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September 2, 2014

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REC'D 09/09/14 10:07:01

RE: NRC License No. 09-30973-01
Amendment Request

Mr. Lawyer:

Please amend the above referenced license to incorporate revisions to our radiation safety manual (copy enclosed). The changes are relatively minor in nature; they include:

- Added revision dates to page footers
- Added references to MFC procedures
- Revisions to radioactive material security and shipping procedures
- Changed the MFC radiation safety officer in Florida from M. Sandy to O. Rodriguez

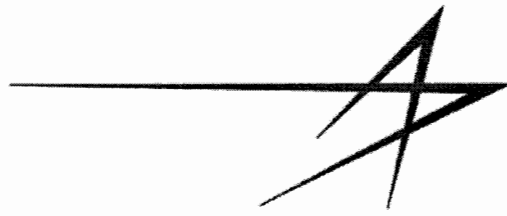
Let me know if you have any questions regarding this request.

With regards,

Margaret Doudy
Assistant General Counsel

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NMSS/RGN1 MATERIALS-002



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Missiles and Fire Control

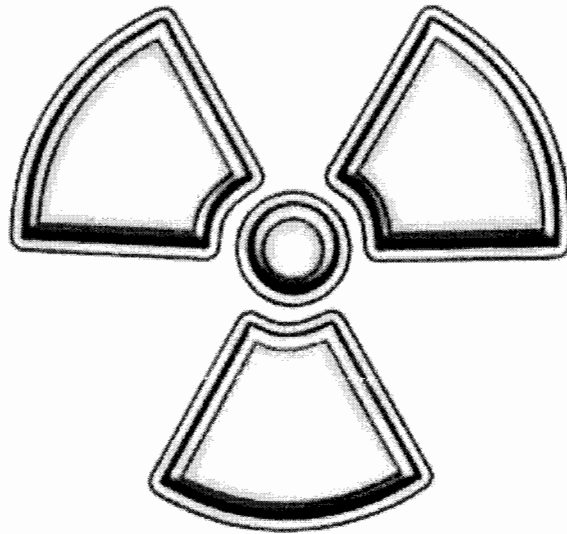
Radiation Safety Manual

for Contractor Supply Support Activity (CSSA)

& Special Repair Activity (SRA) Sites

Operating Under

U.S. NRC Jurisdiction

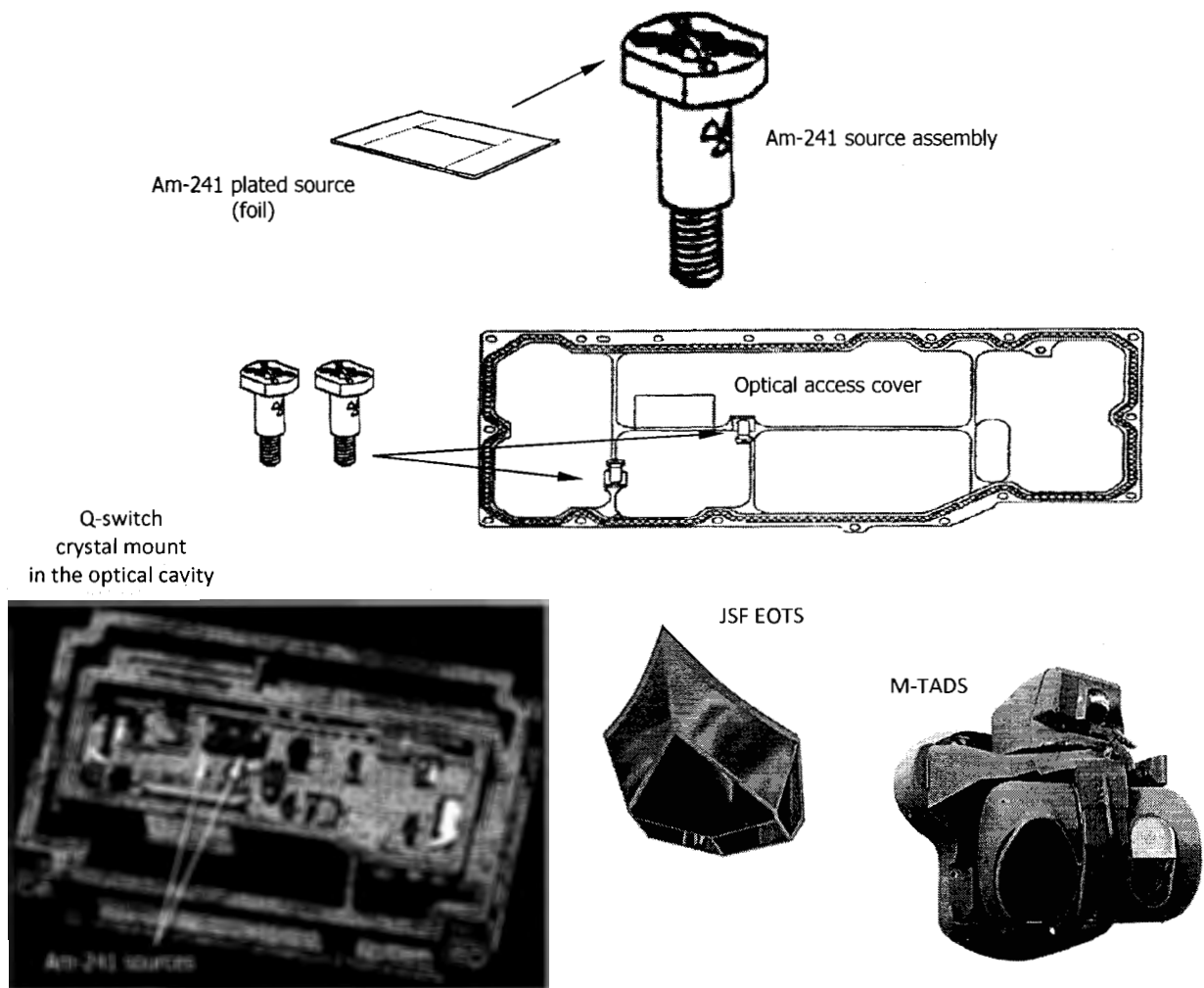


RADIATION SAFETY MANUAL

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Note: A complete revision history is on file and available upon request.



