

UNITED STATES MARINE CORPS I MARINE EXPEDITIONARY FORCE U. S. MARINE CORPS FORCES, PACIFIC BOX 555300 CAMP PENDLETON, CA 92055-5300

> I MEFO 5104.3A SAFETY MAR 2 3 2020

I MARINE EXPEDITIONARY FORCE ORDER 5104.3A

From: Commanding General, I Marine Expeditionary Force To: Distribution List

Subj: I MARINE EXPEDITIONARY FORCE RADIATION SAFETY PROGRAM

Ref: (a) MCO 5100.29B (b) MCO 5104.3C (c) OPNAVINST 6470.2D (d) MARCORLOGCOMO 5104.1 (e) NAVSEA S0420-AA-RAD-010 Rev 2 (f) NAVMED P-5055 (g) BUMEDINST 6470.10B (h) 10 CFR Part 71 (i) 49 CFR Part 173 (j) NRMP 10-67004-TINP (k) NRMP 10-67004-T2NP (l) NRMP 10-67004-T3NP

Encl: (1) I MEF Radiation Safety Program

1. Situation. The Marine Corps has recently been issued two new Naval Radioactive Materials Permits by the Naval Radiation Safety Committee (NRSC) to assume oversight responsibility for management and accountability of tritium and depleted uranium devices. As such, the Marine Corps is now held directly responsible by the NRSC for proper management of these and nickel-63 radioactive assets. It is imperative commands fully understand and adhere to safety and inventory accountability regulations. Per the references, this order provides policy, assigns responsibility, establishes instructions, and sets forth requirements for the administration of the I Marine Expeditionary Force (I MEF) Radiation Safety Program (RSP).

2. Cancellation. I MEFO 5104.3

3. <u>Mission</u>. To establish a formal RSP in order to minimize the risk of injury to personnel and the general public, contamination of personnel and facilities, and the loss of control of sources of ionizing radiation.

- 4. Execution
 - a. Commander's Intent and Concept of Operations
 - (1) Commander's Intent

(a) <u>Purpose</u>. Provide guidance and requirements for complying with the references and the proper accountability and handling of radioactive assets used within I MEF.

DISTRIBUTION STATEMENT A: Approve for public release, distribution is unlimited.

(b) <u>Method</u>. Enhance unit and individual readiness through the implementation and sustainment of an effective RSP in compliance with germane regulations, and in coordination with supporting radiological commands and agencies.

(c) <u>Endstate</u>. I MEF commands effectively control sources of ionizing radioactive assets (henceforth utilized, as appropriate, to represent material, devices, and commodities) in order to minimize personnel exposures to a level as low as reasonably achievable, prevent contamination of personnel, equipment, and facilities, and to ensure an accurate serialized inventory of these assets.

(2) <u>Concept of Operations</u>. The provisions set forth in the references and this order identify specific command responsibilities and establish program requirements to ensure compliance with the Marine Corps RSP, the United States Nuclear Regulatory Commission regulations, Naval Sea Systems Command Detachment Radiological Affairs Support Office permit requirements, associated orders to each permit, and state and federal regulations.

b. <u>Subordinate Element Missions</u>. Commands in possession of any radioactive assets shall comply with this order and the references.

5. <u>Administration and Logistics</u>. Submit recommended changes for review, and incorporation in future revisions of this order, to the I MEF Command Radiation Safety Manager (RSM) in the I MEF Department of Safety.

6. Command and Signal

a. <u>Command</u>. This order is applicable to all I MEF commands and personnel procuring, possessing, using, or responsible for training users of radioactive assets. The term "radioactive assets" does not apply to the use of any fixed or portable medical x-ray equipment used by health services personnel in support of Marine Corps operations.

b. <u>Signal</u>. This order is effective the date signed.

