

**BY ORDER OF THE COMMANDER
354TH FIGHTER WING (PACAF)**

354 FW INSTRUCTION 40-201

7 MARCH 2012

Medical Command

RADIATION PROTECTION PROGRAM



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RELEASABILITY: There are no releasability restrictions on this publication

OPR: 354 MDOS/SGOJ

Certified by: 354 MDG/CC
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Supersedes: 354FWI 40-201,
29 December 2009

Pages: 17

This instruction implements AFI 40-201, *Managing Radioactive Materials in the US Air Force* and AFPD 40-2, *Radioactive Materials (Non-Nuclear Weapons)*. It establishes the radiation protection program for Eielson AFB (EAFB), including procedures and responsibilities to manage exposure to both ionizing and nonionizing radiation, and procedures to acquire, receive, store, distribute, use, transfer, and dispose of radioactive materials on EAFB. It also sets procedures for controlling radiation sources used by contractors on base and for investigating and reporting radiological accidents and incidents. This instruction does not apply to exposures received during medical and dental diagnostic exposures, DoD weapons shipments, and Department of Energy (DOE) activities related to SAFE HAVEN requirements. This instruction applies to all Air Force military and civilian personnel, ANG units, and associate organizations involved in operating electronic equipment that produce radiation, or using radioactive materials on or controlled by EAFB. 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>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF IMT 847, *Recommendation for Change of Publication*; route AF IMT 847s from the field through the appropriate functional's chain of command.

SUMMARY OF CHANGES

Updates unit phone numbers and office symbols from unit change. Reflects update in AFI 48-148 (11 July 2008).

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1. General. This instruction serves as the comprehensive, written radiation program for EAFB. It encompasses radioactive material (RAM), and machines or devices that produce ionizing, radio frequency, microwave or laser radiation. It is intended to safeguard the health of military and civilian employees, while permitting maximum benefits from the use of radiation emitters.

1.1. There are two types of radiation that can pose an occupational hazard.

1.1.1. Ionizing radiation is radiation with enough energy to change the electron structure of human cells. The health effects of ionizing radiation include increased risk of cancer and birth defects.

1.1.2. Nonionizing radiation does not contain enough energy to change the electron structure of human cells. The health effects of nonionizing radiation include deep tissue heating and cataracts (Radio Frequency Radiation), and eye/skin damage (laser radiation).

1.2. All exposures to ionizing radiation shall be as low as reasonably achievable (ALARA) with existing technology, costs, and operations requirements. Since Radio Frequency Radiation and lasers are not linked to increased cancer risk, ALARA does not apply to nonionizing radiation emitters.

2. Responsibilities:

2.1. 354th Fighter Wing Commander:

2.1.1. Appoints the base bioenvironmental engineer to be the base Radiation Safety Officer (RSO) in accordance with AFI 40-201. RSO authority includes terminating any operation deemed immediately hazardous to health, safety, or the environment.

2.1.2. 354th squadron commanders will identify, in writing to the Permit RSO, a Unit RSO of workplaces that use radioactive materials or radiation producing devices (including ionizing, Radio Frequency and laser) producing devices.

2.1.3. Approves the public notifications for radiological incidents and accidents prepared by FW/ PA.

2.2. 354th Contracting Squadron Commander (354 CONS/CC) and 168th Air Refueling Wing Contracting Office (168 ARW/LRSGC):

2.2.1. Coordinate all proposed facility construction contracts, service contracts, and contract modifications that include radiation operations with the base RSO prior to award. This includes contracts requiring soil density measurements with nuclear gauges, and lead paint surveys using x-ray fluorescence (XRF) devices.

2.2.2. Ensure all contracts requiring radiation services direct the contractor to comply with AFI 40-201, 10 Code of Federal Regulations (CFR) parts 0 through 199, and this instruction.

2.2.3. Ensure the radiation use report described in paragraph 11 is included as a deliverable item in the customers' requirement package.

2.2.4. Forward Contractor Radiation Safety (CONRAS) Permit Applications to the base RSO as described in paragraph 11.

2.2.5. Coordinate with the base RSO prior to contracting any work that may involve static display aircraft or any other alloys containing thorium, depleted uranium, or any other radioactive material.

2.3. The 354th Civil Engineering Squadron (CES/CEC, CES/CEO and CES/CEAN) will:

2.3.1. Ensure contract specifications contain the requirements of paragraph 11.

2.3.2. Ensure project engineers and contract management inspectors are familiar with the requirements of this instruction and report any discrepancies immediately to the base RSO.