CHAPTER 1**ADMINISTRATIVE PROCEDURES****Contents**

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1.0 Purpose and Scope

The CSSA/SRA sites use Am-241 is in the form of sealed foils – very thin plated metal sheet sources mounted on top of small screws, that are components of a LMC-manufactured device – the Static Eliminator for Laser Target Designator/Ranger (SE-LTD/R), which is installed in the Modernized Target Acquisition Designation Sight and Pilot Night Vision System (M-TADS/PNVS) Modernized Laser Range Finder Designator (M-LRFD). The SE-LTD/R laser allows identification, tracking and designation of targets. Two Am-241 sources are installed inside each laser to dissipate static charges that may build up on the device’s Q-switch crystal mount (refer to the graphics on the previous page).

A variety of SE-LTD/R models are approved for distribution under state of Florida Radioactive Sealed Source and Device Registry (SSDR) No. FL-1116-D-101-S, a registration that documents the device’s safety evaluation results. However, only the M-TADS/PNVS M-LRFD is possessed at the CSSA/SRA sites, so only that model is authorized by the radioactive materials license.

MFC has established a radiation safety program (RSP) addressing license-related facilities, equipment, procedures and personnel qualifications. This manual describes the RSP and how safe operations and compliance with regulatory requirements are achieved.

Am-241 is widely used as an ion generator and static eliminator; small (1 microcurie) sources of the radioisotope are used in household smoke detectors, and the sources used by LMMFC are only slightly higher in activity: 4 – 6 microcuries. Despite such low activities, safe operations require a respect for the radiation hazard and adherence to the philosophy of maintaining radiation exposures as low as reasonably achievable (ALARA). This manual describes all aspects of the radiation safety program applicable to site operations. Compliance with its instructions is mandatory.

MFC personnel are also required to follow MFC policies and procedures applicable to licensed activities. For example, personnel must be familiar with, and comply with applicable provisions of the procedures of Cross-Functional Pro. No. 1-2-199 (Control of Radioactive Material and Radiation Producing Equipment).

CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.1 Regulations

1.1.1 NRC Regulations Title 10, Code of Federal Regulations

Possession and use of radioactive material at sites under federal jurisdiction is regulated by the U.S. Nuclear Regulatory Commission (NRC) under Title 10, Code of Federal Regulations (CFR). Key parts of the regulations that apply to MFC sources are listed below.

- Part 19 Notices, Instructions and Reports to Workers: Inspections and Investigations
- Part 20 Standards for Protection Against Radiation
- Part 21 Reporting of Defects and Noncompliance
- Part 30 Rules of General Applicability to Domestic Licensing of Byproduct Material
- Part 71 Packaging and Transportation of Radioactive Material
- Part 110 Export and Import of Nuclear Equipment and Material
- Part 150 Exemptions and Continued Regulatory Authority in Agreement States
- Part 170 Fees for Facilities, Materials, Import and Export Licenses, and Other Regulatory Services
- Part 171 Annual fees for Reactor Licenses and Fuel Cycle Licenses and Materials Licenses

1.1.2 Title 49, Code of Federal Regulations (49 CFR)

The Am-241 sources possessed by MFC are classified as hazardous material subject to applicable regulations of the U.S. Dept. of Transportation (DOT). Title 49, Code of Federal Regulations (49 CFR). Parts 170 – 189 address transportation of radioactive material; commonly referenced parts are listed below. DOT regulations are available at <http://www.access.gpo.gov/nara/cfr/index.html>. Note: DOT hazmat regulations are enforced by the state, U.S. DOT and the Federal Aviation Administration.

- Part 171 General Information, Regulations and Definitions
- Part 172 Hazardous Materials
- Part 173 Shippers -- General Requirements for Shipments and Packagings
- Part 175 Carriage by Aircraft
- Part 177 Carriage by Public Highway

1.2 License Requirements and Restrictions

Use and possession of radioactive material must be confined to the locations and purposes authorized by the license. The license is divided into two sections: **Items** and **Conditions**, which are described below. The first section lists Items 1 - 9. They are followed by the license conditions, which will vary in number based on the authorizations provided by the license, but always begin with Condition 10.

1.2.1 License Items

<u>Item No. and Title</u>	<u>Description</u>
1. Name	Lists the legal name of the licensee.
2. Address	Lists the mailing address, which may be different from the physical address where records and radiation sources are used/stored. If the two addresses are different, the physical address is listed in Condition 10.
3. License Number & Correspondence Reference	Lists the number assigned to the license and the correspondence that generated the current amendment. The license number should be referenced in all license-related correspondence.

CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.2.1 License Items (contd.)

