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ROBINS AIR FORCE BASE

ROBINS AIR FORCE BASE
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Aerospace Medicine

RADIATION PROTECTION PROGRAM

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This publication implements Air Force Manual (AFMAN) 48-148, *Ionizing Radiation Protection*, AFMAN 40-201, Radioactive Material (RAM) Management, Department of the Air Force Manual (DAFMAN) 48-125, *Personnel Ionizing Radiation Dosimetry* and the Air Force Instruction (AFI) 48-139, *Laser and Optical Radiation Protection Program*. This instruction applies to all personnel, including all tenants, working at Robins Air Force Base (RAFB), supported sites, outside agencies and contractors bringing radioactive material or devices on to RAFB, as well as contractors on RAFB whose duties require work with sources of ionizing radiation or work in areas where exposure to ionizing radiation may occur. This instruction does not apply to exposure of patients during diagnostic or therapeutic medical procedures. Persons subject to the Uniform Code of Military Justice (UCMJ), note that failure to comply with this publication is punishable as a violation of Article 92, of the UMCJ. Requests for waivers must come through the chain of command from the commander of the office seeking relief from compliance. Waiver requests must be submitted to the Office of Primary Responsibility (OPR); waiver authority has not been delegated. The waiver approval authority for all compliance items within this publication are at Wing Level (Tier T-3). Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Instruction (AFI33-322), *Records Management and Information Governance Program*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (DRS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. See **Attachment 1** for a glossary of references and supporting information.

SUMMARY OF CHANGES

This publication has been substantially revised and should be reviewed in full. Major changes include rewriting of the instruction to comply with all radiation and safety program elements outlined in, AFMAN 48-148, AFMAN 40-201, AFI 48 -139 and DAFMAN 48-125.

Chapter 1

PROGRAM OVERVIEW

1.1. Overview. This instruction implements AFMAN 48-148, Ionizing Radiation Protection, 20 July 2020, AFMAN 40-201, Radioactive Materials Management, 29 March 2019, AFI 48-139, Laser and Optical Radiation Protection Program, 22 April 2020 and DAFMAN 48-125, Personnel Ionizing Radiation Dosimetry, 27 October 2020. This publication establishes responsibilities, policies, and procedures to minimize occupational and environmental exposures to non-ionizing radiation exposure to Lasers and ionizing radiation exposure with the goal to keep exposures "as low as reasonably achievable" (ALARA) as required by AFMAN 48-148 and 10 CFR 20.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. The Installation Commander (78 ABW/CC) will.

2.1.1. Appoint, in writing, a qualified member from BE to serve as the IRSO.

2.1.2. Delegate authority to the IRSO to suspend installation operations involving RAM or RPD which pose a significant health risk to personnel, present a clear violation of regulations or requirements, or present a high risk of negative impact to USAF operations, materiel, or real estate.

2.2. Commanders or Directors of Units Possessing RPD (X-Ray Producing Devices) will.

2.2.1. Appoint, in writing, a Unit Radiation Safety Officer (URSO) to manage the unit's ionizing radiation safety program.

2.2.2. Ensure operationally necessary doses received by members of their unit are maintained ALARA and are weighed against operational requirements.

2.2.3. Implement a radiation safety program for each work center which uses RPD, which consists of, at a minimum, a written radiation safety program, inventory management, training, exposure control measures, and documented surveys. See **Chapter 3** for specific requirements for RPD-specific radiation safety program implementation.

2.3. RAM Permittees will.

2.3.1. Ensure a primary and alternate Permit Radiation Safety Officer (PRSO) have been appointed from their unit and are correctly indicated as such on the permit issued by the Air Force Radioisotope Committee Secretariat (RICS).

2.3.2. Submit renewal applications for template permits. Follow all conditions in the RAM. See **Chapter 4** for RAM permit-specific requirements for radiation safety program implementation.

2.3.3. Share all documentation regarding the RAM permit program with the IRSO, including the annual permit audit, inventory, written radiation safety program, and emergency response procedures.

2.3.4. Coordinate Air Force Inspection Agency (AFIA) RAM permit inspections with 78 ABW/IG. If violations are discovered during the inspection, the Permittee will submit corrective actions to AFIA in accordance with Air Force Instruction (AFI) 90-201, The Air Force Inspection System, and paragraph 8.9 with the assistance of the IRSO.

2.4. Commanders or Directors of Units Possessing Generally Licensed Devices (GLD) will.

2.4.1. Appoint a responsible individual to manage the unit's GLD program.

2.4.2. Maintain a document outlining the Nuclear Regulatory Commission (NRC) Sealed Source and Device Registry (SSDR) or manufacturer requirements for specific GLD possessed by the unit. Ensure all SSDR or manufacturer requirements are met.

2.4.3. Maintain an inventory of all GLDs, to include applicable SSDR numbers, and provide any changes or updates to the IRSO for inclusion in the Radioactive Materials Management Information System (RAMMIS).

2.5. The IRSO will.

2.5.1. Manage the base radiation safety program. The IRSO will serve as the focal point for all requests to use RAM or RPDs, including those used by contractors. The IRSO will also serve as an advisor for commanders, PRSOs, and URSOs on all aspects of radiation safety and compliance.