2.3.3. Coordinate disposal of all government-owned radioactive material through the base RSO.

2.3.4. Coordinate with the base RSO prior to contracting any work that may involve static display aircraft or any other alloys containing thorium, depleted uranium, or any other radioactive material.

2.4. The 168th Civil Engineering Squadron will:

2.4.1. Ensure contract specifications contain the requirements of paragraph 11.

2.4.2. Ensure project engineers and contract management inspectors are familiar with the requirements of this instruction and report any discrepancies immediately to the base RSO.

2.4.3. Turn government owned radioactive material into 354 CES Hazardous Waste Section.

2.5. The 354th Fighter Wing Safety Office (354 FW/SE) and 168th Air Refueling Wing Safety Office (168 ARW/SE) assist the base RSO in investigating and reporting radiation incidents or accidents.

2.6. The 354th Fighter Wing Public Affairs Office (354 FW/PA) prepares all public notifications for 354th FW/CC approval and notifies local and state agencies as described in paragraph 10.

2.7. The 354th Security Forces Squadron (354 SFS/CC):

2.7.1. Assists in investigating theft, damage, or vandalism to any radioactive source or device on AF property.

2.7.2. Provides security or crowd control in the event of a radiation accident or incident.

2.7.3. Verifies contractors' authorization to enter the base.

2.7.4. If questions arise as to contractor possession of radioactive materials, call the base RSO at 377-6687. After duty hours, contact the Command Post at (377-1500), and ask for the base bioenvironmental engineer.

2.8. 354th Medical Operations Squadron Aerospace Medicine team (354 MDOS) performs or arranges for referral and follow-up examinations to investigate and document suspected radiation overexposures. Specific examination requirements are described in AFOSH Standards 48-9 and 48-139, and DoD Instruction 6055.5 and DoD Manual 3150.8-M.

2.9. Bioenvironmental Engineering (BE) (354 MDOS/SGOJ) establishes, administers, and executes the base radiation protection program. This includes, but is not limited to:

2.9.1. Serving as the base RSO, as required by AFI 40-201, and the Air Force Field Museum RSO as required by AFI 84-103.

2.9.2. Evaluating the hazards presented by radiation sources.

2.9.3. Overseeing the receipt, shipment, transfer, and disposal of radioactive materials specified in radioactive materials permits.

2.9.4. Coordinating on all construction plans and work orders to install or relocate radiation-producing devices.

2.9.5. Providing emergency support and technical expertise in the event of spills, explosions, fires, etc., involving radiation.

2.9.6. Directing the personnel dosimetry program as required by AFI 48-125.

2.9.7. Maintaining an inventory of AF-owned radioactive material on EAFB and geographically separated areas under the control of associate units.

2.9.8. Conducting or arranging for investigations of suspected personnel overexposures to radiation.

2.9.9. Developing the base radiation training program, and assisting commanders in training and instructing personnel in radiation protection and health precautions.

2.9.10. Processing and issuing CONRAS permits after reviewing the agencies' applications for accuracy and completeness.

2.9.11. Acting as liaison to the USAF Radioisotope Committee (RIC) and, with RIC approval, the Nuclear Regulatory Commission in the event of an incident involving radiation.