1.2.1 License Items (contd.)

<u>Item No. and Title</u>	<u>Description</u>
4. Expiration Date	Lists the date the license will expire. The license is valid for 5 years from the date of issuance. A renewal application must be submitted at least 30 days prior to the expiration date.
5. Docket Number	Lists the number assigned by the NRC to track the licensing action that resulted in issuance of the each license amendment.
6. Radioactive Material	Describes the type (element and mass number) of radioactive material the license authorizes for possession and use.
7. Form	Describes the form of radioactive material the license authorizes. For sealed sources, the source mfr. name and model number are listed.
8. Possession Limit	Lists the maximum possession limits for radioactive sealed sources. A license may authorize a possession limit higher than the number of sources possessed, but possession of more sources than authorized is a violation and may result in enforcement actions.
9. Use	Describes the uses that are approved for the sources and devices listed in the previous items. Improper use of radioactive material is a license violation and may result in enforcement actions.

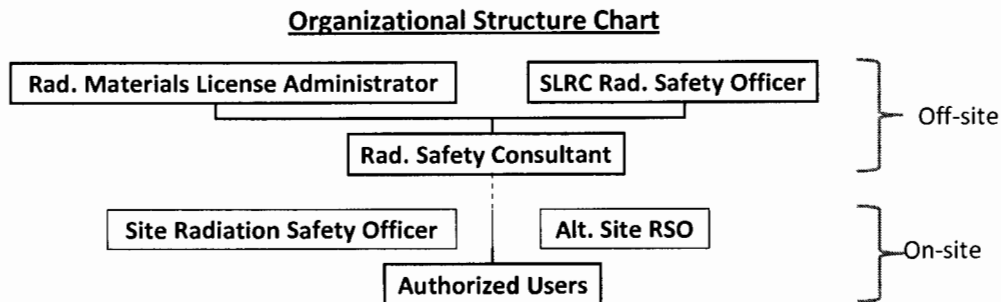
1.2.2 License Conditions

License conditions describe requirements and limitations applicable to the radioactive materials authorized by the license. Additional requirements and conditions may be incorporated as appropriate to protect public health and the environment. If a licensee seeks added authorizations, more license conditions may be added. A NRC license has conditions addressing the following:

- Authorized locations of use and storage
- Enforcement provisions
- Authorized user (AU) and radiation safety officer (RSO) designations
- Radioactive material use limitations
- Radioactive material transportation requirements
- Inventory requirements
- Licensee commitments

1.3 Radiation Safety Program Organization

The organizational structure of the MFC RSP is described below.



CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.4 Personnel Qualifications

1.4.1 Rad. Materials License Administrator (RMLA)

The Radioactive Materials License Administrator (RMLA), based at the Sand Lake Rd. Complex in Orlando, FL, provides regulatory and legal support to the RSO and Site RSO. The RMLA is not directly involved in licensed activities, but is a certifying official for Lockheed Martin Corporation.

1.4.2 SLRC Radiation Safety Officer (RSO)

The Sand Lake Road Complex (SLRC) RSO provides oversight and support to all MFC sites that possess sources of ionizing radiation. The RSO is a qualified authorized user of licensed sources (see Chapter 2). An alternate RSO may also be appointed.

1.4.3 Site Radiation Safety Officer (SRSO)

The Site RSO is the individual delegated responsibility for their site's radiation safety program. The SRSO is a qualified authorized user of the Am-241 sources authorized under the site license, with training as described in Chapter 2. An alternate SRSO may also be appointed.

1.4.4 Radiation Safety Consultant (RSC)

The RSC is an optional contract position with extensive health physics training and experience that provides technical and regulatory support to the RMLA, SLRC RSO, and all MFC site RSOs. The RSC's qualifications are vetted by the RMLA and SLRC RSO. The RSC is qualified to train and audit MFC authorized users and their site RSPs. The RSC is a LM certifying official for all MFC licenses.

1.4.5 Authorized Users (AUs)

AUs are authorized to work directly with devices containing Am-241 sources authorized under the site license, with training as described in Chapter 2. Other personnel may handle devices containing Am-241 sources only under the direct supervision of an AU. Documentation of AU training is maintained on file.

1.5 Personnel Responsibilities

1.5.1 RSO & Site RSO

Management has delegated to the RSO authority to fulfill the duties and responsibilities listed below. The RSO may delegate duties to the Site RSO and to site AUs, but the RSO has final responsibility for ensuring all program requirements are fulfilled. An Assistant/Alternate Site RSO may also be appointed to provide support to the program. Other staff may be assigned administrative RSP tasks (e.g., records maintenance) under the supervision of the SRSO.

The duties and responsibilities of the RSO include the items listed below.

- Ensure compliance with the terms and conditions of the rad. materials license, applicable state and federal regulations, and company policies and procedures;
- Ensure that radioactive materials are used only by personnel authorized by the license, that all personnel read and understand radiation safety-related procedures, and that they follow instructions provided by the procedures;
- Ensure that radioactive materials are secured against unauthorized access or removal;

CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.5.1 RSO & Site RSO (contd.)

- Stop operations that are unsafe or violate regulatory requirements or company policies and procedures, investigate abnormal occurrences and incidents involving radioactive materials, take control and coordinate effective response in the event of a radiological emergency, and implement corrective actions to prevent recurrence;
- Serve as a contact with the NRC and other regulatory and law enforcement agencies for radiological events; and
- Maintain all records required by the license and state and federal regulations.

1.5.2 Authorized User Responsibilities

Authorized users (AUs) are responsible for many aspects of day-to-day operations within the radiation safety program. AU responsibilities include:

- Assure compliance with regulatory requirements and the terms and conditions of the license, radiation safety program and company policies and procedures;
- Maintain occupational and public radiation exposures as low as reasonably achievable;
- Report any situation that appears to be unsafe or may lead to a violation of regulations, license conditions or unnecessary exposure to radiation; and
- Communicate and coordinate with the RSO on radiation safety and regulatory issues.