2.5.2. Conduct an annual radiation safety program review. This review must include: a review of procedures and practices, facility design and classification, training, exposure control monitoring, surveillance activities, dosimetry results and trends, review of this instruction, internal permit audit results, and GLD management.

2.5.3. Manage the base dosimetry program in accordance with DAFMAN 48-125 and Chapter 6 of this instruction. The IRSO will also conduct an investigation on any measured or calculated doses which exceed the investigation action level (IAL). Only personnel with a potential external dose of over 100 mrem should be enrolled in the dosimetry program. While some personnel receive dosimetry at the assessment of the IRSO, others must receive dosimetry. See AFMAN 48-148, AFMAN 40-201, and AFI 91-108, Air Force Nuclear Weapons Intrinsic Radiation and 91(B) Radioactive Material Safety program. The IRSO will make the final determination of who should be enrolled.

2.5.4. Conduct potential overexposure investigations and notification procedures in accordance with AFMAN 48-148.

2.5.5. Conduct exposure (scatter) surveys to measure and/or calculate potential doses for occupational radiation workers and the general public to ensure doses remain ALARA.

2.5.6. Maintain calibration data of all radiation equipment in accordance with AFMAN 40-201, paragraphs 2.17.16.10.

2.5.7. Maintain the base RAM inventory in RAMMIS, including all GLDs, permitted items, and exempt sources of RAM.

2.5.8. Assist the Permittee with the development and implementation of any corrective actions to correct any violations discovered during an AFIA inspection.

2.5.9. Coordinate requests for radioactive waste disposal.

2.5.10. Maintain pertinent records in accordance with **Attachment 2** of this instruction.

2.5.11. Approve training materials submitted by URSOs and PRSOs to ensure all requirements in AFMAN 48-148 and AFMAN 40-201 are met. The IRSO has final determination on which personnel in each work center require radiation training in accordance with AFMAN 48-148, paragraph 3.3. Training will be documented in an AF Form 55 or equivalent and will be made available upon request.

2.5.12. Serve as the base ionizing radiation safety and compliance expert during emergency response scenarios, including assisting wing leadership and the Incident Commander, if necessary. The IRSO must advise leadership on radiation protection procedures during interventions as outlined in Chapter 6 of AFMAN 48-148. The IRSO will also conduct reporting procedures in accordance with AFMAN 40-201, paragraph 5.1.

2.6. URSOs and PRSOs will.

2.6.1. Implement their unit's radiation safety program, follow all requirements as outlined in Chapters **3 and 4** of this instruction, and serve as the IRSO's single point of contact for their unit's materials, devices, and instruments.

2.6.2. Contact the IRSO prior to changing or modifying any operations involving radiation sources, including, but not limited to: facility modifications or movements, inventory changes, malfunctioning equipment and repairs, radiation hazard mitigation measures, source security, or tasks or processes involving radiation sources.

2.6.3. Maintain a current inventory of all RAM and/or RPD at all times and provide a copy to the IRSO upon request.

2.6.4. Ensure all radiation sources remain under the strict control of an authorized user or secure in a safe area at all times.

2.6.5. Oversee the unit's radiation safety training program, including ensuring the training materials have been approved by the IRSO. All occupational radiation workers and workers which may receive incidental radiation exposure must undergo initial radiation training upon being assigned to a work center at RAFB which uses ionizing radiation sources. The URSO or PRSO will contact the IRSO to determine which personnel require radiation safety training. Training will be documented on the AF Form 55, Employee Safety and Health Record or equivalent and must be made available to the IRSO or Bioenvironmental Engineering personnel upon request.

2.6.6. Maintain pertinent records in accordance with **Attachment 2** of this instruction.

2.6.7. Immediately report any incident in which personnel are potentially exposed to excessive ionizing radiation to the IRSO. PRSOs must conduct an internal audit on all aspects of the RAM annually, in accordance with specific conditions outlined in the permit. The audit report must be signed by the Permittee and PRSO and provided to the IRSO prior to the end of October each calendar year.

2.7. The 78th Medical Group will.

2.7.1. Conduct bioassay collection, if necessary, following an incident involving an accidental release of radioactive material.

2.7.2. Assist with filing of dosimetry reports in occupational radiation workers' medical records, in accordance with DAFMAN 48-125, Personnel Ionizing Radiation Dosimetry, and paragraph 2.5.3..

2.8. The 78th Civil Engineer Group will.

2.8.1. Consult the IRSO prior to any facility modifications or construction projects where radiation sources may be stored or used.

2.8.2. The Environmental Manager will:

2.8.2.1. Assist the IRSO with characterizing mixed wastes.

2.8.2.2. Direct requests by units for RAM disposal to the IRSO. NOTE: The unit must maintain possession of the materials until accepted by DLA or contractor for shipment. Neither the IRSO nor Civil Engineer personnel will accept RAM or RPD if the unit wishes to dispose of those sources.