- 2.9.12. Review permits held by the 354th Fighter Wing, 168th Air Refueling Wing and geographically separated areas under the control of associate units.
- 2.9.13. Performing initial radiation surveys and inventories of static display aircraft, and conducting wipe sampling every three years.
- 2.9.14. Brief the base leadership and attending agencies about the base radiation safety program, permitted radioactive materials, and Generally Licensed Devices (GLD'S) annually during the Environmental, Safety, and Occupational Health Council meetings.
- 2.9.15. Receiving radioactive materials from other base agencies and coordinating with appropriate Air Force agencies to either recycle or dispose of the item properly.
- 2.10. 354th MXS Responsibilities include, but are not limited to:
- 2.10.1. The commander (354 MXS/CC) will designate, in writing, a liaison/points of contact for the Fabrication Flight. The liaison/POC should be someone familiar with all the regulations and technical requirements governing Unshielded and Shielded, X ray operations and monitor for potentially-radioactive aircraft component or materials utilized for repairs.
- 2.10.2. 354 MXS Fabrication Flight (354 MXS/MXMF)
- 2.10.2.1. Ensure personnel abide by the most recent "Unshielded, Restricted X-Ray Operations" report published by BE for obtaining "on aircraft" x-rays and the "Shielded, Unrestricted" report published by BE for x-ray procedures in the Nondestructive Inspection laboratory.
- 2.10.2.2. Coordinate with bioenvironmental engineering prior to performing sheet metal work on any aircraft component that may contain magnesium/thorium alloy, depleted uranium or any other potentially-radioactive aircraft component.
- 2.11. 354 LRS Responsibilities include, but are not limited to:
- 2.11.1. The commander (354 LRS/CC) will ensure all radioactive materials are properly received, stored, monitored, issued and shipped as described in the USAF Radioactive Material Permits listed in paragraph 2, and AFI 40-201 and AFMAN 23-110, *USAF Supply Manual*.
- 2.11.2. 354 LRS/LGRMR (Receiving Section):
- 2.11.2.1. Report accidents or material deficiencies to the base RSO immediately. During duty hours call 377-6687. After duty hours call the Command Post or the after hour primary care number, 377-1500.
- 2.11.2.2. Follow the procedures in section 7 for receiving radioactive material.
- 2.11.2.3. Forward information for all Type Cargo Code "A" items to BE. 354 LRS/LGRMR (Receiving Section) will assign a health hazard flag and excess exception code "B" to all Type Cargo Code "A" and "4" stock numbers.
- 2.11.3. 354 LRS/LGRTC (Cargo Movement) will:
- 2.11.3.1. Ensure any radioactive components are properly marked, packaged, classified, identified, and manifested in accordance with 10 Code of Federal

Regulations (CFR) Part 71, "Packaging of Radioactive Material," 49 CFR, "Transportation," and paragraph 7 of this instruction.

2.11.3.2. Obtain a "Report of Shipment" certified receipt for radioactive materials, and provide a copy of the return receipt to the base RSO.

2.12. **168th Air Refueling Wing Chief of Supply (168 LRS/LGS):** Ensures all radioactive materials are properly received, stored, monitored, issued, and shipped as described in the USAF Radioactive Material Permits listed in paragraph 2, and AFI 40-201.

2.13. **Commander, Detachment 460:** Report incidents, accidents or material deficiencies that occur on EAFB, or require EAFB response assets, to the base RSO immediately. During duty hours call 377-6687. After duty hours call the Command Post or the after hour primary care number, 377-1500 and ask for the base bioenvironmental engineer.

2.14. Supervisors of workplaces that use radiation sources, or have potential exposure to radiation:

2.14.1. Prepare radiation safety training plans as required by AFOSH Standards 48-9, 48-139 and AFI 40-201 and submit them to BE for approval. Training plans must clearly identify locations, hazards, control of emergency procedures for radiation, and a review of the latest BE hazard evaluation, concentrating on any deficiencies and recommended corrective actions. For ionizing radiation sources, training plans must also include ALARA philosophy and practice, including a review of the unit's past year's exposure history and results from any overexposure investigation, and the health risks to fetuses of women occupationally exposed during pregnancy.

2.14.2. Maintain an inventory of all radiation sources either in their organization or under their control. Those organizations that have permitted items, they must send a copy of the inventory containing the following information to the base RSO every 6 months, with the exception of classified information or specifications.

2.14.2.1. Radioactive materials. Nomenclature, radioisotope, activity, quantity, national stock number (if applicable), and locations used and stored.

2.14.2.2. X-ray devices. Name, make, or model, brief description of use, quantity, and locations used.

2.14.2.3. Radio Frequency Radiation emitters. Operational characteristics found on AF Form 2759, Radio Frequency Emitter Survey.

2.14.2.4. Laser Operational characteristics found on AF Form 2760, Laser Hazard Evaluation.

2.14.3. Immediately report any incidents to the base RSO. During duty hours call 377-6687. After duty hours call the Command Post at 377-1500. Report any suspected radiation overexposures to the Permit and base RSOs. Ensure personnel promptly report to the base clinic for examination. Ensure that equipment or conditions remain unchanged, as much as possible, to expedite the overexposure evaluation and possible re-creation of the incident in accordance with paragraph 10.

2.14.4. Coordinate with the base RSO before procuring, using, receiving, and/or storing any radiation-producing devices, or changing the working conditions or mission activities which may affect the radiation protection program.

2.14.5. Enforce wing and unit radiation safety regulations and operating instructions, provide all necessary safety equipment, and ensure all personnel know proper safety procedures.