1.6 ALARA Policy

1.6.1 ALARA Philosophy

Part 20 of 10 CFR establishes standards for protection against radiation hazards. 10 CFR 20.1101 requires use (to the extent practical) of procedures and engineering controls based on sound radiation protection principles to achieve occupational and public doses that are as low as reasonably achievable (ALARA). The basis for the ALARA philosophy is that unnecessary radiation exposures should be avoided, even though occupational dose limits pose a very low risk of injury. The objective is to keep exposures as far below regulatory limits as reasonably achievable through good planning and practice, as well as by a management commitment to policies that deter departures from good practices.

1.6.2 Management Commitment

MFC management is committed to the ALARA philosophy of maintaining occupational and public radiation doses as low as reasonably achievable. The RSO and Site RSOs have been delegated authority to ensure adherence to ALARA principles. Management will support the RSO and SRSOs in instances where this authority must be asserted.

All reasonable modifications will be made to procedures, equipment and facilities to reduce exposures, unless the cost is considered to be unjustified. Management is prepared to describe the reasons for not implementing modifications that have been recommended.

CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.6.3 RSO/SRSO ALARA Responsibilities

The RSO and SRSOs will emphasize the ALARA philosophy to workers, instruct personnel on current procedures and provide guidance on relevant changes to reduce exposures.

Annual Program Review. At intervals not to exceed 12 months, the RSO or SRSO will conduct a formal review of the radiation safety program's content and implementation, as required by 10 CFR 20.1101. The review will include an evaluation of equipment, procedures, records, inspection findings and incidents. The program will be assessed to determine if any modifications are needed. A summary of findings, including a description of any actions proposed and taken, will be documented, discussed with management, and signed and dated by the RSO and a management representative. Audit reports will be maintained for at least 3 years.

1.6.4 Worker ALARA Responsibilities

Personnel working with radioactive material will apply ALARA principles and good work practices to minimize their occupational radiation exposures, and will strictly adhere to procedures in order to keep their exposures, and exposures to members of the public, ALARA.

1.7 Licensing Procedures

1.7.1 License Renewal

Per 10 CFR 2.109 and 30.36, a license is valid for 10 years from the last day of the issuance month. Provided a renewal application is received 30 days prior to the expiration date, the existing terms and conditions are extended until the renewed license is issued. All renewal packages must be in triplicate. A renewal application requires a complete and up-to-date application if there have been significant changes in the RSP, regulatory requirements, and/or NRC guidance. Alternately, a description of the exact nature of RSP changes, additions, and deletions may be provided.

1.7.2 Amendment Requests

Per 10 CFR 30.36(a), licensed activities must be confined to the locations and purposes approved by the license. Prior to implementing any change in licensed activities, a request to amend the license must be submitted and approved by the NRC. Examples of changes that require a license amendment are facility relocations, procedure changes, increasing gauge possession limits, or adding a new laser model. Amendment requests should reference the license number, and must be dated and signed by a certifying official (person authorized to make legally binding statements on behalf of the licensee).

The NRC must be notified in writing within 30 days of a change of RSO. The notification must include evidence of the new RSO's qualifications (as a minimum, the RSO must meet the same training requirements that apply to authorized users; formal RSO training is recommended).

1.7.3 Exemption/Exception Requests

The NRC may, upon application by a licensee or its own initiative, grant exemptions or exceptions from regulatory requirements. The process is described in 10 CFR 19.31, 20.2301 and 30.11.

1.7.4 Vacating Premises

The NRC must be notified in writing no less than 30 days before vacating or relinquishing possession or control of the facility listed in the license. The notification must be dated and signed by a certifying official, and must describe the relocation of all radioactive material previously located at the facility. Documentation of transferred material may be required. A radiation survey may also be required.

CHAPTER 1 – ADMINISTRATIVE PROCEDURES

1.7.5 License Termination

The NRC must be notified within 60 days of a decision to terminate licensed activities, using NRC Form 314. If required by 10 CFR 30.36(g), a decommissioning plan must be submitted to the appropriate NRC regional office for approval and the decommissioning conducted per 10 CFR 30.36(h) and (j). Before the license is terminated, records relevant to decommissioning must be submitted, demonstrating that the premises are suitable for release for unrestricted use. The notification must be dated and signed by a certifying official, and must describe the disposition of all radioactive material possessed under the license. Radiation surveys and documentation of radioactive material transfers may be required.

1.8 Record Retention Procedure

Records relating to activities authorized under the radioactive materials license will be maintained as described below, as required by the NRC and federal (49 CFR) regulations. Note: Corporate policies and procedures may require retention of additional records and retention of the below records for longer periods than specified by the referenced regulations.

1.8 Record Retention Procedure (contd.)

Document	Retention Interval	Reference
Current copy of applicable NRC regulations (internet access is acceptable)	Until termination of license	10 CFR 19.11
Radioactive materials license (all active amendments & supporting documents)	Until termination of license	10 CFR 19.11
Provisions of radiation protection program	Until termination of license	10 CFR 20.2102
Annual RSP/ALARA reviews	3 years after records are made	10 CFR 20.2112
Records demonstrating compliance measurements used to determine doses & to evaluate radiation levels or radiation hazards	Until termination of license	10 CFR 20.2102
Authorized user & RSO training records	Not specified*	---
USDOT hazmat employee training records	90 days from last day of employment	49 CFR 172.704(d)
Inventory records	3 years after records are made	License condition
Radioactive material and radwaste receipt, transfer & disposal records	Rad. material: 3 years*; radwaste: license termination	10 CFR 20.2108, 30.51(a)
Radioactive material shipping papers	2 years after shipment	49 CFR 172.201(e)
Radioactive waste shipping papers	3 years after shipment	49 CFR 172.201(e)
Rad. detection instrument calibration records	Not specified*	---

*Recommendation: retain training records until license termination, and retain instrument calibration records for 3 years past the calibration date.

