity of each item or amount of waste in terms of cubic feet;

A10.4.1.4. Radionuclide(s);

A10.4.1.5. Physical Form (e.g., solid, liquid, gas) to include any known hazardous waste constituents;

A10.4.1.6. Chemical form;

A10.4.1.7. Estimated radioactivity per item, and total radioactivity in milliCuries, and in Becquerels, for each container; and

A10.4.1.8. Radiation exposure rate in millirem per hour (milliSievert per hour) at 4 inches from surface of unpackaged item (for items only).

A10.4.2. OCONUS installations are authorized to dispose of waste in the host country where they are geographically located and to the extent that such disposal is in compliance with existing host nation regulations and agreements and has been approved by the cognizant host nation authority and the RICS.

A10.5. Exempt Quantity Item Disposal.

A10.5.1. Electron tubes and spark gaps containing RAM can be disposed of as normal trash providing the following conditions are satisfied:

A10.5.1.1. 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 **Attachment 3;** and

A10.5.1.2. 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; and

A10.5.1.3. Disposal is allowed by the host, state or country.

Attachment 11

REPORTING CRITERIA

A11.1. In general, there are two types of reporting criteria. The first are those that are specific to one part of the CFR such as the need to report a radiography source that has been unintentionally disconnected from the control cable e.g., 10 CFR 34.101(a) (1). The second are general criteria that apply to any event, such as the need to report any personnel exposure that exceeds license or NRC standards, such as the personnel exposure reporting requirements contained in 10 CFR 20.2202 and 20.2203. It is important to keep both in mind when assessing whether an event is reportable; if it is reportable, determine the reporting methods, timetables and information requirements. For example, a call is received from a radiography site that a radiographer may have been overexposed. The investigation reveals that the dose received was less than that required for a reportable event. However the event was caused by the source unintentionally coming loose from the cable and was actually a reportable event under 10 CFR 34.101(a) (1). Table A11.1 is a summary of the key information required for each event to ensure complete reporting.

Table A11.1. Guide for Determining Reporting Requirements.

General Event Check List	Applicable CFRs	Table	Comments
What was the actual or potential exposure type?			
External	20.2202, 20.2203, 20.2204, 20,2205 30.50	**Table A11.2 Table A11.5**	The CFRs listed apply to and need to be addresses for all potentially reportable incidents where this exposure mode is possible.
Internal	20.2202, 20.2203, 20.2204, 20.2205, 35.3045, 35.3047 30.50 40.60	**Table A11.2 Table A11.5**	The CFRs listed apply to and need to be addresses for all potentially reportable incidents where this exposure mode is possible.
Contamination	20.2202, 20.2203, 30.50	**Table A11.2 Table A11.5**	This is listed separately because of the unique condition in 10 CFR30.50 (b) (3) for spreadable contamination on the body or clothing.
What category of people was exposed?			
Patient			
Patient Alone	35.3045	**Table A11.8**	Dose to patients resulting from medical procedures is not Part 20.
Pregnant Patient	20.2202, 20.2203, 35.3047	**Table A11.2 Table A11.8**	The Part 20 standards apply because the embryo/fetus is not a patient.
Breast Feeding Patient	20.2202, 20.2203, 35.3047	**Table A11.2 Table A11.8**	The Part 20 standards apply because the embryo/fetus is not a patient.
Non-Patient			

General Event Check List	Applicable CFRs	Table	Comments
Radiation Workers	20.2202, 20.2203, 20.2204, 20.2205, 30.50	**Table A11.2 Table A11.5**	
Minor Radiation Workers	20.2202, 20.2203, 30.50	**Table A11.2 Table A11.5**	
Declared Pregnant Worker	20.2202, 20.2203, 30.50	**Table A11.2 Table A11.5**	It is important to know if there were any declared pregnant women potentially exposed because the standards are significantly lower.
General Population	20.2202, 20.2203, 30.50	**Table A11.2 Table A11.5**	
How did the event occur?			
Medical Event	35.3045, 35.3047	**Table A11.2 Table A11.8**	Applies only to patient diagnostic and therapy procedures.
Explosion, Fire, Accident	30.50 40.60	**Table A11.5**	
Disabled or Malfunctioning Equipment	30.50, 34.101, 40.60	**Table A11.5 Table A11.6**	In addition to 10 CFR 30.50 there are specific requirements for specific and generally licensed items.
Loss or Theft	20.2201	**Table A11.4**	The potential dose resulting from the loss also needs to be considered.
Procedural Error	General		
Leaking Source	34.27, 35.3067, 40.60	**Table A11.6**	
Shipping and/or Transportation	71.91, 49 CFR 171.5 and 171.6	**Table A11.9**	
Accidental Criticality	70.52	**Table A11.10**	
Transfer of GLDs	31.5	**Table A11.11**	
Ruptured Source	39.77	**Table A11.6**	Well logging sources
Irretrievability	39.77	**Table A11.6**	Well logging sources
Defects and Noncompliance	21.21	N/A	

Table A11.2. Personnel Over-Exposure Apply to all Incidents covered by Title 10 CFR.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Category I Personnel Over Exposure (Incident)	May or threaten to cause exposures ≥5 times Occupational limits - (occupational limits of concern are 5 rem TEDE, 15 rem lens DE, 50 rem shallow DE)	20.2202(a)(1)	Immediate	30 calendar days after learning of incident- 20.2203(a)(1)	Applies to any incident/event under any Part of 10 CFR.
Category II Personnel Over Exposure (Incident)	Loss of control of RAM may, or threatens to, cause an individual to exceed Occupational limits in a period of 24 hours.	20.2202(b)(1)	12 hrs after discovery	30 calendar days after learning of incident- 20.2203(a)(2)	Applies to any incident/event that involves loss of control of licensed material. This includes theft, loss, unintended release, contamination, missing during transportation, fire, explosions etc. under any Part of 10 CFR.
Category III Personnel Over Exposure (Reportable Event)	Exceeding Occupational dose limits (adult, minor, declared pregnant woman), individual member of public, license limits, ALARA for air emissions under 20.1101(d).[3]	20.2203(a)(1)(2) 20.1101(d)	None	30 calendar days after learning of the incident- 20.2203(a)	Applies to any incident/event under any Part of 10 CFR.