2.8.3. Fire and Emergency Services and Emergency Management will:

2.8.3.1. Ensure radiation response activities comply with radiation protection measures required by AFMAN 48-148, Ionizing Radiation Protection, Chapter 6.

2.8.3.2. Maintain awareness of location of permitted materials on RAFB.

2.9. The 78th Security Forces Squadron (78 SFS) will.

2.9.1. Check work orders of incoming commercial transportation and allow entry onto RAFB to transporters of RAM that the IRSO has authorized for entry.

2.9.2. Maintain a log of all commercial traffic and work orders.

2.10. The 78th Air Base Wing Staff Judge Advocate (78 ABW/JA) will.

2.10.1. 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, Mixed Waste (MW), or Low Level Mixed Waste (LLMW), is the issue.

2.10.2. Be consulted when the IRSO requires assistance in interpreting either DOD or Air Force policy/instructions governing RAM, MW, or LLMW.

2.10.3. Serve as the legal advisor for claims or potential regulatory violations brought against the installation by Federal agencies or civilian parties.

2.11. Museum of Aviation (78 ABW/MU) will.

2.11.1. Ensure conditions in AFI 84-103 are met, including maintaining all radiation survey records provided by BE.

2.11.2. Identify all items and artifacts requiring radiation surveys and relying that information to BE.

2.12. Defense Logistics Agency (DLA) Distribution Depot, Warner Robins, GA (DDWG) will.

2.12.1. Ship, receive, store or otherwise manage radioactive materials in accordance with the NRC RAM license issued to DDWG as well as 10 CFR and 49 CFR.

2.12.2. Provide the IRSO with copies of any NRC license amendments or renewals.

2.12.3. Immediately report all known or possible loss, theft or release of RAM on RAFB to the IRSO.

2.13. DLA Disposition Services will.

2.13.1. Maintain radiation monitors at entrances to the recycling yard to prevent inadvertent acceptance of RAM.

2.13.2. Ensure monitors are confidence-checked regularly as required by manufacturer instruction. Immediately inform leadership and the IRSO of any disabling defects that prevent proper operation.

2.13.3. Immediately notify the IRSO of any suspected RAM-containing or –contaminated items to assist in positive identification of RAM. If the presence of RAM is confirmed, the shipment will be returned to unit that delivered it.

2.14. The Contracting Directorate (AFSC/PK) and Commanders or Directors of units utilizing contract support involving the use of RAM or RPDs will.

2.14.1. Ensure the IRSO reviews pertinent statements of work to assess radiation protection requirements prior to contractor(s) bringing RAM containing devices or RPDs onto the installation.

2.14.2. Coordinate with the IRSO to ensure all solicitations for goods or services that may require the use of RAM contain appropriate award selection criteria.

2.14.3. Require non-Air Force organizations to send written requests to the IRSO at least 30 calendar days prior to bringing RAM or RPD onto the base. Contractors must notify the IRSO every 30 days if they intend to continue using the source(s) on the base. The request must include the information listed in **Attachment 3**.

2.14.3.1. These requirements must be included in the statement of work and/or performance work statements for all 78 ABW contracts.

2.14.3.2. Contractors shall not bring RAM or RPD onto RAFB without the written consent of the IRSO.

2.15. The Business Operations Office (WR-ALC/OB) that brings in Public-Private Partnerships into ALC complex will.

2.15.1. Coordinate with IRSO for compliance with radiation protection requirements prior to bringing in RAM or RPD onto the installation.

2.15.2. Shall request written consent from IRSO prior to bringing in RAM or RPD. The request must include the information listed in **Attachment 3**.

2.15.3. For Air Force or Contractor owned RPDs that are intended to be used off base, please contact the Installation Radiation Safety Officer who would in turn liaison with the Chief, Radiation Health at Air Force Medical Readiness Agency (AFMRA) or the MAJCOM BE, Base Legal Office and the other parties involved for further guidance.

2.16. Work centers with Exempt Quantities of RAM (Check Sources) will.

2.16.1. Maintain an inventory of all sources, which must include: isotope, activity and date, location of sources, serial number and date of inventory and update IRSO.

2.17. Units, Supervisors of Workers using any type of RAM will.

2.17.1. Ensure all occupational radiation workers receive initial training prior to performing processes or tasks which involve the use of radiation sources.

2.17.2. Ensure all personnel enrolled in the dosimetry program properly wear their dosimeters and ensure proper storage of dosimeters.

2.17.3. Take measures adequate to prevent override of engineering controls, modification of personal protective equipment or tampering with radiation dosimeters or purposely exposing radiation dosimeters to radiation or RAM.

2.17.4. Immediately report any unsafe work practices, hazardous conditions, or incidents in which personnel are potentially exposed to excessive ionizing radiation to the IRSO, the URSO or PRSO, and the affected individual's chain of command.

2.18. Occupational Radiation Workers will.

2.18.1. Notify the IRSO if performing any non-Air Force radiation work (i.e., moonlighting). Monitoring results should be provided for inclusion in the Master Radiation Exposure Registry.

2.18.2. Notify the IRSO if receiving radioactive material medical diagnosis (e.g., cardiac stress test) or treatment (e.g., thyroid).