1.9 Radioactive Material Transfer and Disposal Procedures

Transfer of Am-241 sources will only be to companies or individuals specifically licensed to possess them, in accordance with the below instructions.

1.9.1 Verification

If a source is bought, sold or transferred for disposal, verification of the transferor's and transferee's authorization to possess the radioactive material will be documented. Either a copy of each other's radioactive materials license will be exchanged, and the transferor's license will be retained on file as evidence of an authorized transfer.

1.9.2 Documentation

All transfer and disposal records will be retained on file until termination of the license. Documentation of the transfer will include the following:

- Description of material being transferred (source manufacturer, model and serial number, type and activity of radioactive material)
- Name, address, and license number of the transferor and transferee
- Date of the transfer and signatures of the individuals shipping or receiving the source(s)

1.10 Notification and Reporting Procedures

1.10.1 Reports of Stolen, Lost or Missing Radiation Sources

A. Telephone Reports

A stolen, lost or missing Sealed Source must be reported by phone 1-800-432-1156, Nuclear Regulatory Commission (NRC) immediately after its occurrence becomes known, if it appears that an exposure could result to individuals in unrestricted areas.

B. Written Reports

Telephone reports of stolen, lost or missing radioactive material must be followed by a written report to the NRC within 30 days after making the telephone report. Written reports shall include the information specified below.

- Description of the radioactive material (isotope, form and quantity)
- Description of the circumstances under which the loss or theft occurred
- Statement of disposition or probable disposition of the radiation source
- Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible doses received by persons in unrestricted areas
- Actions that have been or will be taken to recover the source
- Procedures or measures that have been or will be adopted to prevent recurrence

1.10.2 Incident Notifications

Reports may be made by phone or fax; names of individuals who have received radiation exposures must be stated in a separate and detachable portion of the report. To prevent identity theft, never submit workers' social security numbers or birth dates.

CHAPTER 1 – ADMINISTRATIVE PROCEDURES**1.10.2 Incident Notifications** (contd.)

Immediate Notification: Required for any event that might have caused or threatens to cause any of the following: a dose of 25 rem or more, an eye dose of 75 rem or more, or a skin, extremity or total organ dose of 250 rad.

24 Hour Notification: Required for any event that might have caused or threatens to cause any of the following: an individual to receive in 24 hours a dose greater than 5 rem, an eye dose greater than 15 rem, or a skin, extremity or total organ dose greater than 50 rem.

1.10.3 Reportable Event Notifications**A. Written Reports**

A written report must be submitted to the NRC within 30 days of learning of any incidents requiring immediate or 24-hr. notification, or of a radiation dose in excess of:

- Occupational dose limits for adults (5 rem) or minors (500 mrem);
- Limits for an embryo or fetus of a declared pregnant woman (500 mrem);
- Public dose limits (2 mrem in any 1 hour or 100 mrem in 1 year); or
- Radiation levels greater than 20 mrem in unrestricted areas.

B. Report Information

Reports must describe the extent of exposure of individuals, including (as appropriate):

- Estimates of each individual's dose;
- The levels of radiation involved;
- The causes of the elevated exposures, dose rates or dose rates; and
- The corrective steps taken or planned to prevent recurrence, including a schedule for achieving compliance with license conditions.

1.10.4 Reports of Leaking/Contaminated Sources

The NRC must be immediately notified upon learning of any leaking or contaminated sealed source. A follow-up written report must be submitted to the NRC within 5 days.

CHAPTER 2

RADIATION SAFETY TRAINING PROGRAM

2.0 Introduction

Handling and use of Am-241 sources is restricted to trained personnel (authorized users or AUs) – individuals that has completed LMMFC radiation safety training – or personnel who work under the direct supervision of an AU.

There are three training components associated with activities authorized under the radioactive materials license. Radiation awareness training (instructions to workers) and authorized user (AU) training is provided to each worker using Am-241 sources. Hazmat employee training is provided to any worker associated with the shipment of packages containing radioactive material. Sections II – IV provide additional details for each type of training.

<u>Training Requirement</u>	<u>Regulation</u>
Radiation awareness training	10 CFR 19.12
Authorized user training	10 CFR 30.33(3)
Hazmat employee training	49 CFR 172.700 - 172.704

2.1 Instructions To Workers

In accordance with 10 CFR 19.11, personnel working with Am-241 sources receive radiation safety awareness level training (“instructions to workers”). The training is addressed in the custom computer-based training (CBT) modules developed for MFC personnel to qualify as authorized users. The below topics are covered:

- Information on storage, transfer, or use of Am-241 sources possessed under the license
- Health protection problems associated with exposure to radiation or radioactive material
- Precautions and procedures used to minimize exposures
- Applicable provisions of NRC radiation control regulations and the radioactive materials license
- Workers’ responsibility to report any unsafe conditions in the workplace
- Appropriate responses to warnings made in the event of incidents having the potential to involve radiation exposure
- Reporting requirements for occupational radiation exposures described in NRC radiation control regulations

CHAPTER 2 – TRAINING PROGRAM

2.2 Authorized User (AU) Training

2.2.1. AU Training Program

Am-241 sources are used by, or under the direct supervision of individuals that have completed MFC custom CBT modules and supervised practical training. Completion of the four CBT modules takes approximately four hours; topics are listed below. Documentation of completion of CBT and practical training for each AU is maintained on file as evidence of compliance.