[3] 20.1101(d) states that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 10 mrem (0.1 mSv) per year from these emissions

Table A11.3. Reportable Criteria for any Incident Where Licensed Materials may have been Released.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Category I Release (Incident)	≥5 times ALI in 24 hr period if a person present	20.2202(a)(2)	Immediate	30 calendar days after learning of incident- 20.2203(a)(1)	Applies to any incident/event under any Part of 10 CFR.
Category II Release (Reportable Event)	Concentrations: in restricted areas >license limits; in unrestricted areas >10 times NRC limits or license limits irrespective of actual or potential dose to individuals.	20.2203(a)(3)	None	30 calendar days after learning of incident- 20.2203(a)(1)	Applies to any incident/event under any Part of 10 CFR.

Table A11.4. Reportability Criteria for Loss or Theft of RAM.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Category I Theft/Loss	≥1000 Times levels in 10 CFR 20, App C	20.2201(a)(1)(i)	Immediately after becomes known to the licensee	30 calendar days after telephonic report	
Category II Theft/Loss	≥10 Times 10 CFR 20, App C	20.2201(a)(1)(ii)	≤30 days after incident if item is still missing at the 30 day point	30 calendar days after telephonic report	No written report is required if a telephonic report was not made.

Table A11.5. Reportability for unplanned events. This table applies to all materials covered by 10 CFR including SNM and source material.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Category I Unplanned Event (Exposure and Releases)	Event prevents immediate protective actions necessary to avoid exposures that could exceed regulator limits or releases of RAM that could exceed regulatory limits.	30.50(a) 40.60(a) 70.50(a)	As soon as possible but no later than 3 hours after discovery	30 calendar days after telephonic report	This deals with events such as fires or explosions or other events that result in uncontrollable exposures or releases of RAM. This applies to all of 10 CFR.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Category II Unplanned Event (Contamination)	An unplanned contamination event that :(i) Requires restricted access (workers or the public) for >24 h; **and** (ii) Involves quantities of material > 5 X's lowest ALI specified in appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; **and,** (iii) Access is not restricted just to allow isotopes with a half-life <24 hours to decay prior to decontamination.	30.50(b)(1) 40.60(b)(1) 70.50(b)(1)	≤ 12 hours after discovery	30 calendar days after telephonic report	This is a three part standard to determine when a contamination event from any material covered in 10 CFR is reportable to the NRC. Once again, Category I through III over exposure criteria also apply to these events.
Category III Unplanned Event (Contaminated Person at MTF)	An event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body.	30.50(b)(3) 40.60(b)(3) 70.50(b)(3)	≤ 12 hours after discovery	30 calendar days after telephonic report	External decontamination by itself is not medical treatment. Medical treatment does include administering drugs (reduce dose, prevent or mitigate harm) surgical procedures for wound cleaning.
Category IV Unplanned Event (Unplanned Fire or Explosion)	An unplanned fire or explosion damaging any permitted material or any device, container, or equipment containing permitted material when: the quantity of RAM involved is greater than five times the lowest ALI specified in appendix B of §§ 20.1001-20.2401 of 10 CFR part 20 for the material; and the damage affects the integrity of the container.	30.50(b)(4) 40.60(b)(4) 70.50(b)(4)	≤ 12 hours after discovery	30 calendar days after telephonic report	

Table A11.6. Reporting Criteria for Malfunctioning Equipment, Disabled Equipment, Defective Packing and Leaking Sealed Sources.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Disabled or Malfunctioning Safety Equipment	When required safety equipment is needed to prevent releases or exposures to radiation and RAM exceeding regulatory limits, or to mitigate accident consequences; but is either disabled or malfunctioning **and** no redundant systems or equipment are available and operable to perform the required safety function.	30.50(b)(2)	≤ 12 hours after discovery	30 calendar days after telephonic report	Conducting high-dose-rate brachytherapy teletherapy irradiations with entryway interlocks and alarms disabled or malfunctioning is an example. A safety system that alerts a worker that the system is on does not meet the requirement because it does not prevent the system from operating with the door or entryway open.
Malfunctioning Radiography Source	(1) Unintentional disconnection of the source assembly from the control cable; (2) Inability to retract the source assembly to its fully shielded position and secure it in this position; **or** (3) Failure of any component (critical to safe operation of the device) to properly perform its intended function.	34.101		≤30 calendar days after the incident	

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Irradiator Malfunctions	(a) In addition to the reporting requirements in other parts of NRC regulations, any irradiator malfunction that results in a stuck source, inability to move the source, damage to source racks, inoperability of control system, detection of the source by the exit monitor, fire, explosion, abnormal water loss, abnormal conductivity in water, detection of rad contamination.	36.83	≤12 hours as described in § 30.50(c)(1)	≤ 30 calendar days as described in § 30.50(c)(2)	
Defects in Packaging Material	Instances in which there is a significant reduction in the effectiveness of any NRC-approved Type A or Type B packaging during use; or defects with safety significance in any NRC-approved Type B or fissile material packaging, after first use; or instances in which the conditions of approval in the Certificate of Compliance were not observed in making a shipment; or, instances in which the conditions in the certificate of compliance were not followed during a shipment.	71.91(a), (b)		≤30 calendar days after the incident	
Report of Leaking Source	Leak test ≥ 185 Bq (0.005 μCi)	34.27, 35.3067		≤5 calendar days after test using procedures in 10 CFR 30.6	