2.18.3. Pregnant military females must declare their condition to their supervisor or to their Primary Care Manager upon becoming aware. Civilian females are not required, but are recommended, to declare their pregnancy to their workplace supervisor.

Chapter 3

RADIATION-PRODUCING DEVICES

3.1. Overview. RPD's are machines which produce x-rays upon demand by the user. These instruments produce ionizing radiation.

3.2. Exposure Mitigation Measures. Utilize time, distance, and shielding when performing radiation operations.

3.2.1. Time. Personnel are required to limit the amount exposures to ionizing radiation to the shortest duration possible.

3.2.2. Distance. Personnel must be aware of the distance between their body and the RPD and maintain the greatest distance operations will allow.

3.2.3. Shielding. Personnel need to utilize shielding to the greatest extent possible between them and the source to reduce exposures to levels ALARA.

3.3. Radiation Safety Program. Each work center which uses RPD is required to institute and maintain a radiation safety program.

3.3.1. Written Radiation Safety Program.

3.3.1.1. The program must state a commitment to radiation safety policy and practices, including an inventory of all RPD's, procedures for transfer and acquisition for RPDs; documentation of where the sources are used as well as safety and security features for the facility; an outline training requirements, procedures for monitoring; surveillance and inspections; required use of controls to reduce exposures to levels ALARA; basic procedures for suspected incidents or accidents.

3.3.1.2. Personnel must fully utilize all controls and radiation mitigation measures required by their workcenter's written radiation safety program.

3.3.2. Exposure Survey and Dose Determination. The IRSO will ensure exposure surveys have been conducted on every operational RPD to ensure doses remain ALARA. Also, the survey includes a facility evaluation to determine shielding adequacy and proper signage.

3.3.3. Training Program. The IRSO must approve all training materials. The IRSO requires all occupational radiation workers and workers who may receive incidental radiation exposures to receive initial and annual radiation training. Training will be documented on the Form 55 or equivalent and must be made available to the IRSO or Bioenvironmental Engineering personnel upon request.

3.3.4. Dosimetry Program. Only personnel who have the potential to receive an external dose of 100 mrem are required to be enrolled in the dosimetry program. The decision to enroll individuals in the monitoring program is made by the IRSO. See **chapter 6** for details on the dosimetry program.

3.3.5. Annual Radiation Safety Program Review. The IRSO will conduct and document an annual radiation safety program review for every workcenter which uses RPD at least annually. The purpose of the review is to ensure exposures remain ALARA, to evaluate and document any changes in the workcenter which may affect radiation safety, and to assist the URSO as necessary.

Chapter 4

RADIOACTIVE MATERIAL PERMITS

4.1. Overview. Units may be required to use RAM for mission-essential purposes. If the quantity of RAM exceeds certain limits, the unit will be required to maintain a permit from the RICS in order to possess and use the material.

4.1.1. If a permit request is approved, the unit commander or equivalent serves as the Permittee for the life of the permit.

4.1.2. All conditions in the permit must be met at all times. Violations may result in the revocation of the permit by the RICS.

4.1.3. There are currently two active AF RAM non-template permits on RAFB.

4.2. Permit Application.

4.2.1. IRSO must be contacted to initiate the process.

4.2.2. The PRSO candidates will complete a 40-hour RSO course prior to application submission.

4.2.3. The unit commander will submit the permit application to the RICS via email to the RICS organizational box with supporting documentation (i.e. PRSO certificates) sending copies to the IRSO and AFMC BE.

4.3. Permit Renewal.

4.3.1. The Permittee is responsible for requesting a permit renewal. Renewal applications for template permits will be submitted 1-3 months prior to expiration and non-template permits will be submitted 3-6 months prior to the set expiration date to the RICS.

4.3.2. Once the renewal is submitted to the RICS, the unit may use the RAM in accordance with permit conditions (even if the expiration date passes) and a “Deemed Timely Filed” memorandum has been received from the RICS.

4.4. Permit Amendments.

4.4.1. The Permittee is responsible for submitting amendment requests through the IRSO. Amendments must be initiated as dictated by AFMAN 40-201, paragraph 3.4.3. Changes to permit conditions that require an amendment include, but are not limited to: PRSO or alternate PRSO appointment, mailing address, maximum quantity of authorized RAM, changes to RAM use or storage locations, or facility modification. Amendment requests must also be submitted when personnel listed on the permit, such as users or PRSO's, permanently cease their duties or change their names.

4.4.2. The Permittee may execute the permit in accordance with the submitted amendment if they have obtained verbal approval from the RICS and maintain a record of the changes until the amendment is granted. The documentation must include the effective date of change, a copy of the old and new radiation safety requirements, reason for the change, summary of radiation safety concerns to be considered with the change, and the signatures of the PRSO, authorized users and Permittee.

4.4.3. Permittees shall notify RICS through memorandum signed by the permittee whenever the permittee's identity or email address changes within 30 calendar days of the change.