2.14.6. Immediately refer pregnant workers to Public Health as required by AFI 44-102 and AFI 48-125.

2.14.7. Maintain copies of Armstrong Laboratory exposure reports (AL Listing 1499, Report of Occupational Exposure to Ionizing Radiation) for personnel on the personnel dosimetry program and report exposures to each individual. Agencies operating under a radioactive material permit must maintain their 1499 listings for at least three years. All others must maintain the listings until they receive a current AF form 1527-1, Annual Report of Individual Occupation Exposure to Ionizing Radiation.

3. USAF Radioactive Material Permits (RAMP). The USAF Radioisotope Committee (USAF RIC), holds a single broad-scope Nuclear Regulatory Committee (NRC) license. The USAF RIC is the sole authority within the AF to approve and control use, possession, receipt, transfer, and disposal of all radioactive material for which the NRC has jurisdiction. No radioactive material can be procured or accepted without a USAF RIC permit, except as provided for in AFI 40-201.

3.1. Obtaining USAF RAMP. Follow the procedures outlined in AFI 40-201. The permit holder is responsible for submitting renewal applications far enough in advance of the old permit's expiration date to ensure continued compliance.

3.2. Control Procedures. Using organizations must fully comply with specific requirements contained in the USAF RAMP. The base RSO and permit RSO conducts periodic surveys to ensure compliance. Swipe/leak tests are performed by the permit holder as specified in the permit and then submitted to the permit RSO. The permit RSO will assign a unique tracking number, perform initial readings, and ship the samples to the laboratory for confirmation. The permit RSO will review and sign laboratory reports, file a copy in the permit binder and distribute a copy to the permittee.

3.3. Documentation. The using organization maintains all original documentation concerning the RAMP. The Permit RSO maintains a duplicate copy. Permit termination does not relieve the user of documentation requirements for at least three years following the termination of the permit.

4. Radioactive Waste Disposal Procedures: Specific procedures and requirements for radioactive waste disposal are found in AFI 40-201. Coordinate ALL disposal actions through the base RSO.

5. Ionizing Radiation Exposure Control and Monitoring:

5.1. Occupational exposure limits for radiation workers are in 10 CFR 20 Subpart C, including those for pregnant workers. A pregnant worker's unborn child must not receive an accumulated dose greater than 0.5 rem. Dose limits for members of the general public are in 10 CFR 20, Subpart D.

5.2. Monitoring ionizing radiation exposures:

5.2.1. BE issues thermoluminescent dosimeters (TLDs) to personnel who are likely to receive an accumulated ionizing radiation dose exceeding 10 percent of the exposure guidelines set in 10 CFR 20. BE monitors personnel doses as specified by AFI 48-125.

5.2.2. Units are responsible for funding/obtaining dosimetry devices other than TLDs.

5.2.3. Personnel must never tamper with their TLD. Should a TLD be accidentally damaged or exposed, return it to BE immediately. Personnel must explain the nature of the incident to assist in evaluating the actual dosage received, if any.

5.2.4. Personnel wear their TLD only while performing radiation duties and store it with the control TLD. They never wear the TLD when receiving dental or medical diagnostic examinations.

5.3. TLD Medical Monitoring Requirements. Each individual either newly assigned to radiation duties or arriving at EAFB for assignment to radiation duties reports to BE, building 3349, before starting those duties. At BE they receive a radiation safety briefing and instructions on the proper use and wear of TLDs. Females are informed of radiation hazards to a developing fetus as well as procedures to follow if they suspect they are pregnant.

6. Procedures for Radioactive Materials.

6.1. Storage. All markings on an isotope in storage must be in such a position that no radiological hazards exist to personnel reading them.

6.2. Receipt. The 354 LRS or 168 LRS will normally be the first organization to receive radioactive material, but all organizations are responsible for ensuring package receipt complies with the following requirements.

6.2.1. Call the base RSO immediately (377-6687 or x1500 after duty hours) upon receiving any radioactive material labeled with a Department of Transportation (DOT) Standard Form (SF) 414 indicating a RAD I, RAD II, or RAD III radiation label (49 CFR 172.403). The base RSO will arrange a receipt survey for the package, if necessary and/or update the radioactive material inventory. If any shipment appears damaged, has broken seals, or appears to have been tampered with, isolate the container and inform the base RSO of the damage.

6.2.1.1. To comply with federal law, surveys must be completed within 3 hours after receiving the item (if received during duty hours), or within 3 hours of the next duty day if received during non-duty hours.