GIDEONS

Chief of Staff

Distribution: I/II

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CHAPTER 1

INDIVIDUAL ROLES AND RESPONSIBILITIES

1. Commanding General (CG), I MEF

a. Appoint, in writing, a Command Radiation Safety Manager (CRSM) responsible for coordinating the Radiation Safety Program (RSP) for radioactive assets under the control of I MEF. The CRSM shall be appropriately trained within 90 days of appointment.

b. Ensure that commanders provide RSP support and fulfill the requirements of Naval Radioactive Material Permit (NRMP) and their associated orders.

c. Develop and implement an appropriate level RSP/Standard Operating Procedures (SOP) and ensure adherence to the requirements of this order, references, NRMP requirements, and local installation Radiological Control (RADCON) procedures.

d. Maintain an accurate roster of Major Subordinate Command (MSC) CRSMs, Unit Radiation Safety Manger (URSM), and Radiation Protection Advisors (RPA) to provide annually to the Major Command Radiation Safety Manager (MRSM) by 30 September of each Fiscal Year (FY).

e. Receive, consolidate, and report results of semi-annual inventories of radiological assets from each applicable MSC/Major Subordinate Element (MSE) associated with an NRMP. I MEF G4 shall submit a copy of the inventory to Marine Corps Logistics Command (MARCORLOGCOM) with copies going to the I MEF CRSM and the Marine Corps Forces Pacific MRSM.

2. <u>CGs of 1st Marine Division, 3d Marine Air-Wing, and 1st Marine Logistic</u> Group

a. Appoint, in writing, a CRSM at the MSC level responsible for coordinating the RSP for radioactive assets under the control of the respective MSC. The CRSM shall be appropriately trained within 90 days of appointment.

b. Ensure subordinate commands appoint URSMs and RPA, down to the battalion/squadron level where applicable (Figure 1), and appropriate training is completed within 90 days of appointment. Units that have in their inventory specifically licensed and/or generally licensed radioactive material shall assign an RSM/RPA per the following:

(1) Inflight Blade Inspection System (IBIS) and/or Electro-Optical Targeting System (EOTS): One URSM shall be trained and designated within the Marine Aviation Logistics Squadron (MALS), Marine Heavy Helicopter (HMH), and Marine Fighter Attack (F-35 only) squadrons.

(2) <u>Chemical Agent Detectors - Chemical Agent Monitors</u>, Automatic <u>Chemical Agent Detector Alarm</u>, etc.): The individual responsible for the inventory and/or use shall be trained and designated as a URSM.

(3) <u>Mortar Sighting Devices</u>: One URSM shall be trained and designated within the Armory (RPAs will be trained and assigned to each cage containing the mortar sights).

1-1

(4) <u>Depleted Uranium Armor and Turrets</u>: One URSM shall be trained and designated within the unit responsible for the tank(s).

(5) Any generally licensed device procured by the command will require the individual responsible for the inventory and/or use to be trained and designated as a URSM.

(6) If a wing, armory, or unit does not possess any of these items a URSM is not required. RPAs are required for all exempt quantity items, for instance tritium compasses and Rifle Combat Optics (RCO). RPA online training can be found at the milSuite/Marine Corps RSP website: https://www.milsuite.mil/book/groups/marine-corps-radiation-safety-programmembers-only/

c. Ensure that commanders provide RSP support and fulfill the requirements of NRMPs and their associated orders.

d. Develop and implement an appropriate level RSP/SOP and ensure adherence to the requirements of this order, references, NRMP requirements, and local installation RADCON procedures.

e. Maintain an accurate roster of MSC URSM/RPAs to provide to the I MEF CRSM by 30 September of each FY. This list will be included in the consolidated I MEF CRSM/URSM/RPA roster forwarded to the MRSM.

f. Receive, consolidate, and report results of semi-annual inventories of radiological assets from each applicable subordinate command associated with an NRMP. The respective MSC G4 shall submit a copy of the inventory to I MEF G4 per prescribed timelines.

3. Commanders of Marine Expeditionary Units and I Marine Expeditionary Force Information Group

a. Appoint in writing a URSM and/or an RPA responsible for coordinating the RSP for radioactive assets under the control of the respective command. The URSM/RPA shall be appropriately trained within 90 days of appointment.

b. Ensure RSP and the requirements of NRMPs and their associated orders are met.

c. Develop and implement an appropriate level RSP/SOP and ensure adherence to the requirements of this order, references, NRMP requirements, and local installation RADCON procedures.

d. Maintain an accurate roster of URSM/RPAs to provide to the I MEF CRSM by 30 September of each FY. This list will be included in the consolidated I MEF CRSM/URSM/RPA roster forwarded to the MRSM.