- Radiation safety and ALARA principles and practices
- Characteristics of ionizing radiation
- Units of radiation dose and quantities
- Radiation detection instrumentation
- Biological effects of radiation
- State and federal regulations
- MFC radiation safety program and related procedures

2.2.2 Testing Methodology

A score of 80 or better on the CBT quizzes is a passing grade. In the event that an individual fails to successfully complete the CBT modules, an electronic notification is sent to the system administrator, who resets the program for a second attempt. Second failures will be handled on a case-by-case basis, with a final determination of the worker's status made by the RSO. Upon successful completion of the CBT modules, each worker must complete at least 4 hours of supervised practical experience working with radioactive material.

2.3 Hazmat Employee Training

The Am-241 sources used in MFC lasers are classified as hazardous material by the U.S. Department of Transportation (DOT). In accordance with DOT regulations (49 CFR Part 172, Subpart H), workers must complete hazmat training prior to performing work that directly affects hazardous material transportation safety. Exception: employees can work for 90 days without the training, provided a hazmat-trained employee directly supervises them. Refresher training is provided at least once every 2 years (per the IATA DGR). Hazmat training includes the following topics: general awareness/familiarization, function specific, safety, and security awareness training. The training is provided by qualified third party trainers, through in-house training, or combinations of the two. Documentation of hazmat training is maintained for the duration of each worker's employment, plus 90 days, and includes the information listed below.

- Employee's name and date of training
- Description, copy or location of training materials used
- Name and address of person providing the training
- Certification that the employee has been trained and tested as required

CHAPTER 3**OPERATING PROCEDURES**

3.0 General Rules of Use**3.0.1 Availability of Procedures**

A complete and current copy of MFC operating and emergency procedures must be available for reference by authorized users of the Am-241 sources housed in the lasers.

3.0.2 ALARA Philosophy

All personnel working with Am-241 sources must follow the ALARA philosophy – keep radiation exposures as low as reasonably achievable. The objective is to reduce occupational and public exposures as far below regulatory limits as possible by means of good work practices. The following methods must be applied to minimize radiation exposures:

- Minimize the **time** spent in close proximity to the sources (shorter the time, the lower the dose);
- Maximize the **distance** from the sources (doubling the distance quarters radiation intensity); and
- Make use of available **shielding** to block out radiation.

3.0.3 Prohibition

Under no circumstances are personnel authorized to open the SE-LTD/R housing the Am-241 sources.

3.0.4 Radiation Surveys

If damage to a laser occurs or is suspected, notify the Site Radiation Safety Officer (SRSO) to make arrangements to obtain an appropriate radiation survey instrument to check to measure the radiation levels. If elevated readings are noted, refer to the emergency procedures for additional instructions.

3.1 Security

Radioactive material possessed under the LMC AZ license must be controlled in a manner that prevents unauthorized access or removal. When not under direct supervision, the SE-LTD/R unit housing the Am-241 sources is stored in a secured area. When used for storage of the devices, the area must be kept locked, with keys/cyphers controlled by authorized personnel to secure the radioactive material from unauthorized access or removal.

3.2 Ordering and Receiving Radioactive Material

3.2.1 The MFC Rad. Materials License Administrator (RMLA) must approve or place all shipments of Am-241 sources to the site. The RMLA will ensure that the requested sources are authorized by the license and that possession limits are not exceeded.

3.2.2 Transport carriers must be provided instructions on where to deliver the package to prevent loss of control. Arrangements will be made to ensure that a qualified hazmat employee is available to receive and take possession of the package.

3.3 Opening Packages Containing Radioactive Material

- 3.3.1** Only a qualified hazmat employee can open a package containing radioactive material.
- 3.3.2** Visually inspect the package for signs of damage. If damage is noted, immediately notify the SRSO, who will arrange to have the radiation levels checked with a survey meter to determine if the shielding has been compromised or radioactive contamination is present. If elevated readings are found, the SRSO will make arrangements for proper handling and disposition of the package and its contents, and the SRSO or MFC RSO will make the required notifications and submit any required reports (see Chapter 1).
- 3.3.3** If the physical inspection indicates no damage, remove the packing slip. Open the container and verify the contents. Closely examine the equipment for signs of damage and verify that the contents match the information provided on the packing slip. If anything appears out of place or missing, notify the SRSO. If the inspection results are satisfactory, store and lock the equipment in the designated storage location. Provide copies of all documentation to the SRSO, which will maintain them on file.

3.4 Transportation

3.4.1 Regulation of Radioactive Materials Shipments

The Am-241 sources in the SE-LTD/R are classified by the U.S. Dept. of Transportation (USDOT) as hazardous material, so SE-LTD/R shipments are subject to USDOT hazmat regulations (49 CFR Subchapter C, also known as the HMR), and workers with job functions that impact transportation safety must complete hazmat employee training. Air shipments are also subject to the requirements of the International Air Transport Association (IATA). IATA requirements are found in that organization's "Dangerous Goods Regulations" (DGR).

In addition to the instructions provided below, MFC shipments are subject to the requirements specified in MFC Cross-Functional Procedure No. 1-2-199 ("Control of Radioactive Material and Radiation Producing Equipment"), which defines the system used for the general flow of material and paperwork for outgoing shipments.