Table A11.7. Determining Reportability Based upon Medical Event of Nuclear Medicine, Brachytherapy or Teletherapy treatment and Diagnostic Procedures.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Patient Dose: Correct Patient, Correct Route, Correct Drug, Wrong Dose	(1) A dose that differs from the prescribed dose or dose that would have resulted from the prescribed dosage by more than 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin; **and**	35.3045(a)(1)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	This is a three part condition and all three parts must be met. The triggering event is the difference between the prescribed dose and the actual dose. If the difference is ≤ 5 rem EDE, 50 rem to an organ or tissue or 50 rem shallow dose, the event does not fit this category. If the dose difference is greater than these values, the event is reportable under this section only if the total dose differs from the prescribed dose by 20% or more, or falls outside of the prescribed dose range or, if fractionated doses are given, the fractionated dose differs from the prescribed fractionated dose by 50% or more.
	(i) The total dose delivered differs from the prescribed dose by 20 percent or more;	35.3045(a)(1)(i)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
	(ii) The total dosage delivered differs from the prescribed dosage by 20 percent or more or falls outside the prescribed dosage range; **or**	35.3045(a)(1)(ii)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
	(iii) The fractionated dose delivered differs from the prescribed dose, for a single fraction, by 50 percent or more.	35.3045(a)(1)(iii)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
Patient Dose Due to Procedural Error	(2) A dose that exceeds 0.05 Sv (5 rem) effective dose equivalent, 0.5 Sv (50 rem) to an organ or tissue, or 0.5 Sv (50 rem) shallow dose equivalent to the skin **from any of the following**--	35.3045(a)(2)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	This is a two part condition. First, the procedural error must have resulted in a dose to the patient/research subject that is greater that 5 rem EDE, 50 rem organ dose, or 50 rem shallow dose to the skin. Second, the dose has to be due to one of the procedural errors listed.
	(i) An administration of a wrong radioactive drug containing byproduct material; **or**	[35.3045(a)(2)(i)]	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
	(ii) An administration of a radioactive drug containing byproduct material by the wrong route of administration; **or**	35.3045(a)(2)(ii)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	A procedural error that **does not** result in the doses listed in the first part of this section **is not** a reportable event.
	(iii) An administration of a dose or dosage to the wrong individual or human research subject; **or**	35.3045(a)(2)(iii)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
	(iv) An administration of a dose or dosage delivered by the wrong mode of treatment; **or**	35.3045(a)(2)(iv)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
	(v) A leaking sealed source.	35.3045(a)(2)(v)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	
Dose to a Specific Non-Treatment Area	(3) A dose to the skin or an organ or tissue other than the treatment site that exceeds by 0.5 Sv (50 rem) to an organ or tissue and 50 percent or more of the dose expected from the administration defined in the written directive (excluding, for permanent implants, seeds that were implanted in the correct site but migrated outside the treatment site).	35.3045(a)(3)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	This is also a 2 part standard. The first criterion is that the dose to the non-treatment site is <50 rem. The second criterion is that the dose to the site must be 50% > the dose the clinician estimated the organ would get as documented in the written directive. It needs to be noted that if the written directive did not specify a dose and the organ dose was greater than 50 rem, the event is a medical event and is reportable. Note the exception.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Permanent Functional Damage	(b) A licensee shall report any event resulting from intervention of a patient or human research subject in which the administration of byproduct material or radiation from byproduct material results or will result in unintended permanent functional damage to an organ or a physiological system, as determined by a physician.	35.3045(a)(3)	1 calendar day after discovery of the medical event	≤ 15 calendar days after discovery of the event	This is a one part standard. If a physician determines that the patient's or research subject's actions caused permanent damage to an organ (e.g., thyroid) or a physiologic system, this is a medical event and is reportable under these guidelines.

Table A11.8. Reportable events due to nuclear medicine, brachytherapy, teletherapy exposures to a pregnant woman and nuclear medicine procedures to a breast feeding woman when not authorized by the authorized user.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Dose to an Embryo/Fetus	Unauthorized dose to an embryo/fetus > 50 mSv (5 rem) dose equivalent that is a result of an administration of byproduct material or radiation from byproduct material to a pregnant individual unless the dose to the embryo/fetus was specifically approved, in advance, by the authorized user.	35.3047 (a)	No later than the next calendar day after discovery	≤15 calendar days after discovery using procedures in 10 CFR 30.6	Category I and III over exposure criteria also apply to the embryo/fetus because the embryo/fetus is not the patient. Licensee has other reporting requirements.
Dose to a nursing child from materials administered to the mother	>5 rem TEDE **or** results in unintended permanent functional damage to an organ or physiological system as determined by a physician.	35.3047 (b)	No later than the next calendar day after discovery	≤15 calendar days after discovery using procedures in 10 CFR 30.6	Category I and III over exposure criteria also apply to the embryo/fetus because the embryo/fetus is not the patient. Licensee has other reporting requirements.

