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**Medical Command**

**IONIZING RADIATION PROTECTION  
PROGRAM (IRPP)**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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OPR: 51 AMDS/SGPB  
(TSgt Gerald A. Mineghino, III)  
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This instruction establishes requirements for conducting the Osan AB IRPP and implementing the as low as reasonably achievable (ALARA) concept. It outlines the quality assurance requirements to ensure radiation exposures are kept ALARA. It implements AFD 40-1, *Health Promotion*, and applies to all assigned, attached and associate organizations at Osan AB and all collocated operating bases and/or geographically separated units under 51 FW and/or 607 ASG jurisdictions.

**SUMMARY OF REVISIONS**

**This document is substantially revised and must be completely reviewed.**

Obsolete references have been removed and 51 FW Form 31 has been rescinded. Reporting requirements for inventory and leak-testing of sources has been incorporated. Nuclear Regulatory Commission (NRC) General License material requirements and temporary transfer requirements for exercises and contingencies have been added. Radiation Safety Program requirements for users of Chemical Agent Monitor (CAM), Improved Chemical Agent Monitor (ICAM), Automatic Chemical Agent Detection Alarm (ACADA) and Chemical Agent Alarm (CAA) are established. A “[” indicates revised material since the last edition.

**1. Air Force Policy:** Air Force policy mandates that all exposures to ionizing radiation will be ALARA. There should be no exposure to ionizing radiation without an expected benefit and the dose received should be the lowest possible, consistent with the state of technology, costs, and operational requirements.

**2. Responsibilities at Wing Level:**

2.1. 51 AMDS/SGPB will:

- 2.1.1. Ensure a qualified 43E3A Bioenvironmental Engineer or 4B07/91 Bioenvironmental Engineering Technician is appointed as Installation RSO.
- 2.1.2. Develop a formal IRPP to ensure all radiation exposures comply with ALARA requirements. Coordinate with each Unit RSO to ensure that a comprehensive base-wide IRPP exists. Provide consultation to Unit RSOs in the development of local guidance and publications consistent with the ALARA concept.
- 2.1.3. Perform surveillance of areas where radiation sources are used or stored.
- 2.1.4. Review all plans for modification, design or deployment of radiation producing equipment or material and/or storage/use locations under the control of 51 FW.
- 2.1.5. Manage the USAF Personnel Dosimetry Program: The investigation action level for Osan AB is established at 50 millirems (mrem) per month or 75 mrem per quarter. These levels are investigated and their results reported to the Aerospace Medicine Council.
- 2.1.6. Accomplish and document IRPP reviews and present results to organization commanders and to the Wing Integrated Safety Council.
- 2.1.7. Conduct and document ALARA training classes at least monthly for supervisors and workers.
  - 2.1.7.1. Tailor the level of training to the specific category of personnel and hazard potential. Include information regarding risk from radiation exposure; health risks to children of women occupationally exposed to radiation during pregnancy; maximum permissible dose limits; protective measures required (tailored for specific radiation work); and ALARA philosophy and practice.
  - 2.1.7.2. Provide training for all newly assigned personnel using or working on radioactive materials or ionizing radiation producing equipment and supervisors of such personnel.
- 2.1.8. Perform package swipes on shipments containing radioactive materials and ensure shipping requirements are met in accordance with CFR, TO, and AFI.
- 2.1.9. Survey broken or damaged containers to determine the extent of radiological hazards and direct recovery actions as necessary.
- 2.1.10. Investigate incidents of alleged or actual radiation exposures in accordance with AFI 40-201 and AFI 91-204.
- 2.1.11. Establish procedures in conjunction with 51 CES/CEC to review and approve/disapprove contractor requests to bring radioactive materials or radiation producing equipment on base or to conduct work involving such materials or equipment on base or to conduct work involving such materials or equipment throughout the Wing.

### **3. Responsibilities at Unit Level:**

- 3.1. Commanders (of units that own or use radioactive materials or ionizing radiation producing equipment) will:
  - 3.1.1. Appoint a primary and alternate unit RSO in writing (to include Name, Rank, Office Symbol, Duty Phone, and DEROS) and provide a copy of the appointment letter to the Installation RSO, including any subsequent changes.