6.2.1.2. Measurements are not required for shipments containing less than the quantities given in 10 CFR 30.71.

6.2.1.3. BE will monitor contamination removable if the quantity exceeds the Type-A limits given in 10 CFR 71. If the maximum radiation intensities exceed the permissible limits set in 10 CFR 71.87, Table V, isolate the container and immediately notify the supervisor responsible for the receiving area and the base RSO.

6.2.2. Visually inspect the container and label it with AFTO Form 9B. Forward properly packaged and labeled radioactive material to the using organization or storage area.

6.3. Shipping. Call the base RSO before packaging any radioactive materials. The base RSO ensures the materials are contained and labeled as required by 10 CFR Part 71, and 49 CFR Part 172.

6.3.1. Unless covered by exception, package and label radioactive material according to 49 CFR 173 and 49 CFR 172, Subpart E.

6.3.2. Several classes of materials are exempted from packaging and labeling requirements as found in 49 CFR 173.421, 422, 424, 425, and 427. However, certain radiation measurements are required before they can be shipped. Consult the applicable section in 49 CFR 173 for specific requirements.

6.3.3. Always verify the recipient's authority to receive radioactive material by obtaining a copy of the RAMP or manufacturer's license.

7. Radiation Safety Training:

7.1. Supervisors of workplaces that use radioactive materials or radiation producing devices (including ionizing, Radio Frequency and laser) producing devices must keep a copy of the applicable Alaska Occupational Safety and Health Administration physical agent data sheet(s) (PADs) in their workplace Hazard Communication training program.

7.2. Unit RSO's of workplaces that use radioactive materials, x-ray or Radio Frequency Radiation producing devices develop a workplace-specific lesson plan using a template provided by Bioenvironmental Engineering.

7.2.1. The following workplaces require initial and annual ALARA training:

7.2.1.1. 18 AMU Specialists

7.2.1.2. 168 CES Readiness and Disaster Preparedness Support Team (DPST)

7.2.1.3. 168 MXS Non Destructive Inspection

7.2.1.4. 354 CES Readiness Flight and DPST

7.2.1.5. 354 CES Environmental Flight Lead Inspectors/Assessors

7.2.1.6. 354 CES Explosive Ordinance Disposal

7.2.1.7. 354 MXS Non Destructive Inspection

7.2.1.8. 354 MXS Avionics

7.2.1.9. 354 MDOS Dental Clinic

7.2.1.10. 354 MDOS Bioenvironmental Engineering

7.2.1.11. 354 MDSS Radiology

7.2.1.12. 354 MDSS Biomedical Equipment Repair

7.2.1.13. 354 LRS/LGRTC (Cargo Movement)

7.2.1.14. 354 LRS/LGRMF/LGRMR/LGRMS

7.2.1.15. 354 CATO (PAX Terminal)

7.2.1.16. 354 CS BITC (Base Information and Transfer Center)

7.2.1.17. Detachment 460

7.2.2. The following workplaces require initial and annual Radio Frequency Radiation safety awareness training in accordance with AFOSH Standard 48-9.

7.2.2.1. 3 ASOS Weather

7.2.2.2. 354 AMXS Sortie Generation Flights

7.2.2.3. 168 MSG Communications Flight

7.2.2.4. 168 MXS Avionics

7.2.2.5. 354 MXS Avionics Flight (ECM and Sensors)

7.2.2.6. 354 MXS Munitions (Missile Maintenance)

7.2.2.7. Detachment 460

7.3. The unit RSO's of the following units will ensure that the users are knowledgeable of the potential laser and ancillary hazards, and required control measures for the equipment that they may have occasion to use or work near, as required by AFOSH Standard 48-139. Conduct training upon assignment to laser duties, and annual refresher training.

7.3.1. 3 ASOS (Commander Pointer, MILES gear)

7.3.2. 354 AMXS Specialists

7.3.3. 354 MXS Avionics

7.3.4. 354 SFS (MILES gear)

7.3.5. 354 MXS NDI

7.3.6. 354 AMXS Support Section

7.3.7. 354 CES Blair Lakes Range Maintenance

7.4. Annotate training on an AF Form 2767 and each worker's AF Form 55. Provide a copy of the AF Form 2767 to Bioenvironmental Engineering.

8. Exposure Control and Monitoring of Nonionizing Radiation.

8.1. Radio Frequency Radiation (RFR):

8.1.1. Exposure Limits. No personnel exposures may exceed the permissible exposure limits specified in AFOSH Standard 48-9.