Table A11.9. Reportable transportation events.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Packages	(1) Removable radioactive surface contamination exceeds the limits of 10 CFR § 71.87(i) of this chapter; **or** (2) External radiation levels exceed the limits of 10 CFR § 71.47 of this chapter.	20.1906(d)(1), (2)	Immediately notify final delivery carrier and RIC Secretariat		
Transfer of RAM	Transfer of generally licensed detectors, gauges, measurement devices, controlling, light producing	31.50		≤30 calendar days after the transfer of a device to a specific licensee or export	

Table A11.10. Criticality Events.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Comments
Reports of Accidental Criticality	Accidental criticality	70.52	≤ 1 hour after discovery		

Table A11.11. GLDs.

Type	Criteria	10 CFR	Telephonic Notification RICS	Written Report to RICS	Discussion
GLDs	Transfer to a specific licensee/Permittee			Within 15 calendar days	Report to the RIC Secretariat that includes the recipient's license number, the serial number of the unit, and the date of transfer. Update RAMMIS.
	Upon transfer of a GLD to another general licensee (only when the device remains in place) IAW 10 CFR 31.5(c).	31.5(c)		Within 15 calendar days	Report to the RIC Secretariat that includes the recipient's license number, the serial number of the unit, and the date of transfer. Update RAMMIS.
	Upon finding removable contamination in excess of 0.005 microCuries or failure of or damage to a GLD likely to results in contamination IAW 10 CFR 31.5(c)(5).	31.5(c)(5)		Within 15 calendar days	Report to the RIC Secretariat that includes the recipient's license number, the serial number of the unit, and the date of transfer. Update RAMMIS.
	Upon change to a mailing address for the location of use or general licensee name.			Within 15 calendar days	Report to the RIC Secretariat that includes the recipient's license number, the serial number of the unit, and the date of transfer. Update RAMMIS.

Attachment 12

RAM INCIDENT AND MISHAP (DEFECT AND NONCOMPLIANCE) CHECKLIST

A12.1. Personnel making a report must include:

A12.1.1. The organization and individual making the report and their telephone number, email, fax number, and mailing address.

A12.1.2. The organization responsible for the RAM or device and parent MAJCOM.

A12.1.3. A description of the incident, defect, or noncompliance including:

A12.1.3.1. The date and time that the event occurred or when personnel discovered it;

A12.1.3.2. The specific location where the event occurred;

A12.1.3.3. A narrative of the event or a best estimate of how it occurred;

A12.1.4. A description of hazard abatement actions taken or planned and an estimate of how long it will take to complete them.

A12.1.5. Radionuclides and an estimate of their quantities in grams, pounds, Becquerels or curies. If the incident involves sealed sources, then provide the manufacturer, model(s), and serial number(s).

A12.1.5.1. Surface and dimensional areas of contaminated equipment, facilities, or ground, and results of radiation surveys for radiation levels in rad/hr or cGy/hr and contamination in disintegrations per minute (dpm).

A12.1.5.2. Concentrations of RAM estimated or measured in air, water, and soil in mCi per grams or liter, or milligrams per gram or liter.

A12.1.6. Name(s), grade(s), social security number(s), and phone number(s) of military and civilian personnel involved or exposed to radiation or RAM. Estimated levels of exposure or intake that people received, levels of radiation or concentration(s) that caused the exposure.

A12.1.7. Instrument(s) and method(s) used for personnel exposure estimates and surveys.

A12.1.8. The name of the nearest community, town, or city and military installation.

A12.1.8.1. Risk assessment of exposure to any member of public.

A12.1.8.2. If the event occurred on an installation; give the location of the nearest access by public or installation residents, the nearest housing, and the nearest workplaces.

A12.1.9. The manufacturer, supplier, or construction firm of defective items or structures and any other locations and telephone numbers where personnel use like items.

A12.1.10. The installation organizations and the titles of people responding to the incident.

A12.1.11. Other USAF, Federal, state, or local organizations or representatives that you have notified.

A12.1.12. The names of news organization asking for press releases and any press releases supplied.

A12.1.13. Applicable USAF RAM Permit or NRC License Number and Docket Number.

Attachment 13

INSPECTION POLICY

A13.1. Introduction. The inspection program for permitted and generally licensed RAM serves to assess compliance with permit conditions, this instruction and Federal regulations (e.g., NRC and DOT). The frequency and duration of the inspection shall be based on the inspection priority assigned by the RICS, complexity of the permit, overall risks of the permitted activity, and opportunity to witness infrequent or unique procedures.

A13.2. Inspection Protocol.

A13.2.1. Inspections of permits shall be conducted by the Air Force Inspection Agency, Medical Operations Directorate (AFIA/SG), the U.S. Nuclear Regulatory Commission (NRC), AFMSA/SG3PB, or collaboratively. Inspections are conducted IAW NRC Manual Chapter 2800, *Materials Inspection Program*, and as necessary, may apply a "prescriptive" evaluation to ensure the implementing conditions of this instruction are accomplished.

A13.2.2. Inspections by either organization shall avoid interference with the Permittee's operational obligations; however, a Permittee shall not delay inspections based on inconvenience. **Note:** 10 CFR 30.52 states, "Each licensee shall afford to the NRC at all reasonable times the opportunity to inspect byproduct material and the premises and facilities wherein byproduct material is used or stored. Each licensee shall make available to the NRC for inspection, upon reasonable notice, records kept by him." This access shall also be afforded to AFIA/SG or AFMSA/SG3PB. Permittees failing to submit to or afford an inspection may be issued a violation for non-compliance.