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4. RSMs and RPAs

a. The RSM (generically refers to all RSMs (i.e. MRSM, CRSM, URSM, etc.) is responsible for the coordination and management of the Command Radiation Safety Program (CRSP) which

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4. RSMs and RPAs

a. The RSM (generically refers to all RSMs (i.e. MRSM, CRSM, URSM, etc.) is responsible for the coordination and management of the Command Radiation Safety Program (CRSP) which

includes oversight of specifically licensed and generally licensed radioactive assets in direct support of the NRMP at their command

b. A URSM shall ensure a qualified RPA is assigned responsibility for all exempt quantity assets. When requesting exemption from requiring a URSM within exempt quantity only programs, submit the request, per reference (b), via the chain of command to Commandant of the Marine Corps Safety Division (CMC(SD)).

c. Enclosure (1), Chapter 2, of this Order provides coordinating instructions for RSM/RPAs during the execution of their CRSP.

5. <u>I MEF Personnel</u>. All personnel are active participants towards ensuring the proper employment, maintenance, and precautions are followed with regards to radioactive assets. Adherence to orders, SOPs, tactics, techniques, and procedures are fundamental precepts towards the execution of professional operating practices and processes resulting in an exemplary RSP and a mishap-free work environment.



Figure 1: Hierarchy of Marine Corps Radiation Safety Program

Chapter 2

Coordinating Instructions

1. <u>Radiation Safety Training</u>. Authorized Users (AU) are considered to be any active duty military, reserve military, civilian, or civilian contractor employed by the Marine Corps who will use, maintain, or store permitted devices under the authority of the respective NRMP in the performance of their regularly assigned duties. AUs must have adequate and appropriate training (initial and refresher/annual) to provide reasonable assurance that they will use permitted materials safely and respond appropriately to events or accidents involving permitted materials to prevent the spread of contamination.

a. Initial training outline

(1) Operating and emergency procedures and incident report notification as specified in the respective NRMP (as applicable).

(2) Radiation protection principles.

(3) Characteristics of ionizing radiation.

(4) Units of radiation dose and quantities.

(5) Biological hazards of exposure to radiation (appropriate to the type and forms of permitted materials to be used).

b. The URSM or an individual with comparable knowledge and training shall conduct the training.

c. Authorized users do not require a written test to demonstrate successful training completion.

d. Training may be provided as lectures, demonstrations, video, or computer based and should emphasize the use of command specific radiation sources.

e. Training shall be appropriately documented with rosters identifying the course of instruction, date conducted, and names/signatures of participants. It is recommended to maintain any command letter of instruction identifying the specific training evolution to supplement the training roster.

f. Refresher training shall be performed annually covering the topics of Section 1.a above.

2. <u>APR - Radiation Safety</u>. URSM/RPAs shall conduct an APR, per references (b) and (d), in order to evaluate command compliance with federal regulations, adherence to applicable Navy and Marine Corps directives, NRMP conditions and management oversight of the Radiology Affairs Support Program (RASP). The APR should be completed by 30 September of each FY. Reference (d) Appendix A, RASP Radiation Protection Checklist, can be used as a guide when conducting the review.

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3. <u>Transportation of Radioactive Materials</u>. Per references (b) and (d), regulations governing the transportation of hazardous material are designed to prevent undue exposures and injury to the transporters and public during transport. Packaging, labeling, and other tasks associated with the transportation of Radioactive Material (RAM) are complex and depend on the form, quantity, and radionuclide to be transported. The transportation of RAM shall only be certified by qualified individuals.

a. In coordination with the installation logistics office, URSM/RPAs shall develop and implement standard operating procedures for shipping radioactive assets. These procedures shall establish and maintain an electronic logbook in spreadsheet format. At a minimum, the logbook shall contain the asset name, national stock number, serial number (if applicable), radioactive isotope, original radioactive quantity (original activity in curies and terabecquerels), pre-shipping radiation surveys, date, time, and name of person packaging the items.

b. Shipments of RAM shall be coordinated with the local Defense Logistics Agency office, the Installation Traffic Management Branch, and/or the MALS supply as applicable to ensure adherence to all Department of Transportation regulations pertaining to the shipment of RAM.

c. A RAM movement form shall accompany radioactive asset movements to include on-base permanent transfer from one building to another, transfer from one command to another, and for any RAM being prepared for shipment. Copies of the completed form will be provided to the RSM and maintained for seven years. RAM movement forms are available online at: https://navalforms.documentservices.dla.mil/web/public/forms

d. A RAM movement form is not required for temporary movement of items remaining on the installation.