4.5. Permit Requirements. The permit consists of specific requirements for the legal and safe use of RAM. The requirements include but are not limited to: proper isotope, proper physical form of the RAM, authorized use, authorized storage locations or conditions, appointment of PRSOs, survey requirements, audit requirements, and inventory requirements The PRSOs must scrutinize the permit to ensure all requirements are met.

4.6. Facilities. The PRSOs must ensure only RICS-approved locations are used to store and/or use RAM. The IRSO is responsible for conducting a baseline radiological assessment prior to material acquisition, if required in accordance with permit conditions, and an exposure survey for all use and storage locations.

4.6.1. If a Permittee wishes to move assets to a location which has not been previously assessed, the IRSO must be contacted no less than five days prior to coordinate the survey. If the new location is not approved by the RICS, the Permittee must submit a permit amendment and is not permitted to move the material until the amendment request is approved by the RICS.

4.6.2. The IRSO must conduct an exposure survey once assets have been acquired to ensure doses remain ALARA. The survey must also include a facility evaluation to determine shielding adequacy, proper signage, and source control and security features. Survey results shall include: a description or drawing of each measurement location; measured dose or contamination levels at each location; the type, model number, serial number, and calibration date of the instrument; name of individual performing the survey; and date of the survey.

4.6.3. An NRC Form 3, Notice to Employees, and NRC Form 3 Supplemental must be posted in the facility in plain sight near where the RAM is stored and used.

4.7. RAM Control and Security. All RAM sources must be under an authorized user’s control at all times or stored in a secure location which prevents access to non-authorized users.

4.8. Procurement and Acquisition of RAM. For guidelines on procuring items with RAM, follow AFJI 23-504 and AFMAN 40-201 paragraph 3.2. Prior to the acquisition and procurement of RAM, the PRSOs must acquire the permit (for AF and Navy units) or license (for Army and non-DoD entities) from the organization providing the RAM. The permit must be forwarded to the IRSO for review. The PRSOs must also conduct an inventory of RAM on hand and ensure additional items do not exceed maximum quantities permitted by the RICS on the RAM permit.

4.9. Receipt of RAM. DLA DDWG receives shipments containing radioactive materials and performs an inspection of the shipment, on behalf of the IRSO. The IRSO must be notified of any updates to the inventory of RAM kept at the DDWG warehouse.

4.10. Shipment, Transfer, and Disposal of RAM. Prior to the movement of any non-exempt RAM to RAFB, the PRSO of the unit accepting the transfer must possess the RICS-issued RAM permit or license. The PRSO of the receiving unit must provide a letter to IRSO upon receipt of the materials, that includes the license or permit number, issuing agency, expiration date, type, form of RAM received, and the authorized amount.

4.10.1. Shipment and Transfer. The DLA DDWG, on behalf of the IRSO, will advise on procedures, packaging and labeling requirements, shipping documentation based on specific permit requirements.

4.10.2. Disposal. Items containing RAM shall not be submitted to DRMO for demilitarization or disposal. The IRSO will coordinate shipping and disposal efforts with AFRRAD on behalf of the PRSO and Permittee.

4.11. Inspections. AFIA may inspect RAM permits at any time. The Permittee and PRSO must involve the IRSO in all RAM permit inspection efforts. If violations are discovered by the inspector, the AFIA Inspector will provide specific instructions to the Permittee, PRSO, and the IRSO. Inspection actions for each type of violation are outlined in AFMAN 40-201, chapter 6. The IRSO will assist the Permittee and PRSO in addressing any findings and violations in accordance with AFMAN 40-201.

4.12. Incidents and Mishaps. The Permittee (or IRSO or PRSO if Permittee is unavailable) is responsible for conducting an investigation regarding the RAM program.

4.12.1. If an incident occurs after hours, unit supervisor or PRSO will contact the 78th Air Base Wing Command Post. The Command Post will contact the on-call BE technician who will notify IRSO.

4.12.2. The IRSO will report the incident to the RICS and to the AFMC BE immediately.

4.12.3. Time limits for reports begin when the event occurs or is first discovered. Incidents requiring an immediate report must be forwarded within three hours. Include all available information outlined in Chapter 5 of AFMAN40-201.

4.12.4. A copy of all written reports on accident-investigation must be forwarded to the IRSO, Installation Commander, AFMC BE, AFMC functional office and AFIA/SG. The RICS will decide when an investigation of an event involving RAM governed by this instruction is complete.

4.13. Permit Termination. This process requires a great deal of coordination with the IRSO, including a comprehensive decommissioning survey of all facilities where RAM was worked with or stored, Once the Permittee decides to terminate the permit, the IRSO must be contacted by the Permittee as soon as possible to begin coordination and termination procedures. The IRSO will coordinate with the RICS directly on the specific sampling, monitoring, and documentation requirements to support the Permittee's request. The IRSO will ensure all decommissioning steps established by the RICS are followed.

4.14. Non-Air Force RAM Licenses. All work involving RAM by non-AF entities must be covered by an NRC License. Entities must submit documentation IAW **Attachment 3** prior to bringing RAM onto RAFB. Current NRC License holders on RAFB are Lockheed Martin and DLA. All changes to NRC Licenses will be provided to the IRSO.