8.1.2. Monitoring RFR. BE performs RFR hazard surveys.

8.1.3. Safety and Health Protection Guidelines. Routine pre- and post-employment physical examinations are not normally required for personnel occupationally exposed to RFR. Suspected or confirmed overexposures are investigated according to AFOSH Standard 48-9.

8.1.4. Documentation. BE keeps all surveys on Radio Frequency emitters in the organization's industrial hygiene case file.

8.2. Laser Radiation:

8.2.1. Exposure Limits. No personnel exposures may exceed the maximum permissible exposure limits specified in AFOSH Standard 48-139.

8.2.2. Monitoring Laser Radiation:

8.2.2.1. BE performs surveys at all facilities and ranges where Class IIIA, IIIB and IV lasers are operated. Base RSO approves construction plans for new laser facilities or modifications to existing facilities. The facilities or ranges must be surveyed and approved before laser operations begin. The relocation of a laser within an approved facility or range must be coordinated through the base RSO, who determines if a resurvey is required.

8.2.2.2. All lasers procured on EAFB are coordinated through base RSO. Intended users provide the base RSO with operational characteristics on an AF Form 2760, Laser Hazard Evaluation.

8.2.3. Safety and Health Guidelines:

8.2.3.1. Each hazardous laser operation has a formalized OI posted in a conspicuous place for setting up and operating the laser. The unit RSO ensures the OI is reviewed by the base RSO.

8.2.3.2. The base RSO determines the minimum required optical density eye protection. All protective eyewear has the stated optical density and applicable wavelength printed on them.

8.2.3.3. Unit RSOs ensure lasers are posted with the appropriate laser warning placard label according to AFOSH Standard 48-139.

8.2.3.4. Personnel working with Class IIIA, IIIB, and IV lasers may require eye examinations. These examinations are scheduled through 354 MDOS/SGOA as needed.

8.2.4. Documentation. BE keeps surveys on lasers in the organization's industrial hygiene case file.

9. Notification and Investigation of Incidents and Accidents involving Radioactive Materials and Radiation Devices:

9.1. Notification procedures are detailed in AFI 40-201 for incidents involving radioactive materials. In addition:

9.1.1. All supervisors, workers, or contractors immediately notify the permit RSO, base RSO, and the contracting officer if any of the following incidents occur:

9.1.1.1. Damage to or malfunction of any device, which may have resulted in a radiation leak or exposure.

9.1.1.2. Damage to or loss of a TLD, or possible non-occupational exposure of the TLD.

- 9.1.1.3. Loss, theft, spill, vandalism, or release of radioactive materials or any missing radiation devices.
- 9.1.1.4. Any emergency situation in an area where radioactive material is stored or used.
- 9.1.1.5. Excessive readings on radiation detection equipment for any area, source, or package.
- 9.1.1.6. Alleged or suspected overexposures to any person.
- 9.1.1.7. Any known or suspected failure to comply with a CONRAS permit, USAF RAMP, technical order, or other regulation concerning radiation.
- 9.1.1.8. Discovery of radioactive materials or sources not positively identified at time of discovery.
- 9.1.1.9. Any unexpected or unusual occurrence involving radiation in any form.
- 9.1.2. 354 CES/CEV reports spills of radionuclides in accordance with the Oil and Hazardous Substance Discharge Prevention and Contingency Plan.
- 9.1.3. USAF RIC is notified as specified in AFI 40-201. Wing Safety Office may be required to make additional notifications under AFI 91-204.
- 9.1.4. Notifying Local and State Agencies:
 - 9.1.4.1. Radiological incidents which threaten, or perceive to threaten, the public with exposure to radiation must be reported to local government and law enforcement officials and the Alaska Department of Health and Social Services. Such incidents include:
 - 9.1.4.1.1. Emergency response by non-Eielson agencies or response off AF property to track radiation levels.
 - 9.1.4.1.2. Loss of accountability of radioactive materials under circumstances that can be expected to have materials leaving AF property.
 - 9.1.4.1.3. Theft of radioactive materials.
 - 9.1.4.1.4. Any natural or man-made disaster which releases or can be reasonably assumed to release radioactive materials.
 - 9.1.4.2. All notices to local or state media will be made through 354 FW/PA. The base RSO, wing safety office, and CES Environmental Flight provide factual information to Public Affairs consistent with any security classification or privileged information. Notices to local and state officials are made through the Public Affairs office (354 FW/PA). In case of emergency the following should be contacted:
 - Department of Health and Social Services
 - Division of Public Health
 - Chief, Radiological Health Program
 - 4500 Boniface Parkway
 - Anchorage, AK 99507-2107
 - (907) 334-2107

9.2. Investigating Accidents and Incidents:

9.2.1. The base RSO investigates any suspected or actual accident, incident, or unusual occurrence concerning radiation in any form. Wing Safety, Security Forces, and Civil Engineering Environmental Flight may be requested to assist the base RSO in the investigation and provide written input for a formal report.

