

Environmental Standard Operating Procedure			
Originating Office: <b>MCAS Miramar Environmental Management Department</b>	Revision:  Original	Prepared By:  Waste Management Division	Approved By:  William Moog
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## Title: Radioactive Material Storage

### 1.0 PURPOSE

The purpose of this Environmental Standard Operating Procedure (ESOP) is to provide environmental guidelines for managing radioactive materials in storage, as well as in detection and testing equipment onboard Marine Corps Air Station (MCAS) Miramar.

### 2.0 APPLICATION

This guidance applies to those individuals who work with and/or manage radioactive materials in storage or in detection/ testing equipment.

### 3.0 REFERENCES

- 10 CFR (Code of Federal Regulations)
- 49 CFR
- NRC (Nuclear Regulatory Commission)
- AAC 12 (Arizona Administrative Code)
- MCO P5090.2A (Marine Corps Order)
- MCO 5104.3A
- Station Order 6280.7
- Radiation Affairs Management Program
- NATOPES (Naval Aviation Tactical Operations)
- NAVMED P5055 (Radiation Health Protection Manual)
- NAVSEA-COM-RASO
- NAVSEA-50420-AA-RAD-010
- Navy Radioactive Materials Permit 10-67004
- BUMEDINST (Bureau of Medicine Instruction)

### 4.0 PROCEDURES

#### 4.1 Discussion:

In the process of logistical and mission support operations, radioactive materials are incorporated and maintained in

various types of detection and testing equipment, (e.g. photo ionization detectors and X-ray machines) as well as certain aircraft components such as flare lenses. These materials must be properly managed in order to avoid environmental exposures and releases which could impact personnel and/or the surrounding community. For example, during hard landings, Forward Looking Infrared (FLIR) lenses may become cracked and must be recovered and handled properly.

#### **4.2 Operational Controls:**

The following procedures apply:

1. Ensure that approved time, distance and shielding protection measures are in place and properly used around all equipment containing ionizing radiation sources.
2. Ensure that all personal hygiene and eating restrictions are followed in the vicinity of radiation sources (i.e. no eating, drinking, and smoking, applying makeup or chewing gum in these areas).
3. Use proper Personal Protective Equipment (PPE) such as: thermo luminescent detector (TLD) badges, gloves, tyvek suits, (for incident response, PPE will vary from nitrile gloves only, to level C or B depending on the source and situation).
4. Use Cs<sup>137</sup> source gamma emitter to check for source exposures.
5. Ensure that signs reading "Caution Radiation" including who to contact in case of an emergency are posted in areas where radiation sources are present.
6. Follow approved decontamination procedures following a response incident or other potential exposure, including: three stage decontamination procedures, showering, changing clothing (do not bring clothes home) and surveying body and clothes for radiation.
7. Ensure that training records for all personnel are current and available for inspection.
8. If there are any specific situations or other concerns not addressed by this procedure, contact the Environmental Management Department (S7).

#### **4.3 Documentation and Record Keeping:**

The following records must be maintained:

1. Inspection and training records.
2. Radiation source inventory record.
3. Shipping logs.
4. NRC license.

5. Navy radiation permit.

#### **4.4 Training:**

All affected personnel must be trained in this Standard Operating Procedure and the following:

1. Hazard Communication training.
2. HAZWOPER training (initial and annual refresher training).
3. NATOPES (Naval Aviation Tactical Operations).
4. NAVAIR 4790 training.
5. RSO (Radiation Safety Officer) training.
6. MCO P5090.2A (Marine Corps Order).
7. MCO 5104.3A.
8. IBIS CH53 School.
9. On the job (OJT) training.

#### **4.5 Emergency Preparedness and Response Procedures:**

Implement the emergency response plan identified in the unit's Business Plan and notify the MCAS Miramar Duty Officer at (858) 577-1141. Refer to Station Order 5104.1 – Radiation Safety Program Standard Operating Procedures – for additional guidance.

#### **4.6 Inspection and Corrective Action:**

Storage of radioactive materials with other hazardous materials, food, or other incompatible materials will be cited in violation of NAVSEA S 0420-AA-RAD-010, 7.5.2.3. Immediate notification shall be made to the Command Radiation Safety Officer or Installation Radiation Safety Officer.

The Environmental Compliance Coordinator (ECC) shall designate personnel to perform inspections. The ECC shall ensure deficiencies noted during the inspections are corrected immediately. Actions taken to correct each deficiency shall be recorded on the inspection sheet.

Radioactive Material Storage – Inspection Checklist
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Date:	Time:
Installation:	Work Center:
Inspector's Name:	Signature:

Inspection Items	Yes	No	Comments
1. Are MSDSs (Material Safety Data Sheets) for radioactive materials (Alpha, Beta, Gamma radiation Sources) available and current? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
2. Are approved time, distance and shielding protection measures in place and properly used around all equipment containing radiation sources? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
3. Are all personal hygiene and eating restrictions followed in the vicinity of radiation sources (i.e. no eating, drinking, and smoking, applying makeup or chewing gum in these areas)? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
4. Is proper Personal Protective Equipment (PPE) used such as: thermo luminescent detector badges, gloves, tyvek suits, head and foot gear (for incident response; level A, B or C PPE appropriate to the situation)? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
5. Is Cs <sup>137</sup> source gamma emitter used to check for source exposures? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
6. Are signs reading "Caution Radiation" including who to contact in case of an emergency posted in areas where radiation sources are present? <i>(10, 29, 49 CFR, NRC, MCO P5090.2A)</i>			
7. Are approved decontamination procedures followed after a response incident or other potential exposure, including: three stage decontamination procedures, showering, changing clothing (do not bring cloths home) and surveying body and cloths for radiation? <i>(10, 49 CFR, NRC, MCO P5090.2A)</i>			
8. Are training records for all personnel current and available for inspection? <i>(10, 49 CFR, NRC, MCO P5090.2A)</i>			

**ADDITIONAL COMMENTS:**

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**CORRECTIVE ACTION  
TAKEN:**

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**Environmental Compliance Coordinator**

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_