A13.2.3. The AFIA/SG or AFMSA/SG3PB inspector shall be in uniform; credentialed with a DOD common access card (CAC) and either possess a badge, orders, authorization letter or a list of telephone numbers from which the Permittee may call for verification. The inspector shall have a clearance verified in the Joint Clearance and Access Verification System (JCAVS). The 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.

A13.2.4. Inspections are generally conducted on-site and unannounced IAW AFI 90-201, *Inspector General Activities*, paragraph 2.1.1. Inspections may be conducted at times outside of normal duty hours, particularly when the use or receipt of permitted material is conducted. A valid inspection involves AFIA/SG or AFMSA/SG3PB contact with the Permittee, PRSO or cognizant individual using material covered by the permit. Inspections that cannot be conducted due to operational obligations or the unavailability of applicable personnel may be rescheduled if coordinated with AFIA/SG or AFMSA/SG3PB.

A13.2.5. 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. Failure to comply with the conditions of the permit, this instruction or Federal regulations may result in a violation for non-compliance, particularly if permitted material is not properly secured and controlled.

A13.2.6. Neither AFIA/SG nor AFMSA/SG3PB is required to pre-inspect any unit prior to an NRC inspection. Units are expected to be in compliance at all times.

A13.2.7. Telephonic inspections may be performed IAW NRC Priority T criteria. These are generally performed for routine inspections of template permits possessing permitted RAM and for follow-up inspections of permits that have yet to receive permitted RAM. Permittees will be notified by AFIA/SG of the scheduled date and time for the telephonic inspection as well as the date and time to submit requested permit documentation. Permittees failing to submit documentation or submit to a telephonic inspection without prior coordination with AFIA/SG may be issued a violation for non-compliance. As necessary, an on-site or telephonic follow-up inspection may be conducted at any time.

A13.2.8. Stop Action. During the course of an inspection, AFIA/SG or AFMSA/SG3PB may determine a procedure or practice to be imminently dangerous to life and health (IDLH). In those cases, the inspector shall require the Permittee to temporarily cease operations until corrective action is taken. As necessary, the RICS shall be contacted. The inspector shall not ask the Permittee to perform a task that is hazardous, in contravention to the permit, this instruction, Federal regulations or has potential to disrupt operational activities.

A13.2.9. The AFIA/SG or AFMSA/SG3PB inspector shall offer to conduct an out-brief with the PRSO, Permittee or cognizant individual(s). The out-brief shall include discussion of the inspection scope, contacts, results, and preliminary rating. In cases where the inspection reveals significant findings or Severity Level I-III violation(s), an out-brief with the Permittee and his/her commander shall be mandatory. AFIA/SG will contact AFMSA/SG3PB prior to the out-brief of these type of findings. Following an inspection, AFIA/SG may request clarifying or additional information from the Permittee.

A13.2.10. AFIA/SG shall generate a final report and assign a rating in 60 duty days. The Permittee must initiate corrective actions in advance of any report. At a minimum, the final report shall be submitted to the Permittee, RICS, and the Permittee's MAJCOM/IG and SG.

A13.3. Inspection Types.

A13.3.1. New permit. 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.

A13.3.2. Routine. Shall be conducted at intervals established by the permit or as established in NUREG 1556, Volume 20. Inspection frequency may be changed based on Permittee performance.

A13.3.3. Follow-up. Shall be conducted when Permittees receive NRC Severity Level I-III violations. Such may also be requested by the RIC. They will occur within a year following closure of corrective actions.

A13.3.4. Collaborative. 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. Conversely, the NRC may choose to accompany AFIA/SG during an inspection. Typically, the NRC does not issue a report under these conditions.

A13.3.5. Incident. 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.

A13.3.6. Consultancy. 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.

A13.3.7. Permit Termination. A termination inspection 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 inspection shall not be rated but a report may be generated.

A13.3.8. Special Emphasis. 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 annual IG-SG Annual Review.

A13.3.9. Other. Wherever there is geographic clustering of permits, it may be advantageous for AFIA/SG to accelerate the date of the next inspection. This predominantly applies to permits with a 5 or 7-year inspection frequency and within one or two years of their next inspection. This would serve to align the inspection frequency of similar permits in a geographic region to reduce repetitive travel.

A13.4. Severity Levels of Violations.

A13.4.1. AF issued violations have been generally cross-referenced to NRC categories and severity levels. Since regulatory requirements have varying degrees of safety, safeguards, or environmental significance, violations of given requirements have differing levels of significance that are represented by the severity levels.

A13.4.2. 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.

A13.4.3. Minor violations are less severe than those defined as Severity Level IV violations. A response with corrective actions is required to be submitted IAW **paragraphs A13.5 and A13.7**. Examples might include:

A13.4.3.1. Lapse in inventory/transfer records without loss of material.

A13.4.3.2. Lapse in PRSO appointment or expired permit without impact on safety.

A13.4.4. Severity Level IV violations involve non-compliance with NRC requirements, non-compliance with permit conditions, this instruction, or Federal regulations and pose an increased, but generally, minimal, risk to safety and health. A response with corrective

actions is required to be submitted IAW **paragraphs A13.5 and A13.7** AFIA/SG may recommend the RICS close violations in advance of enforcement if corrective actions can be demonstrated during the inspection or within five (5) duty days thereafter. Examples include:

A13.4.4.1. Failure to maintain and implement radiation programs to keep radiation exposures ALARA, and/or

A13.4.4.2. Information that the NRC requires be kept by a Permittee and that is incomplete or inaccurate and of more than minor significance (e.g., area survey records).