Chapter 5

GENERALLY LICENSED DEVICES

5.1. Overview. GLDs are devices which contain exempt quantities of radioactive material. These quantities are usually very small and do not pose a health threat. Often, radiation cannot be detected because the source is so small and it is fully enclosed inside the instrument.

5.2. Unit GLD Program Appointee Responsibilities. The program appointee, designated by unit commander, is responsible for managing the GLD program for their unit as outlined in AFMAN 40-201, paragraph 3.10.

5.2.1. The SSDR is a listing of all GLDs and their unique requirements. The appointee must maintain a copy of the SSDR and must provide a copy to the IRSO.

5.2.2. The appointee must provide the IRSO an updated inventory every six months so the items can be uploaded into RAMMIS in accordance with AFMAN 40-201 paragraph 3.10.3.1.3.

5.2.3. If required by manufacturer instruction or the SSDR, the device must be tested for leakage, and proper operation of any on-off mechanism or indicator, if any, must be leak tested at no longer than six month intervals, or as specified by the manufacturer or SSDR. The appointee must coordinate the leak tests with the IRSO so that appropriate protocols and materials are used.

5.2.3.1. 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.

5.2.3.2. 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.

5.2.4. The unit purchasing the GLD must contact the IRSO prior to acquisition. Once the unit arrives, leak test results must accompany the package, and a copy of these results must be sent to the IRSO. If this test does not accompany the sealed source, BE must perform the leak test before the item is placed into use. The appointee must inventory the item immediately upon receipt and send the updated inventory to the IRSO.

5.2.5. Units shall not transfer GLDs to entities outside of the installation, unless the entity possesses a specific license for the item(s); however, 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 through the IRSO. Inventories must be updated in RAMMIS to reflect the transfer or movement IAW AFMAN 40-201 paragraph 3.10.4.2.

5.2.5.1. Any items that had contained RAM will be certified by BE as free of radiation prior to being submitted to DRMO. Any removed RAM will be securely stored by the owning unit until disposal is coordinated through the IRSO and AFRRAD.

5.2.5.2. A leak test and shutter test, if required by the SSDR, must be performed prior to transferring the device.

5.2.5.3. The IRSO will advise the unit on packaging and labeling requirements and shipping documentation based on specific permit requirements. The IRSO will use the AFRRAD shipping checklist to ensure compliance and safety. Alternatively, shipment may be handled through DLA DDWG. The gaining unit shall provide verification of receipt, to include serial numbers, to the losing unit. The appointee will provide an updated inventory to the IRSO once the item has shipped.

Chapter 6

IONIZING RADIATION DOSIMETRY

6.1. Investigation Action Level (IAL). The IRSO establishes the IAL for RAFB based on historical exposure records for each zone.

6.2. Procedures if Dosimetry Result Exceeds IAL. An investigation will be conducted if doses for either Optically Stimulated Luminescence (OSL) or electronic personal dosimeters (EPD) exceed the IAL. The investigation must cover: circumstances surrounding the abnormal exposure, the validity of the dose received, the portion of the body exposed, assessment of the consequences, any corrective actions required preventing recurrence, the name, social security number, occupational code and AF specialty code of all individuals involved, and mitigation or prevention of such a personnel dose equivalent of similar magnitude in the future.

6.3. Loss, Damage or Misuse of OSL. In the event that an individual's assigned OSL is lost, damaged or exposed to radiation when not monitoring the individual during the execution of their duties on RAFB, dosimetry program manager must be notified immediately. A statement must be submitted with the signature of the individual and their supervisor before a replacement OSL will be issued. The statement must include the circumstances of the incident and what measures will be taken in the future to prevent recurrence. The individual will be retrained by the dosimetry program manager, when issued a replacement OSL. The IRSO will explain the occurrence of lost or damaged dosimeters to USAFSAM at the end of the monitoring period and assign an appropriate dose equivalent for the monitoring period in accordance with DAFMAN 48-125 paragraph 5.1.1.

6.4. Overexposure. If the IRSO determines a Federal dose limit has been exceeded, notification, reporting, and investigation procedures will be followed in accordance with DAFMAN 48-125, Chapter 9 - Potential Overexposures.

Chapter 7

LASER SAFETY PROGRAM

7.1. Roles and Responsibilities. Unit Commanders.

7.1.1. Will appoint a Unit Laser Safety Officer (ULSO) for units operating at least one Class 3B or Class 4 laser (even if these lasers are contained within a Class 1 enclosure). A copy of the appointment letter will be send to the Installation Laser Safety Officer (ILSO).

7.1.2. Will ensure that all DoD personnel who operate laser systems or who could potentially be exposed to laser radiation are properly trained and comply with all federal, state, Air Force, and Robins AFB laser safety regulations and requirements.

7.1.3. Will ensure all non-DoD personnel who operate laser systems or could potentially be exposed to laser radiation are briefed on the associated hazards.

7.2. Unit Laser Safety Officer.

7.2.1. Adhere to the LSO duties and responsibilities detailed below and those specified in AFI 48-139 paragraph 2.23.

7.2.2. Implement their unit's laser safety program, follow all requirements as outlined in **Chapters 3** of this instruction, and serve as the IRSO's single point of contact for their unit's materials, devices, and instruments.