9.2.2. Investigations attempt to limit the impact on normal work activities, but some duties may be curtailed. Equipment or conditions directly relating to the investigation must not be disturbed or altered in any manner without specific approval of the base RSO or other investigation authority.

9.2.3. The base RSO prepares a detailed written report and coordinates it through the affected base offices. The report is sent as specified in AFI 40-201.

10. Use of Radiation Sources by Non-Air Force Organizations: All non-Air Force organizations and personnel bringing or using radioactive materials, radiography equipment, portable x-ray units, lasers, or radio frequency-emitting devices on EAFB require written authorization in the form of a CONRAS permit. This includes DOE or DOE contractors who are normally exempt from NRC license controls.

10.1. Radioactive Materials. AFI 40-201 specifies the minimum information requirements to obtain approval to bring radioactive materials onto an Air Force installation. For work at EAFB, the following additional requirements apply:

10.1.1. The base RSO is the 354 FW/CC's designee to approve CONRAS permits. The RSO approves permits only for a specific period of time and for the activities, materials, and equipment specified in the permit. The RSO will return disapproved permit applications to the requester with required actions. The RSO will forward unresolved issues concerning licensed radioactive materials to the USAF RIC who is final approval authority.

10.1.2. Submit a copy of the organization's radiation safety program with the CONRAS application, including the procedures established to ensure the safety and health of AF personnel and the public while operating on AF property.

10.1.3. Copies of training documents or other proof showing personnel are adequately trained to perform their functions.

10.1.4. Owner/user ensures security arrangements while the material or device is left on base during lunch times, non-working hours, weekends, and holidays.

10.1.5. A copy of the latest leak tests. If the radioactive source has not been leak-tested within 180-days before the anticipated commencement of activities, the contractor must have this test performed. Provide the results at least 5 working days before bringing the materials on AF property.

10.2. X-ray Units. The non-Air Force organizations desiring to bring x-ray equipment onto EAFB should provide the base RSO the following information at least 30 days prior to anticipated use date.

10.2.1. A brief description of the proposed activities.

10.2.2. The name, local address, and telephone number for the responsible local representative and the name, address and telephone number of the company RSO.

10.2.3. A copy of that part of the Air Force contract describing work to be done at EAFB, and the inclusive dates of the work.

10.2.4. An acknowledgement that the base RSO can make periodic checks to ensure that the non-Air Force organization's workers follow radiation safety practices to prevent exposures to Air Force personnel, and that the base RSO has the authority to suspend contractor operations believed to be unsafe.

10.2.5. The make, model, maximum power settings and normal use settings, and brief description of use, and any shielding requirements.

10.2.6. A copy of the last beam collimation test, calibration data, scatter survey, or equivalent.

10.3. Radio Frequency Emitters. Hand-held and mobile radios with five or less watts of power are exempt from CONRAS requirements. To obtain a CONRAS permit for other emitters, provide the following information:

10.3.1. A brief description of the proposed activities.

10.3.2. The name, local address, and telephone number for the responsible local representative and the name, address and telephone number of the company RSO.

10.3.3. A copy of that part of the Air Force contract describing work to be done at EAFB, and the inclusive dates of the work.

10.3.4. An acknowledgement that the base RSO can make periodic checks to ensure that the non-Air Force organization's workers follow radiation safety practices to prevent exposures to Air Force personnel, and that the base RSO has the authority to suspend contractor operations believed to be unsafe.

10.3.5. Make and model or nomenclature, and number of units.

10.3.6. Wavelength, peak power and normal operating power, duty factor and antenna gain.

10.4. Lasers. Class I and Class II lasers are exempt from CONRAS requirements. To obtain a CONRAS permit for other lasers, submit the following:

10.4.1. A brief description of the proposed activities.

10.4.2. The name, local address, and telephone number for the responsible local representative and the name, address and telephone number of the company RSO.