- 3.1.2. Ensure an inventory identifying the locations of all required radioactive materials or ionizing radiation producing equipment is compiled in June and December of each year with a copy provided to the Installation RSO.
  - 3.1.3. Inform the Installation RSO of any changes that could alter existing ionizing radiation equipment.
  - 3.1.4. Establish control procedures to ensure only authorized personnel have access to radioactive materials or ionizing radiation producing equipment.
  - 3.1.5. Ensure a Radioactive Material Management and Safety Program is established for all radioactive material permits.
  - 3.1.6. Ensure personnel receive initial and annual training on ALARA concepts, unit radiation sources, and safety procedures by the unit radiation safety officer.
  - 3.1.7. Obtain and manage USAF RAM Permits per AFI 40-201.
  - 3.1.8. Units which distribute permitted RAM (e.g., CAM, ACADA, etc.) during exercises and contingencies and will ensure that personnel are:
    - 3.1.8.1. Trained to use the item which they receive
    - 3.1.8.2. Have received ALARA training prior to receipt of the item.
    - 3.1.8.3. Ensure all items are accounted for and report this to the Installation RSO.
  - 3.1.9. Ensure that items containing RAM under a NRC General License are identified to the Installation RSO for registration with the USAF Radioisotope Committee.
  - 3.1.10. Ensure that if CAM, M43A1, M8A1, ICAM or ACADA are used, the requirements of the USAF Guide on Radiation Protection Program for the M43/M8A1 Chemical Agent Alarm (CAA), Chemical Agent Monitor (CAM) and GID-3 Automatic Chemical Agent Detector/Alarm (ACADA), March 2001 (Revision 1) are followed. This guide is available from the Installation RSO and at [https://www.afms.mil/rad\\_prot/refs.cfm](https://www.afms.mil/rad_prot/refs.cfm)
- 3.2. Unit RSOs will:
- 3.2.1. Act as a point of contact on ionizing radiation safety matters for the unit and maintain active liaison with the Installation RSO.
  - 3.2.2. Establish a Radiation Safety Protection Program. Ensure personnel receive initial and annual ALARA training.
  - 3.2.3. Prepare Unit Radiation Safety Operating Instructions and coordinate all operating instructions through Bioenvironmental Engineering for review and final approval.
  - 3.2.4. Ensure all transfers of RAM are coordinated with the Installation RSO in advance.
  - 3.2.5. Ensure the receipt, possession, distribution, use, transfer, and disposal of radioactive materials is accomplished according to the specific conditions of the applicable USAF RAM Permit.
  - 3.2.6. Immediately report any accident, fire, theft, or loss involving radioactive materials to the Installation RSO, and also any suspected overexposures to ionizing radiation.
  - 3.2.7. Maintain copies of all Bioenvironmental Engineering (BEE) survey documentation and documentation of all radiation safety training.

- 3.2.8. Track all unit actions needed to eliminate ionizing radiation hazards to personnel. Ensure all corrections are made in a timely manner. Ensure required warning signs are properly posted.
- 3.2.9. Coordinate BEE surveys with unit commander and supervisors, and ensures that personnel are informed of the status of such activities.
- 3.2.10. Review NRC General License registrations in June and December of each year and ensure information on the form is correct. Updates will be submitted to the Installation RSO for transmittal to the USAF Radioisotope Committee.
- 3.3. Supervisors (of personnel using or working on radioactive materials or radiation producing equipment) will:
- 3.3.1. Obtain ALARA training from BEE upon assignment as supervisor; unless previously trained as a supervisor and documentation is on individual's AF Form 55, **Employee Safety and Health Record**.
  - 3.3.2. Ensure all personnel using or working on radioactive materials or ionizing radiation producing equipment receive ALARA training from BEE upon assignment and annually thereafter.
  - 3.3.3. Review and implement measures to comply with requirements published in USAF RAM Permits, DoDI, AFI, T.O., and this instruction.
  - 3.3.4. Maintain TLDs to ensure proper control of badges and train personnel on the local procedures established to prevent unintended radiation exposure to badges. Send newly assigned workers to BEE to receive TLDs and obtain fundamental training on ALARA and TLD wearing, storage and handling.
  - 3.3.5. Ensure workers handling radioactive material report to the hospital if they receive cuts or abrasions while in the work area.
  - 3.3.6. Immediately report any accident, fire, theft, or loss involving radioactive materials to the Unit RSO and Installation RSO, and also any suspected overexposures to ionizing radiation.
  - 3.3.7. Brief workers on the results of all BEE surveys of their work areas.
- 3.4. Workers (individuals using or working on radioactive materials or ionizing radiation producing equipment) will:
- 3.4.1. Wear their assigned TLD badges, if required, whenever working with radioactive materials or ionizing radiation producing equipment.
  - 3.4.2. Review and comply with requirements published in USAF RAM Permits, DoDI, AFI, T.O., and this instruction.
  - 3.4.3. Promptly inform their supervisors of any suspected accidental exposure, cut, or skin abrasion while handling radioactive materials.
  - 3.4.4. Comply with the provisions of all USAF RAM Permits under which they operate.
- 3.5. 51 CES/CEC will: Ensure all plans for modification or design of facilities involving the use of radioactive material or radiation producing equipment are reviewed by the Installation RSO.
- 3.6. 51 LRS/LGS will: Maintain a proper storage area for radioactive materials.
- 3.7. 51 LRS/LGTT will:

- 3.7.1. Pack, mark and label radioactive waste in accordance with CFRs, AFIs, and when applicable, follow instructions provided for transportation by the generator.
  - 3.7.2. Ensure personnel trained in the movement and packaging of RAM are available at all times.
  - 3.7.3. Maintain a proper holding area to temporarily store items that contain radioactive materials.
  - 3.7.4. Request the Installation RSO survey any radioactive item terminating shipment at Osan AB; any radioactive item leaving Osan AB; and/or any radioactive waste containers prior to shipment.
- 3.8. 607 ASG will: Maintain proper storage areas at the collocated operating bases for radioactive materials.

#### **4. Reporting Radiological Incidents:**

- 4.1. Any accident, fire, theft, loss or suspected overexposures involving radioactive materials must be immediately reported to the Unit RSO and Installation RSO.
  - 4.1.1. Radiological incident reporting instructions, including the 24-hour contact phone numbers of the primary and alternate Unit RSO and the Installation RSO, must be posted outside the entrance to any storage room containing radioactive materials.
  - 4.1.2. Radiological incident reporting instructions must be included in the unit's health and safety briefing for newcomers to ensure all personnel are aware of reporting requirements.
  - 4.1.3. The Installation RSO may be contacted at the 51 AMDS Bioenvironmental Engineering flight during normal duty hours (784-2623). After hours he/she may be paged through the 51 MDG Emergency Room (784-2500).

WILLIAM L. HOLLAND, Brigadier General, USAF  
Commander

## Attachment 1

### GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

#### References

AFI 40-201, *Managing Radioactive Materials in the USAF*

AFI 48-125, *The USAF Personnel Dosimetry Program*

AFI 91-204, *Safety Investigations and Reports*

DoDI 6055.8, *Occupational Radiation Protection Program*

Title 10, *Code of Federal Regulations, Energy*

Title 49, *Code of Federal Regulations, Parts 170 through 189, Transportation.*

#### Terms

**ALARA (As Low As Reasonably Achievable)**—A set of management and administrative actions taken to reduce personnel radiation dosage to as low a level as possible consistent with operational requirements. The ALARA concept was developed in response to scientific evidence that suggests no level of radiation exposure is totally risk free. While the established maximum permissible doses are conservative and offer a low risk of adverse health effects compared to other hazards, every effort should be made to reduce exposures to the lowest possible.

**Individual User**—Any individual who uses or supervises the use of radioactive material or an item containing radioactive materials.

**Radiation Producing Equipment**—Equipment capable of generating ionizing radiation such as an x-ray machine.

**Radiation Safety Officer (RSO)**—An individual who provides consultation and advice on the hazards associated with radiation and the effectiveness of measures to control these hazards. There are three categories of RSOs:

**Installation RSO**—An individual designated by the 51 FW/CC to manage the base IRPP.

**Permit RSO**—An individual approved by the USAF Radioisotope Committee to manage the radiation protection aspects associated with the use of radioactive materials for which a specific USAF RAM Permit has been issued.

**Unit RSO**—An individual designated by the unit commander to act as a focal point for the unit on radiation protection matters. Each unit that operates radiation-producing equipment or uses radioactive materials appoints a unit RSO.

**Radioactive Materials (RAM)**—Materials that contain radioactive isotopes or generate ionizing radiation.

**Thermo luminescent Dosimeters (TLD)**—A passive radiation monitoring device consisting of a TLD card and holder. The whole body TLD monitors for beta, gamma and x-ray exposures.

**USAF Radioactive Material Permit (RAM Permit)**—A written authorization from the USAF Radioisotope Committee for USAF organizations to receive, possess, distribute, use, transfer, or dispose

of radioactive materials.

**USAF Radioisotope Committee**—A committee established to provide USAF administrative surveillance over all radioactive materials.

- | **Generator (waste)**—For items controlled under a USAF RAM Permit issued to a specific organization, the using activity of the permitted organization will be considered the generator. For commodity type items not covered under a specific USAF RAM Permit, the generator will be the person or activity with property accountability for the item when it is designated as waste.