3.4.2 Package Classification

- A.** The Am-241 sources in the SE-LTD/R are classified as "special form radioactive material" per 49 CFR 173.403 and IATA DGR 10.3.4.1. A package containing an SE-LTD/R is classified by as an "excepted package – instruments and articles" and is shipped by common carrier – a commercial courier such as FedEx.
- B.** The SE-LTD/R meets the definition of a "limited quantity of Class 7 (radioactive) material" per 49 CFR 173.403 because it does not exceed the package limits specified in 49 CFR 173.425 and conforms to the package requirements specified in 49 CFR 173.421.
- C.** Per 49 CFR 173.421, a package containing an SE-LTD/R meets the designation of "excepted packages for limited quantities of Class 7 (radioactive) materials" by adhering to the specifications described in the rule; i.e., the package meets the general design requirements of 49 CFR 173.410 (a "strong, tight package"), the radiation level at any point on the external surfaces of the package don't exceed 0.5 mrem/hour, there is no removable contamination, the inner packaging is labeled "Radioactive", and provided the package is prepared for shipment as specified in 49 CFR 173.422, which requires the outside of each package to be marked with the four-digit UN identification number for the material, preceded by the letters "UN" (i.e., UN 2911).

CHAPTER 3 – OPERATING PROCEDURES

3.4.2 Package Classification (contd.)

- D. Sec. 173.424 provides the final designation for the sensor when in transport mode: "Radioactive material, excepted package – instruments." This is because the device meets the criteria – its radioactive material is completely enclosed by non-active components, and the maximum radiation level at 10 cm is less than 10 mrem/hr.

3.4.3 Preparing Packages for Shipment

The qualified on-site hazmat employee is responsible for ensuring that each SE-LTD/R is properly packaged, marked, labeled, secured, blocked and braced, and that proper documentation accompanies the package during shipment.

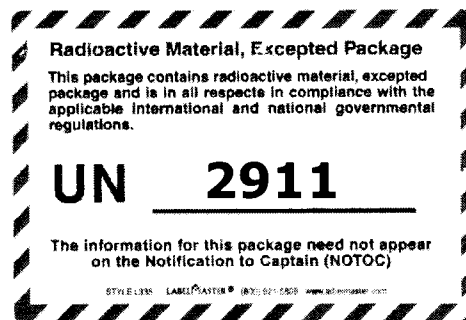
A. Packaging requirements

- The packaging must meet the general design requirements of 49 CFR 173.410 ("strong, tight, package").
- The package's radiation levels cannot exceed 0.5 mrem/hour on any external surfaces, per 49 CFR 173.421(a)(2).

B. Markings & labels on transport containers must be durable, legible, in English, and printed on or affixed to the package surface (e.g., a label, tag or sign). Required markings include:

- The **package interior** must bear the marking "Radioactive" (unless the outer package is so marked), per 49 CFR 173.421(a)(4);
- The **package exterior** must be marked with the proper ID number: "UN 2911" per 49 CFR 173.422(a) and 10.7.1.3.2 of the IATA DGR;
- The **package exterior** must be marked with the name and address of the shipper and consignee, per 10.7.1.3.2 of the IATA DGR (no equivalent USDOT requirement); and
- The **package exterior** must bear a rectangle label bordered by red hatchings with the heading "Radioactive Material – Excepted Package" and the following statement: "This package contains radioactive material, excepted package and is in all respects in compliance with the applicable international and national governmental regulations." Below the statement are the letters "UN" followed by space for writing in the appropriate UN number; refer to 7.2.4.6 of IATA DGR.

Examples of markings/labels used by MFC are provided below.



CHAPTER 3 – OPERATING PROCEDURES

3.4.3 Preparing Packages for Shipment (contd.)

C. Shipping papers

Excepted packages are exempt from shipping paper requirements; however, IATA requires the proper shipping name and UN number ("Radioactive material, excepted package – instruments, UN 2911") to be printed on the air waybill (IATA: 10.5.8.2.1 and 10.8.8.3, DGR).

D. Inspection

Prior to shipment, inspect the transport container to ensure proper packaging and unimpaired physical condition of the container and its closure devices. Report defects to the SRSO, who will ensure that corrective actions are implemented prior to shipment.

3.5 Posting Requirements

3.5.1 Permanent Storage Facility

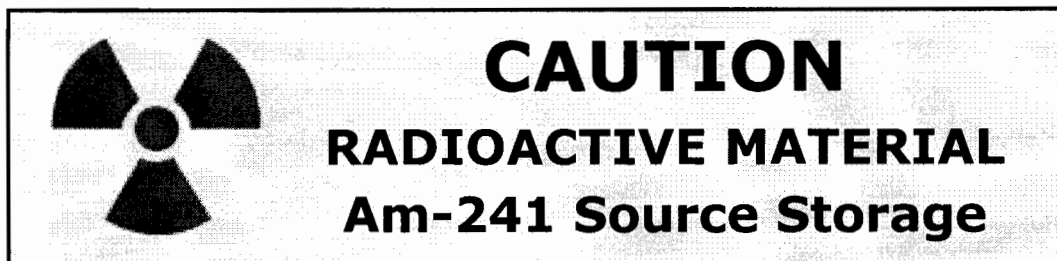
A current and legible copy of the documents listed below must be conspicuously posted as described to permit workers to observe them on the way to or from a restricted area. Posted documents must be replaced if defaced or altered.