4. <u>Radiological Commodity Storage</u>. Quantities and storage locations of radioactive assets should be maintained on-hand and a copy provided to the Installation RSM (IRSM). If there is no IRSM assigned within the installation, report locations of radioactive inventories to the local fire department and emergency response personnel.

5. <u>Radiological Postings/Signage</u>. Radioactive commodity storage location shall be appropriately posted per reference (d). Signage examples can be found in Appendix A of this order. Placement guidance as follows:

a. "Caution - Radioactive Materials" sign displayed on the outside door of a radioactive asset/materials storage locker only (i.e. not on the front of the cage at the armory or on the bulkhead).

b. "No eating, drinking, chewing, etc.", any "Notice of Violation", "NRC Form 3", and "Section 206 of Energy Reorganization Act of 1974" signage to be displayed on the inside of the radioactive asset/materials storage locker door. Posting of signs in this fashion reduces clutter and keeps the signs from getting exposed to the elements while meeting the spirit and intent of requirements.

c. The 10 Code of Federal Regulations NRMP Permits, MARCORLOGCOM order 5104.1, and the unit RSM/RPA Points Of Contact (POC) are to be displayed on the armory read board. The "Radiological Program Notice" sign in Appendix A can be modified to support command needs in order to meet this posting requirement.

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d. "Commandant of the Marine Corps Safety Division Guidance For Handling Damaged TRITIUM Devices" form provides direction in case a tritium device breaks and is to be posted on the armory read board. The upper right corner of the form has three blocks/drop down menus to be filled out with respective POC names and phone numbers. Paragraph 3 of this form also contains drop down menus to be filled out appropriately for disposition/inspection instructions.

6. Employee Assistance Program (EAP). Command EAPs shall delineate processes or emergency response procedures for any broken, damaged, or leaking radiological asset items. The initial objective to any response is to gain control of the ensuing event and to prevent further spread of any contamination produced. However, activities to save life, aid the injured, fight fires, or control further spread of damage takes precedence over concerns for radiological contamination.

a. In the event any unit inventory item is broken, damaged, or leaking, the command shall activate the EAP which includes immediately contacting the URSM/RPA.

b. Accidents or incidents involving radiological assets will be reported immediately to the CRSM. The URSM/RPA shall contact the chain of command as well as the MARCORLOGCOM Radiation Safety POC, Mr. Rob Truver, at robert.truver@usmc.mil, or phone (229) 639-7670.

c. If the radiological asset is covered under an NRMP the emergency procedures pertaining to that NRMP take precedence over any other procedures.

d. The URSM/RPA shall contact the RSM, via the chain of command, to receive guidance with respect to response, cleanup, and disposal of the radioactive asset.

e. Procedures for each radiological asset/commodity will be posted in the area where the material is stored or used. If an accident or incident occurs, the senior person present shall take immediate steps to activate the EAP, control the incident, and request assistance from the URSM/CRSM/RSM as applicable.

f. It is recommended one emergency response drill be conducted annually, which involves a radioactive asset scenario, information operations team will review and confirm the steps identified in the command EAP. Participation by fire department and other emergency response personnel is encouraged.

7. External Radiological Sources. URSM/RPAs shall coordinate with the IRSM with respect to any external sources of ionizing radiation being brought onto the installation by outside contractors, Department of Defense services, or federal agencies whether for storage, utilization, or training. A Radiological Contract Oversight Management Authorization is required to be processed via the RSM.

8. URM. URM includes items that contain intact and unbroken radioactive assets for which the possessing command has no further use. These items include, but are not limited to, license-exempt radioactive assets: e.g., advanced combat optical gunsights, RCO, assorted laser systems, and tritium compasses. These items shall not be turned in to the Defense Reutilization Management Office. URSMs will contact the appropriate Item manager for disposition instructions on these items.