7.2.3. Will be trained according to ANSI Z136.1.

7.2.4. Will develop and manage a unit laser and optical radiation safety program.

7.2.5. Will assist the unit commander in developing policies, procedures and/or instructions.

7.2.6. Will Coordinate suspected laser accidents/incidents with the ILSO/BE, SEG, etc.

7.2.7. Will act as a POC for the unit on laser and other optical radiation safety matters and maintain lines of communication with the ILSO, BE, SEG, and PH personnel.

7.2.8. Coordinate laser and other optical radiation evaluation activities with unit command, supervisory personnel, and the ILSO.

7.2.9. Will notify the ILSO when new lasers are obtained.

7.2.10. Will submit an annual inventory of all Class 3B and Class 4 lasers to the ILSO and will notify the ILSO when this information changes.

7.3. Workplace Supervisors.

7.3.1. Will cease any laser operation when conditions present or could potentially present a safety or health hazard.

7.3.2. Will ensure initial and termination occupational laser eye exams are completed for all DoD employees who work with or could potentially be exposed to laser radiation.

7.3.3. Will notify ULSO when a laser's status, use, or location changes.

7.4. Installation Contracting.

7.4.1. Will ensure that the Unit Project/Program Manager includes the statement of work for contracted laser operations. Documents will specify that personnel who operate or could potentially be exposed to laser radiation comply with AF safety standards and requirements.

7.4.2. Ensures government contractors implement AFI 48-139 pursuant to the terms of their governing contract for any purchase of Class 1M, Class 2M, Class 3R, Class 3B, or Class 4 laser systems.

7.4.3. Informs contractors to notify ILSO at least 30 days in advance of operations using military specific laser systems.

7.4.4. Ensures that all solicitations for goods and services that use or contain a Class 1M, Class 2M, Class 3R, Class 3B, or Class 4 laser system, including commercial-off-the-shelf (COTS) lasers must be approved by the ILSO prior to obtainment and use.

7.5. Installation Laser Safety Officer.

7.5.1. Appointed by the Installation Commander IAW AFI 48-139 paragraph 2.15.3, typically the most senior Bioenvironmental Engineering (BE) Flight Officer. Given authority by the Installation commander to suspend installation operations.

7.5.2. Adheres to the LSO duties and responsibilities in accordance with ANSI Z136.1.

7.5.3. Will maintain an inventory of all Class 3B and Class 4 laser systems at Robins AFB.

7.5.4. Will approve and review all outdoor laser use.

7.5.5. Incorporates laser and optical radiation hazard evaluations into the special surveillance processes described in Air Force Instruction (AFI) 48-145, Occupational and Environmental Health Program.

7.5.6. Will establish a Laser Safety Committee (LSC).

7.5.7. Coordinates suspected accidents or incidents.

7.5.8. Ensures each unit employing military-specific lasers maintain a copy of the AF LSSRB approval letter and hazard evaluation.

7.5.9. Accomplishes and documents completion of required training.

7.5.10. Maintains evaluations of hazardous laser and optical radiation equipment.

7.6. Base Laser Safety Program.

7.6.1. Before operating any Class 3B or Class 4 laser system, the laser must be evaluated, added to the inventory, and given an inventory tag. This tag will then be provided to the ILSO. After this, the laser is approved for use.

7.6.2. The ULSO or ILSO must be notified when any laser information changes or in the termination of laser use.

7.6.3. Laser pointers for general use are limited to Class 3A (less than 5 mW power) or lower. Any pointer exceeding this requirement must have a variance letter issued by the United States Food and Drug Administration Center for Devices and Radiological Health and be approved for use on base by the ILSO.

7.6.4. Prior to sending a decommissioned laser system to the Defense Reutilization and Marketing Office (DRMO), remove the inventory tag and give it to the ILSO at building 207.

7.6.5. Each unit utilizing at least one Class 3B or Class 4 laser system must have written standard operating procedures (SOP). The manufacturer's instructions may supplement this requirement. A copy of the SOP will be sent to the ILSO.

7.6.6. Warning signs must be affixed to all entrances into areas where Class 3B or Class 4 laser systems are used. The signs will include wavelength, pulse duration, maximum energy output, and class.

LINDSAY C. DROZ, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFMAN48-148, *Ionizing Radiation Protection*, 20 July 2020

AFMAN 40-201, *Radioactive Materials Management*, 29 March 2019

DAFMAN 48-125, *Personnel Ionizing Radiation Dosimetry*, 27 October 2020

AFI 48-139, *Laser and Optical Radiation Protection Program*, 22 April 2020

Title 10 CFR Part 20, *Standards for Protection Against Radiation*, 29 December 2020

Title 10 CFR Part 31.5, *NRC General License Requirements*, 26 August 2020

Title 29 CFR 1910.1096, *Occupational Safety and Health Standards - Ionizing Radiation*, 20 June 1996