- **Site emergency procedures**
- **"Notice to Employees" Form**
- **Enforcement correspondence:** Any notice of violations, proposed imposition of administrative penalties, and orders and responses to the cited violations (posted within 5 working days of receipt and for at least 5 working days, or until corrective actions have been implemented, whichever is later)
- **Other required documents**
 - DSF radioactive materials license
 - Site operating procedures

Note: Due to the impracticality of posting the regulations, license and operating procedures, the "Notice to Employees" form is used to indicate where those documents can be reviewed.

3.5.2 Radioactive Materials Warning

Areas where radioactive material is stored should be posted with a "Caution (or Danger), Radioactive Material(s)" sign. Below is a sample sign that may be used to satisfy the posting requirement.



CHAPTER 4

EMERGENCY PROCEDURES

4.0 Stolen, lost or missing radioactive material

Immediately notify the Site Radiation Safety Officer (SRSO), who will notify NRC Region 1 and, if appropriate, local law enforcement agencies.

4.1 Damaged (or suspected damaged) to Am-241 sources

- Evaluate the situation to determine if anyone may have been exposed to radiation. Assess life threatening injuries first; if appropriate; notify emergency personnel and hospital staff regarding possible radioactive material contamination.
- Secure the area using a radius of at least 5 feet from its location. Maintain direct surveillance to prevent unauthorized entries.
- As soon as possible, notify the Site RSO, who will notify the NRC in accordance with reporting requirements.
- Visually inspect the equipment to determine if the optical access cover of the laser transceiver is damaged. If appropriate, wait for technical assistance/instruction from the Site RSO or another radiation safety specialist prior to moving the equipment. The extent of damage/contamination will be determined and if necessary, appropriate actions will be taken to decontaminate the area.
- If contamination is suspected, the equipment must be checked with a survey meter for the presence of elevated radiation levels and/or contamination prior to being released. The Site RSO will arrange for the measurements. A leak test may also be performed.

RADIOLOGICAL EMERGENCY CONTACTS

MFC RSO (SLRC, Orlando, FL) – Olivia Rodriguez		Office: (407) 414-9128 Cell: (407) 247-7362
DSF Site RSO – Gerald (JR) Anthony Office: (407) 517-6603	Alternate - Danny Arce Office: (407) 517-6604	LM Security (407)356-2501
Letterkenny SRA, PA Site RSO – Vincent Ojeski Office: (717) 267-5604	Alt. RSO – Greg Davis Office: (717) 267-5796	LK Provost Marshall (717) 267-8800
Ft. Hood CSSA, TX Site RSO – Andres Silva Office: (254) 288-2641	Alt. RSO – Jonny Childers Office: (254)288-2641	Ft. Hood Provost Marshall (254) 287-2176
Ft. Rucker CSSA, AL Site RSO – Gina Neptune Office: (334) 255-0624	Alt. RSO – Chuck Kisner Office: (334) 255-0624	Ft. Rucker Provost Marshall (354) 255-2222
Ft Campbell CSSA, KY Site RSO – Robyn Willis Office: (270) 798-3335	Alt. RSO – Jerry Henson Office: (270) 412-6753	Ft. Campbell Provost Marshall (270) 798-7113
MFC Radiation Safety Consultant - Walt Cofer	Cell: (850) 519-5351	
U.S. NRC Region 1 24-Hr. Rad. Emergency Notification No.:	(301) 816-5100	

CHAPTER 5

INVENTORY PROCEDURE

5.0 Purpose and Scope

Semiannual inventories must be performed to account for all radioactive sealed sources possessed. This chapter provides instructions for addressing inventory requirements.

5.1 Inventory Procedure

5.1.1 Physical Inspection

At least every 6 months, evaluate the general condition of each device containing radioactive material to determine if any damage. In addition, verify that all of the identification and other labels and markings are present and legible.

If the inspection reveals missing labels/markings or apparent damage, immediately notify the Site RSO and/or the MFC RSO, who will implement corrective actions (e.g., obtain replacement labels, perform radiation surveys, etc.).

5.1.2 Inventory Records

Complete the below form for each inventory, and retain each inventory record for 3 years beyond the date of the inventory. Inventory information needs to include the following:

- Laser manufacturer, model number, part number and serial number
- Source manufacturer and model number, and source vendor model number
- Source serial number
- Source isotope and quantity (activity)
- Location
- Date of inventory
- Signature of the Site RSO (or RSO designee)
- Any relevant notes regarding conditions warranting corrective action that are identified during the inventory

Note: The inventory form shown below has been partially completed to illustrate how the information should be recorded; the listed information will need to be changed as the inventory changes.



SEMIANNUAL INVENTORY OF RADIOACTIVE MATERIAL

U.S. NRC Radioactive Materials License No. 09-30973-01

Date of Inventory: _____

RSO (or designee) Signature: _____

The following information applies to all of the sources listed below:

Laser Mfr. & Model No.: Lockheed Martin Corp. Model SE-LTD/R
Laser Part No.: 77454015-0001
Source Mfr. & Model No.: QSA Global, Inc. (formerly Amersham Corp./AEA Technology QSA) Model AMM.1001H
Vendor Source Model No. AP00005806
Isotope: Am-241 **Max. Activity:** 12 uCi (two 6 uCi sources)

No.	Date In	Laser Serial No.	Source #1 SN	Source #2 SN	Location	Date Out
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Notes: _____

This is to acknowledge the receipt of your letter application dated

9-02-14, and to inform you that the initial processing which includes an administrative review has been performed.

Amend: 09-30973-01
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 584874.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.