9. Marine Corps RSP (Members Only) - milSuite website.

This website contains a plethora of information, references, and training presentations that can be used by URSMs to support and bolster their programs. The online group is dedicated to radiation safety professionals in the United States Marine Corps. Its goal is to communicate and coordinate efforts related to the Marine Corps RSP in order to create a safe work environment that meets all regulatory requirements outlined by federal, state, and local laws. First time users will need to create an account prior to gaining access to the website. The website can be located through the following link:

https://www.milsuite.mil/book/groups/marine-corps-radiation-safety-programmembers-only/

10. Inspector General (IG) Checklist, Marine Corps Safety Program 5100. The IG Checklist, Marine Corps Safety Program 5100, applies to the Marine Corps Total Force and is used as the basis for evaluation during all Commanding General's Inspections (CGI) and Site Assist Visits (SAV). There are a number of questions on the checklist that pertain to RSP. It should be noted these questions represent only a portion of the command's responsibility towards meeting the requirements of implementing a viable RSP. It is recommended as a starting point for incoming URSM/RPAs that they should obtain the most recent IG checklist on the Head Quarters Marine Corps Inspector General of the Marine Corps website, become familiar with these questions in order to adequately prepare for upcoming CGI/SAVs, and RSM/RPAs should review the command's last CGI/SAV results in order to ensure identified deficiencies have been addressed. The website can be located through the following link:

https://www.hqmc.marines.mil/igmc/Units/Inspections-Division/Functional-Area-Checklists-FACs/

11. <u>RSM Designation and Directives</u>. The following guidance clarifies where to designate RSMs and the directives/guidance that shall be adhered to in their RSP in order to comply with Naval Radioactive Material Permit conditions, the associated orders to the NRMP, and federal regulations.

a. Commander, Naval Air Forces is responsible for the Strontium-90 (Sr-90) in the IBIS and Americium-241 contained within the EOTS. A URSM shall be qualified and designated within each MALS, HMH Squadron (CH-53E), and VMFA Squadron (F-35 only) that have an IBIS or Electro Optical Tracker System associated with their aircraft.

- (1) IBIS: NRMP No. 04-57025-T2NP
- (2) IBIS: COMNAVAIRPAC/COMNAVAIRLANT INST 5104.1B
- (3) EOTS: NRMP No. 04-57025-T1NP
- (4) EOTS: COMNAVAIRPAC/COMNAVAIRLANT INST 5104.2A
- (5) POC Info (both permits share RSO and ARSO):
- (a) RSO Phone: (619) 545-1436
- (b) ARSO Phone: (619) 545-4955

b. MARCORLOGCOM is responsible for the Nickel-63 (Ni-63) within the various chemical agent detectors (see the permit listed below for all assets). Units possessing equipment containing Ni-63 shall have a qualified and designated URSM.

- (1) NRMP10-67004-T1NP
- (2) MARCORLOGCOM Order (LCO) 5104.1 & LCO 5104.2
- (3) POC Info:
- (a) RSO Phone: (229) 639-7670
- (b) ARSO Phone: (229) 639-7146

c. MARCORLOGCOM maintains a permit for Tritium (H-3) sighting assets. These assets are listed in the NRMP listed below. Armories which manage permitted H-3 sighting assets shall have a qualified and designated URSM. If an armory has multiple cages one URSM is sufficient but the individual cages shall have a qualified and designated RPA. Units without items specified in the below permit are not required to abide by this requirement. Repairable Issue Points shall also have a qualified and designated URSM. Personnel who stock, store and issue permitted items containing H-3 will have user knowledge appropriate to their position. Other areas which maintain permitted items in any capacity shall have a qualified and designated URSM. These areas will also ensure handlers of the items have appropriate hazardous awareness knowledge.

- (1) NRMP No. 10-67004-T2NP
- (2) MARCORLOGCOM Order LCO 5104.1 & LCO 5104.2
- (3) POC Info:
- (a) RSO Phone: (229) 639-7670
- (b) ARSO Phone: (229) 639-9478
- (c) Item Manager's Phone: (229) 639-8275/6739

d. MARCORLOGCOM maintains a permit for Depleted Uranium (DU) on the United States Marine Corps M1A1 and M1A2 tanks. Units maintaining M1A1 and M1A2 tanks shall have a qualified and designated URSM.