A13.4.5. Severity Level III violations are cause for regulatory concern as violations of this nature pose a significant risk to safety, health and/or security of permitted RAM. The Permittee shall immediately contact (within 24 hours) the RICS following the violation notification/issuance by AFIA/SG. A response with corrective actions is required to be submitted IAW **paragraphs A13.5 and A13.7**. Examples include:

A13.4.5.1. Conduct of licensee activities by a technically unqualified person, and/or

A13.4.5.2. Delay in notifying the RIC upon loss of RAM.

A13.4.6. Severity Level II violations involve actual or high potential consequence to public health, worker safety, and/or control of RAM. The Permittee shall immediately contact (within 24 hours) the RICS following the violation notification/issuance by AFIA/SG. A response with corrective actions is required to be submitted to the RICS within five (5) duty days of Permittee's receipt of the report. A response with corrective actions is required to be submitted IAW **paragraphs A13.5 and A13.7** Examples include:

A13.4.6.1. A radiation exposure of a declared pregnant worker during the gestational period in excess of 1.0 rem TEDE, and/or

A13.4.6.2. "Significant information identified by a Permittee" and not provided to AFIA/SG or the RIC because of careless disregard on the part of the PRSO.

A13.4.7. Severity Level I violations involve actual or high potential consequences to public health, worker safety, and/or control of RAM but is deemed more significant than a Severity Level II violation by the inspector. The Permittee shall immediately contact (within 24 hours) the RICS following the violation notification/issuance by AFIA/SG. A response with corrective actions is required to be submitted to the RICS within five (5) duty days of Permittee's receipt of the report. A response with corrective actions is required to be submitted IAW **paragraphs A13.5 and A13.7** Examples include:

A13.4.7.1. An annual exposure of a member of the public in excess of 1.0 rem TEDE, and/or

A13.4.7.2. Inaccurate or incomplete information provided to AFIA/SG, RIC or the NRC in a deliberate nature, under official pretense and knowing such was incomplete.

A13.5. Inspection Violations and Actions.

A13.5.1. Minor. 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. The RIC/S reserves the right to accelerate the time of the response. The RIC/S may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

A13.5.2. 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. The RIC/S 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.

A13.5.3. 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. Permittees shall respond by email or in writing, within 24 hours upon verbal notification or report, whichever occurs first, to the RICS; the Permitee shall provide immediate actions taken to mitigate the violation. The RIC/S reserves the right to accelerate the time of the response. The RIC/S may take enforcement against a Permittee who doesn't demonstrate timeliness or sufficiency of corrective actions.

A13.5.4. Stop Action. During the course of an inspection, AFIA/SG may determine a procedure or practice to be imminently dangerous to life and health (IDLH). In those cases, the inspector shall require the Permittee to temporarily cease operations (Stop Action) until corrective action is taken. The RICS shall be contacted as necessary. The inspector shall not ask the Permittee to perform a task that is hazardous, in contravention to the permit, this instruction, Federal regulations or has potential to disrupt operational activities.

A13.5.5. The AFIA/SG inspector shall offer to conduct an out-brief with the PRSO, Permittee or cognizant individual(s). In cases where the inspection reveals significant findings or Severity Level I-III violation(s), an out-brief with the Permittee and his/her commander shall be mandatory. Moreover, AFIA/SG will contact the RICS prior to the out-brief of these type of findings. Following an inspection, AFIA/SG may call the Permittee for clarifying information. Unless in conflict with this section, AFIA/SG shall generate a final report and assign a rating in 60 duty days. The Permittee must initiate corrective actions in advance of any report.

A13.5.6. At a minimum, the final report shall be submitted to the Permittee, the RICS, and the Permittee's MAJCOM/SG.

A13.5.7. On a quarterly basis, AFIA/SG shall provide the RIC a summary of inspection findings.

A13.6. Ratings. AFIA/SG will issue either a rating of "Compliant" or "Not Fully Compliant" in the final report. Inspections that are Not Fully Compliant will report corrective actions to violations IAW **paragraphs A13.5 and A13.7**. Whereas there may be no RAM or performance objectives to evaluate, a rating will not be issued.

A13.7. Corrective Actions. When a violation is issued during an inspection, corrective actions shall commence promptly. Permittees shall respond to the violations according to the provisions of this attachment. The Permittee shall decide if the response needs to be coordinated with higher authorities. Response to violations shall contain, at a minimum, the following:

A13.7.1. Reference to the violation(s).

A13.7.2. Complete description of how the violations(s) were or will be corrected to include:

A13.7.2.1. The root cause for the violation(s) or, if contested, the basis for disputing it,

A13.7.2.2. Corrective actions that have been taken and the results achieved,

A13.7.2.3. Corrective actions that will be taken to avoid future violations, and

A13.7.2.4. Timeline, with milestones, for corrective actions and date when full compliance was or will be achieved.

A13.7.3. Designation of an office for monitoring corrective measures, to include a point of contact.

A13.7.4. Signature of the Permittee. "For" signatures shall not be accepted without certification the Permittee is aware of the corrective actions. A statement to that fact shall be placed in the body of the response letter. All letters shall be dated.

A13.7.5. Corrective actions to separate violations shall not be commingled. Each violation shall be addressed separately. However, reference to a specific corrective action from another violation can made if such would resolve both violations.

A13.8. Rebuttal. If the Permittee believes a violation to be invalid, then a written rebuttal shall be submitted to the RICS within 30 duty days of receipt of the violation. The rebuttal shall include reasons for rebuttal and reference the permit, AFIs or Federal regulations as appropriate. An unsupported opinion or supposition that corrective action is unattainable due to external constraints may not be acceptable to close the matter.