Title 49 CFR Parts 171 through 199, *Transportation Requirements*, 13 June 2016

Prescribed Forms

None

Adopted Forms

NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters*

NRC Form 3, *Notice to Employees*

Supplementary Notice to NRC Form 3, *Supplementary Notice*

Abbreviations and Acronyms

AFB—Air Force Base

AFFRIMS—Air Force Record Information Management System

AFIA—Air Force Inspection Agency

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command AFI—Air Force Instruction

AFRRAD—Air Force Radioactive Recycling and Disposal

ALARA—As Low As Reasonably Achievable

BE—Bioenvironmental Engineering

CFR—Code of Federal Regulations

DDWG—Distribution Depot, Warner Robins

DLA—Defense Logistics Agency

DOT—Department of Transportation

DRMO—Defense Reutilization Management Office

GLD—Generally Licensed Device

IAL—Investigation Action Level

IAW—In Accordance With

IRSO—Installation Radiation Safety Officer

NRC—Nuclear Regulatory Commission

OPR—Office of Primary Responsibility

PRSO—Permit Radiation Safety Officer

RAFB—Robins Air Force Base

RAM—Radioactive Material

RAMMIS—Radioactive Materials Management Information System

RDS—Records Disposition Schedule

RICS—Radioisotope Committee Secretariat

RPD—Radiation-Producing Device

SSDR—Sealed Source and Device Registry

UCMJ—Uniform Code of Military Justice

URSO—Unit Radiation Safety Officer

USAF—United States Air Force

USAFSAM—United States Air Force School of Aerospace Medicine

Attachment 2

RECORD RETENTION REQUIREMENTS

Table A2.1. 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 is made		10 CFR Part 20.2102 (b)
Leak tests, surveys, inventories, and calibrations	3 years after record is made		10 CFR Part 20.2103 (a)
External dose determination surveys	Until permit termination	Must use rem, rad, Ci, in accordance with 10 CFR Part 20.2101	10 CFR Part 20.2103 (b) 1
Internal dose determination surveys	Until permit termination	Must use rem, rad, Ci, in accordance with 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
NRC Form 4	Until permit termination		10 CFR Part 20.2104 (f)
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
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)

Required Record	Record Maintenance	Notes	CFR Reference
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 30.51
Receipt of permitted material	As long as possessed	Unless otherwise specified	10 CFR 30.51 (a) (1)
Transfer of permitted material	3 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)	3 years after transfer	Transferee permit should be received before transfer of material takes place	10 CFR Part 30.41 (c) and (d) (1) 10 CFR Part 30.51
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 (b)
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
Industrial package certification (other than IP-1 package)	2 years after last shipment		49 CFR Part 173.411(c)

Attachment 3

NON-AIR FORCE REQUESTS TO USE RAM OR RPD ON RAFB

A3.1. Overview.

A3.1.1. All non-Air Force organizations, including contractors, are required to send written requests to the IRSO at least 30 calendar days prior to bringing RAM or RPD onto the base. Organizations are prohibited from bringing RAM or RPD onto the base without written permission from the IRSO.

A3.1.2. The IRSO can be reached by calling the BE office at commercial (478) 327-7555, DSN 497-7555 or by emailing **usaf.robins.78-mdg.mbx.SGPB-BIO@mail.mil**.

A3.2. RAM Request. The request must include the following information, at a minimum:

A3.2.1. A description of the proposed activities on NRC Form 241.

A3.2.2. The procedures established to ensure radiological health and safety of Air Force personnel and the public while on Air Force installations; the name, local address, and telephone number for the responsible local representative; and the name, address, and telephone number of the PRSO named on their permit or license.

A3.2.3. A current copy of the permit or applicable NRC, or Agreement State License. Expired permits/licenses are unacceptable. To be valid at the installation, the permit/license must either specifically state the installation by name on the permit/license, or state approval for work at temporary job sites anywhere in the United States where the NRC or Agreement State maintains jurisdiction.

A3.2.4. Copies of the most recent leak test results (not over 180 days old) for sealed sources.

A3.2.5. Copies of training certificates for authorized users.

A3.3. RAM Transportation. Non-Air Force users of RAM must.

A3.3.1. Adhere to 10 CFR and 49 CFR sections pertaining to transportation of radioactive material.

A3.3.2. Notify the IRSO when RAM arrives on base and when the RAM is removed from the base.

A3.4. RPD Request. The request must include the following information, at a minimum: x-ray unit manufacturer; model number; serial numbers; maximum kVp, mA, and seconds; and ionizing radiation source/emitter.

A3.5. Additional Required Information. Both RAM and RPD requests must include:

A3.5.1. The part of the Air Force contract describing work to be done at the installation, inclusive dates of such work, the specific location of the work on the base, and safety and hazard and control mitigation measures.

A3.5.2. An acknowledgement that the IRSO can make unannounced periodic checks to ensure the contractor is following applicable radiological health and safety practices, which prevent unnecessary exposures to Air Force personnel and prevent potential contamination of government property, if applicable. The IRSO must identify deficiencies to the contracting officer for corrective actions. In addition, the IRSO, in coordination with the Chief of the Contracting Office, have authority to suspend contractor operations believed to be unsafe.