- (1) NRMP No. 10-67004-T3NP
- (2) MARCORLOGCOM Order (LCO) 5104.1 & LCO 5104.2
- (3) POC Info:
- (a) RSO Phone: (229) 639-7670
- (b) ARSO Phone: (229) 639-7146
- (c) Item Manager's Phone: (229) 639-8275/6739

e. Marine Corps Systems Command, PM Ammo Division, is responsible for DU ammunition within the Marine Corps. For deployed units, a CRSM shall be qualified and designated to support all DU ammunition. As DU shall never be stocked within the Continental United States (CONUS), there is no need for assigning RSMs to support on CONUS installations.

- (1) NRMP No. 45-67854-L1NP (pending)
- (2) MCO 5104.2
- (3) POC info:
- (a) RSO Phone: (703) 432-8784
- (b) ARSO Phone: (703) 432-8938

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Appendix A

Radiological Postings/Signage

Radioactive commodity storage location shall be appropriately posted with the requisite signs, notices, and information in order to comply with the references. Examples of these signs are provided in this appendix for use by command radiation safety personnel.

Posting/Sign

1.	Caution - Radioactive MaterialsA-2
2.	No eating, drinking, chewing, applying of cosmeticsA-3
3.	NRC Form 3 (8-2017)
4.	Section 206, Energy Reorganization Act of 1974A-5
5.	Radiological Program Notice
6.	CMC(SD) Guidance for Handling Damaged Tritium DevicesA-7





NRC FORM 3 (8-2017)

UNITED STATES NUCLEAR REGULATORY COMMISSION Washington, DC 20555-0001

STANDARDS FOR PROTECTION AGAINST RADIATION (PART 20); NOTICES, INSTRUCTIONS AND OYEES REPORTS TO WORKERS; INSPECTIONS (PART 19); EMPLOYEE PROTECTION 1 EMPI μ 5

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A representative of the Nucleas Regulatory Commission can be contacted by employees who wish to repater complaints or concerns about radiological working conditions or other matters associated with NNC-replated activities at the following addresses and relephone furnifiers. INSPECTOR GENERAL To report tradents theodolog thread events, or abuse by an MRC estimates or MRC services, OFFICE OF THE HOTLINE line in the second s UNITED STATES NUCLEAR REGULATORY COMMISSION REGIONAL OFFICE LOCATIONS SAFETY HOTLINE Ta report where concerns violences of IPIC requests by your engloye **And the second second** NRC (800) 432-1156 (000) 577-8510 (800) 522-3025 TELEPHONE REGIONAL OFFICES U.S. Nursey Proprietory Community, Report 1 245 Prantime Cartier Avenue, MC, Scien 1200 Admin, GA 20200 1267 U.S. Marane frequency, Commun., Pages 1 2500 Personaria fractional, Sale (Cl Margod Prome, PA (2023-2713 U.S. Nuclear Paymenty Convenient, Fugure B 2443 Manusculto Rand, Suite 218 Line, B. 60507-4562 ADDRESS REGION ---Region I **a** = Region = = The street of the state of the Region Region IV 14

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The requirements of this section shall be prominently posted on the premises of any facility licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954, as amended, 8

(d) The Commission is guthorized to conduct such reasonable inspections and other enforcement activities as needed to insure compliance with the provisions of this section.