A13.9. Disposition**.**

A13.9.1. 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, render a closure letter. A closure letter shall be submitted to the Permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

A13.9.2. Non-Closure. If the RIC/S determines corrective actions are not acceptable to close the violations, enforcement actions may be taken according to **Attachment 14**. Enforcement actions shall be submitted to the Permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

Attachment 14

RIC ENFORCEMENT POLICY

A14.1. Introduction and Basic Enforcement Actions. This section describes the enforcement actions available to the RIC/S 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, permit tie-down, this instruction, or Federal regulations) and require a response for corrective action by a set date. The RIC/S shall, in the administration of the MML, keep the assigned NRC Program Manager informed regarding enforcement actions.

A14.2. 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 directive is considered. As authorized by this instruction and AFPD 40-2, a directive 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. Directives 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. Directives are mandatory and made effective immediately. Directives 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. Directives may be issued as follows:

A14.2.1. Permit Modification. Permit Modification Orders are issued by the RIC/S when a change in Permittee equipment, procedures, personnel, or management controls is necessary.

A14.2.2. Suspension Orders. Suspension Orders are issued by the RICS and signed by AF/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:

A14.2.2.1. When the Permittee has not responded adequately to other enforcement action;

A14.2.2.2. When the Permittee interferes with the conduct of an inspection or investigation; or

A14.2.2.3. For any reason not mentioned above for which permit activity suspension is authorized by the RIC/S in coordination with AF/SG3P.

A14.2.3. Revocation/Termination Orders. Revocation/Termination Orders are issued by RIC/S and signed by AF/SG3P:

A14.2.3.1. When a Permittee is unable or unwilling to comply with permit requirements;

A14.2.3.2. When a Permittee refuses to correct a violation;

A14.2.3.3. When a Permittee does not respond to a NOV when a response was required by the RICS; or

A14.2.3.4. For any other reason for which revocation is authorized by the RIC/S in coordination with AF/SG3P (i.e., any condition that would warrant refusal of a permit on an original application).

A14.2.4. Cease and Desist Orders. Cease and Desist Orders are issued by the RIC/S and may be used to stop an unauthorized activity that continues after being notified by the RICS that the activity has been deemed unauthorized.

A14.2.5. Confirmatory Action Letters. 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.

A14.2.6. Demands for Information. 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.

A14.2.7. Other Orders. In addition to the Orders describe above, Orders may be issued to Permittees that include but are not limited to:

A14.2.7.1. Divert facility financial resources to purchase, replace, or excess and dispose of certain equipment;

A14.2.7.2. Increase the frequency of facility safety committee meetings;

A14.2.7.3. Implement meetings between the facility executive management and the RSO on a frequent and routine basis;

A14.2.7.4. Perform additional or supplemental training to Permittee staff;

A14.2.7.5. Increase frequencies of facility internal audits or other internal surveillance; and/or

A14.2.7.6. Appear before the RIC to present corrective actions and associated implementation timelines.

A14.3. Factors Impacting Escalated Enforcement Actions.

A14.3.1. Initial Escalated Action: When the RIC/S 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 to (2) years or two (2) inspection cycles, whichever is longer, the RIC/S 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.

A14.3.2. 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:

A14.3.2.1. Whether the problem requiring corrective action was AFIA/SG identified, the RICS-identified; Permittee-identified, or discovered through an event;

A14.3.2.2. Whether prior opportunities existed to identify the problem requiring corrective action and if so, the age and number of those opportunities;

A14.3.2.3. 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;

A14.3.2.4. 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;

A14.3.2.5. 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;

A14.3.2.6. For AFIA/SG identified issues, whether the Permittee should have identified the issue (and taken action) earlier; and

A14.3.2.7. 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.

A14.3.3. Prompt and Comprehensive Corrective Action: Comprehensive corrective action is required for all MML violations. 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:

A14.3.3.1. Timeliness and Extent of Corrective Action.

A14.3.3.1.1. Consideration will be given to the:

A14.3.3.1.1.1. Timeliness of the corrective action (including the promptness in developing the schedule for long term corrective action);

A14.3.3.1.1.2. Adequacy of the Permittee's root cause analysis for the violation; and

A14.3.3.1.1.3. 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).

A14.3.3.1.2. 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

A14.3.3.1.3. 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.

A14.3.3.2. 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).

A14.3.3.3. 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:

A14.3.3.3.1. Conduct a complete and thorough review of the circumstances that led to the violation;

A14.3.3.3.2. Identify the root cause of the violation; and

A14.3.3.3.3. Take prompt and comprehensive corrective action that will address the immediate concerns and prevent recurrence of the violation.

A14.4. Enforcement Conferences.

A14.4.1. When a Permittee has been issued a NOV and fails to conform to effective corrective actions, the RIC/S may decide to initiate an enforcement conference with the Permittee to define the actions necessary to begin effective corrective measures to the violation. The RIC/S 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, the RIC/S.

A14.4.2. The purpose of the conference is for the RIC/S 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:

A14.4.2.1. The root cause and analysis of the violation(s);

A14.4.2.2. That a Permittee’s response is deemed timely and appropriate; and

A14.4.2.3. That corrective actions to prevent similar recurrence of the violation(s) have been taken.

A14.4.3. 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).

A14.5. Appealing Enforcement Actions. The Permittee or any other person adversely affected by a NOV or Order may appeal said action. The Permittee may submit an appeal via official correspondence to the RIC/S for the violations and findings. The Permittee must provide ample regulatory justification in the correspondence to warrant an appeal of the violations. The RIC/S 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 RIC/S 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.