10.4.3. A copy of that part of the Air Force contract describing work to be done at EAFB, and the inclusive dates of the work.

10.4.4. An acknowledgement that the base RSO can make periodic checks to ensure that the non-Air Force organization's workers follow radiation safety practices to prevent exposures to Air Force personnel, and that the base RSO has the authority to suspend contractor operations believed to be unsafe.

10.4.5. Make and model or nomenclature and number of units.

10.4.6. ANSI Hazard Class, wavelength and operating power.

10.5. If work activities extend past the originally specified dates in the permit, the contractor requests an extension from the base RSO. Submit the request at least 5 working days prior to the permit's expiration date. The CONRAS permittee provides the new dates and certifies that all conditions of the original permit are unchanged. Changes in radiological materials, source strengths, or devices require a permit modification which must be approved by the base RSO.

10.6. Monthly Report. All CONRAS permit holders must submit an activity summary to the base RSO. Non-Air Force organizations holding a CONRAS permit and operation for more than 30 days on base send a brief monthly report to the base RSO listing the locations, dates and approximate times of day the radiological operations were performed. This report is due no later than 5 working days after the last day of the month. For work operations 30 days or less, the organizational representative submits the report not later than 5 working days after operations are completed.

10.7. Transporting Radioactive Materials. Comply with all transportation requirements given in 49 CFRs 172.500 through 172.519 and 172.556, as applicable. Vehicles must be placarded before entering AF property.

10.8. Investigations of Incidents and Accidents:

10.8.1. Immediately report any suspected or alleged exposures to any person, or the general reportable incidents described in paragraph 10, to the contracting officer and base RSO. Also report loss, theft, or vandalism to Security Police.

10.8.2. Additional reporting to the Alaska Department of Health and Social Services, Environmental Protection Agency (EPA), or the Federal Occupational Safety and Health Administration may be required and are the sole responsibility of the non Air Force organization.

10.8.3. Wing safety office and base RSO conduct investigations and make reports as directed by AFIs 91-204 and 40-201, 10 CFRs 20 and 21, as applicable, and paragraph 10.

10.8.4. The organization's representative immediately suspends all radiological operations and does not move equipment or change settings, if possible, to aid in investigating and re-creating events. Operations do not resume until authorized in writing by the base RSO or USAF RIC through the contracting officer. The USAF RIC is final authority to close official investigations involving radioactive materials.

10.9. Termination of CONRAS Permits. Permits are valid for the times specified in the permit and normally expire on that date. However, the base RSO may terminate the CONRAS permit for any radiation operation deemed immediately dangerous to AF personnel, the public at large, or the environment. The permit may also be terminated for violating Agreement State or NRC licenses, possessing unauthorized materials or devices on AF property, or violating AF or Federal rules and regulations. Terminating a CONRAS permit for any reason requires immediate cessation of activities and removal of radiation sources from AF property.

JAMES N. POST III
Brigadier General, USAF
Commander

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

- AFI 90-801, *Environmental Safety and Occupational Health Councils*, 25 March 2005.
- AFI 40-201, *Managing Radioactive Materials in the USAF*, 16 March 2011.
- AFI 44-102, *Community Health Management*, 20 January 2012.
- AFI 48-101, *Aerospace Medical Operations*, 19 October 2011.
- AFMAN 48-125, *The USAF Personnel Dosimetry Program*, 4 October 2011.
- AFI 48-148, *Ionizing Radiation Protection*, 21 September 2011.
- AFI 90-201, *Inspector General Activities*, 17 June 2009.
- AFI 91-204, *Safety Investigations and Reports*, 24 September 2008.
- AFMAN 23-110, *USAF Supply Manual*, 1 April 2009.
- AFOOSH Standard 48-9, *Radio Frequency Radiation*, 14 December 2011.
- AFOOSH Standard 48-139, *Laser Radiation*, 10 December 1999.
- AFI 84-103 *Air Force Heritage Program, Radiation Safety*, 27 October 2004.
- AFTO 33B-1-1, *Nondestructive Inspection*, 15 September 2010.
- Code of Federal Regulations (CFR), Title 10, Energy, 1 January 2011.
- Code of Federal Regulations (CFR), Title 49, Transportation, 1 October 2011.
- USAF Radioactive Material Permit #FL-00409-02/00AFP (Det 460), 2 January 2010.
- USAF Radioactive Material Permit #AK-30518-04/01AFP (354 CES Readiness Flight), 11 May 2009.