A-5

Radiological	Program Notice
he <u>Command Nome</u> Radiation Safety M. <u>Rank / Nome</u> . The RSM or RPA is your I nd is located in the <u>Shop Name</u> . Radiolo e reviewed in this location.	anager (RSM) or Radiation Program Assistant (RI Point of Contact for radiological-related reportir ogical reports and the documents listed below c
 Title 10 Code of Federal Regulations (10 CFR Part 19 - Notices, Instructions and 10 CFR Part 20 - Standards for Protection 10 CFR Part 21 - Reporting of Defects and 10 CFR Part 40 - Domestic Licensing of Sou 	CFR): Reports to Workers: Inspection and Investigations Against Radiation Noncompliance urce Material
 A current copy of Naval Radiological A 10-67004-T1NP 10-67004-T2NP 10-67004-T3NP 	Aaterials Permit (NRMP):
 A copy of MARCORLOGCOM INST 5104.2, 1 Naval Radioactive Material Permit (NRMP) No which contains the operating and emergency 	O May 2016, Operating and Emergency Procedures fo Os. 10.67004-T1NP, 10.67004-T2NP, & 10.67004-T3NF Procedures applicable to the licensed activities.
The MCB Camp Pendleton Installation	RSM is Mr. Jaime Ragudo. (760)763-0254 (W) (760) 214-5194 (C)

Enclosure (1)



RPA	
URSM	
IRSM	Hr. Ragudo 760-763-0254

CMC (SD) Guidance For Handling Damaged TRITIUM Devices

If a Tritium source, such as the lamp in an illuminated optical weapon sight, is broken during handling, inform all personnel to variate the area (exit the armory). Avoid breathing near the broken device. Attempt to ventilate the space and allow 30 minutes before approaching the device. This lets escaping tritium gas dissipate.

When a tritium source breaks, is no longer illuminated, or exhibits diminished illumination your Unit-level Radiation Protection Assistance (RPA) must be notified immediately. The RPA must notify the Unit or Command Radiation Safety Manager (RSM) AND the Installation RSM. Immediately execute the following actions:

1. Anyone who may have touched or handled the broken Pyrex tube should wash as soon as possible with non-abrasive soap and lukewarm water.

2. Fersonnel handling the device should wear rubber or latex gloves.

3. The device must be immediately double bagged in 2 clear zip lock baggies (DO NOT use colored trash bags or large clear trash bags as this interferes with inspecting the item without opening). The outside container must be labeled: <u>"BROKEN TRITIUM DEVICE -- DO NOT OPEN"</u>. Store the broken device in a secured container within a secured area to prevent unintentional exposure. Contact <u>lst</u> MLG. <u>lst</u> Maintenance Bn, Ordnance Maintenance Company for disposition/inspection of damaged equipment for disposition instructions. Dispose of used gloves as radioactive waste per direction of the Installation/Command Radiation Safety Manager, and then wash hands well.

4. Personnel who may have handled the broken tritium device containing more than 120 mCi may be required to report to the health clinic for a tritium bioassay. The minimum bioassay sample time is four hours after exposure. Four hours is necessary for tritium to reach equilibrium in the human body. Only after this minimum time should a urine sample be taken.

5. Tritium devices broken indoors may result in tritium contamination of the work bench, table, or the surrounding area. The area must be cordoned off and restricted until a wipe test performed in the area indicates that no contamination remains on the surface. The IRSM should have excess wipe test bits from MARFORLOGCOM to accomplish this.

5. Due to tritium's low energy level, there is no portable detection equipment that will specifically detect its presence. The only method of detecting tritium is by performing wipe tests and evaluating the wipe test on a liquid scintillation counter.

7. No maintenance will be performed on tribum devices that have diminished illumination or are not illuminated except by trained personnel at an authorized depot facility, and only if the device is <u>NOT</u> contaminated externally. Federal law prohibits unauthorized tampering with any tribum light source.

5. The URSM must report any damage or loss of mortar sight components to the permit holder immediately.

9. Broken and/or contaminated tritium devices will require further disposition instructions from the IRSM and MARFORLOGCOM depending on the device (optical sight vs mortar sight component) and device condition.

Double Bagging Procedures

- 1. Fut on gloves.
- 2. Put item in clear plattic bag, seal with tape.
- 3. Put item in second dear plastic bar, seal with tape.

the bagged item in place of this abel.

- 4 Double-bag used gloves and contact RSM for disposal.
- Place a label on the bag such as the example: (A NAVMC 1015 tag may be taped to the outside of

CALIDON Calibority	POSSIBLE BROKEN TRITIUM DEVICE DO NOT OPEN HANDLE WITH CARE	CAUTION CAUTION CAUTION
Name of the RS	O/RSM:	
Your name:		
Current Date:		
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