A14.6. NRC Related Administrative Actions. In addition to the enforcement actions by the RIC/S, 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 IAW 10 CFR 19.11(a)(4).

A14.6.1. 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.

A14.6.2. 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 RIC/S, a separate enforcement action may be issued for the Permittee's failure to make a required report.

A14.7. Enforcement Actions Involving Individuals. An enforcement action against an individual will be taken only when the RIC/S 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.

A14.7.1. 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:

A14.7.1.1. Inadvertent individual mistakes resulting from inadequate training or guidance provided by the Permittee;

A14.7.1.2. 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;

A14.7.1.3. 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

A14.7.1.4. 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.

A14.8. Willful Violations and Actions of Individuals. 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. Listed below are examples of situations that could result in enforcement actions against individuals.

A14.8.1. The situations include, but are not limited to, violations that involve:

A14.8.1.1. Willfully causing a Permittee to be in violation of permit requirements;

A14.8.1.2. 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;

A14.8.1.3. Recognizing a violation of procedural requirements and willfully not taking corrective action.

A14.8.1.4. Willfully defeating alarms and/or interlocks that have safety significance;

A14.8.1.5. Dereliction of duty;

A14.8.1.6. Falsifying records required by MML requirements or by the Permittee;

A14.8.1.7. 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

A14.8.1.8. Willfully withholding safety significant information rather than making such information known and available to appropriate supervisory or technical personnel in the Permittee's organization.

A14.8.2. 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:

A14.8.2.1. The level of the individual within the organization;

A14.8.2.2. The individual's training and experience as well as knowledge of the potential consequences of the misconduct;

A14.8.2.3. The safety consequences of the misconduct;

A14.8.2.4. The degree of supervision of the individual, i.e., how closely is the individual monitored or audited and the likelihood of detection;

A14.8.2.5. The employer's response, (e.g., disciplinary action taken);

A14.8.2.6. The attitude of the offender (e.g., admission of misconduct, acceptance of responsibility);

A14.8.2.7. The degree of management responsibility or culpability; and

A14.8.2.8. Who identified the misconduct.

A14.8.3. Types of Enforcement Actions: Any proposed enforcement action against individuals must be issued by the RIC/S. 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:

A14.8.3.1. 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

A14.8.3.2. Require retraining, additional oversight or independent verification of activities performed by the person, if the person is to be involved in permitted activities.

A14.8.4. 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.

A14.9. Violations of Reporting Requirements or Submitting False Information.

A14.9.1. Reporting: Permittees are expected to provide complete, accurate, and timely information and reports when required. 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.

A14.9.2. 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.

A14.9.2.1. 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:

A14.9.2.1.1. The degree of knowledge that the communicator should have had, regarding the matter, in view of his or her position, training, and experience;

A14.9.2.1.2. The opportunity and time available prior to the communication to assure the accuracy or completeness of the information;

A14.9.2.1.3. The degree of intent or negligence, if any, involved;

A14.9.2.1.4. The formality of the communication;

A14.9.2.1.5. The importance of the information which was wrong or not provided;

A14.9.2.1.6. The rationale of the explanation for not providing complete and accurate information;

A14.9.2.1.7. Efforts taken to correct information that is later identified as false or incomplete; and/or

A14.9.2.1.8. Failures to correct false or incomplete information.

Attachment 15

MANAGING ALLEGATIONS

A15.1. 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. Allegations will be investigated and reported IAW 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. 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:

A15.1.1. Supervisors;

A15.1.2. PRSOs or IRSOs;

A15.1.3. Commanders;

A15.1.4. Inspector General;

A15.1.5. USAF Radioisotope Committee Secretariat;

A15.1.6. USAF Radioisotope Committee;

A15.1.7. 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.

A15.2. Reporting Allegations.

A15.2.1. Allegations containing the following information can be processed most effectively.

A15.2.1.1. Name, occupation and contact information of person making the allegation;

A15.2.1.2. Date and description of issue;

A15.2.1.3. Individuals involved and witnesses;

A15.2.1.4. Outcome and Consequences;

A15.2.1.5. Details of previous reports, including who received them.

A15.2.1.6. Any corrective actions to date; and

A15.2.1.7. Expectations.

A15.3. RICS Handling of Allegations.

A15.3.1. In the event the RICS receives an allegation, the following measures will be taken:

A15.3.1.1. If the allegation is against the RICS, it will be immediately referred to the appropriate NRC Regional Office for disposition and AF/SG3 shall be informed.

A15.3.1.2. 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.

A15.3.2. The ARB will be comprised of the following representatives:

A15.3.2.1. Chair, RIC (will serve as the Chair, ARB);

A15.3.2.2. Chief, RICS;

A15.3.2.3. Member of the affected MAJCOM, Senior Health Physicist or Bioenvironmental Engineer;

A15.3.2.4. AFIA/SGI;

A15.3.2.5. Officer within of the affected unit; and

A15.3.2.6. RIC/JA

A15.3.3. 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.

A15.3.4. 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.

A15.3.5. 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.

A15.4. 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:

A15.4.1. The circumstance where the individual has no objection to the release of his/her identity and is documented in the allegation file;

A15.4.2. 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

A15.4.3. The circumstance where such protection would impact worker health and safety.

A15.5. 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. All copies made of an allegation file must be returned to the file or destroyed. These files must be maintained in a manner that is consistent with the Privacy Act.

A15.6. Allegation Information in Inspection Reports. The investigation into the allegation should be documented in an inspection report. It is important that the inspection reports protects 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.

A15.7. 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, **Attachment 14**.

A15.8. 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.

A15.9. Allegation to the NRC. Nothing in this attachment 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.