DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A. MOFFETT BUILDING
47123 BUSE ROAD, BLDG 2272
PATUXENT RIVER, MARYLAND 20670-1547

IN REPLY REFER TO

5104
Ser AIR-7.10.1/703
JAN 0 8 2015

From: Assistant Commander for Corporate Operations and Total Force, Naval Air Systems Command
To: Officer in Charge, Naval Sea Systems Command Detachment, Radiological Affairs Support Office (RASO), Yorktown, VA

Subj: RENEWAL REQUEST FOR NAVY RADIOACTIVE MATERIAL PERMIT (NRMP) 19-00019-W2NP

Encl: (1) NRC Form 313 for NRMP 19-00019-W2NP
(2) NAVAIRINST 5104.2 (Draft Instruction)
(3) Radiation Safety Officer Appointment Letter
(4) Assistant Radiation Safety Officer Appointment Letter

1. Enclosures (1) through (4) are submitted for subject renewal. Please notify my point of contact as soon as possible if further information is required for the renewal to NRMP 19-00019-W2NP.

2. For further information, contact Michael R. Cronrath, ARSO, AIR 7.10.1, DSN 757-2133 or Commercial (301) 757-2133.

GARY M. KURTZ

NRC FORM 313 (03-2014)
10 CFR 30, 32, 33, 34
35, 36, 37, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE

APPROVED BY OMB: NO. 3150-0120 EXPIRES: 05/31/2015

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING,

SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER
- [x] C. RENEWAL OF LICENSE NUMBER 19-00019-W2NP

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Commander, Naval Air Systems Command
Infrastructure Safety & Business Operations (IBSO) AIR 7.10
Bldg 404, 22145 Arnold Circle
Patuxent River NAS, MD 20670-1571

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

U.S. Navy / NAVAIR facilities worldwide

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Michael R. Cronrath (Assistant Radiation Safety Officer)

BUSINESS TELEPHONE NUMBER	BUSINESS CELLULAR TELEPHONE NUMBER
(301) 757-2133	(540) 621-8245

BUSINESS EMAIL ADDRESS
michael.cronrath@navy.mil

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
   a. Element and mass number; b. chemical and/or physical form; and c. maiximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (Fees required only for new applications, with few exceptions*) *(See 10 CFR 170 and Section 170.31)* FEE CATEGORY _____ AMOUNT ENCLOSED $ _____

13. CERTIFICATION. *(Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.*

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35 , 36, 37, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.
WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A C RIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Gary M. Kurtz, NAVAIR Assistant Commander Corporate Operations & Total Force / AIR 7.0	Gary Kurtz	1/8/15

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED $	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

Item 5: Radioactive Material

a. Element and Mass Number: Americium-241 (Am-241)

b. Chemical and/or Physical Forms:

Laser Target Designator/Ranger Series **LANTIRN**: Two Am241 sealed sources, QSA Inc., Model AMM foil sources, registry of Radioactive Sealed Sources and Devices Safety Evaluation (SSDR) Number FL-1116-D-101-S

Laser Target Designator/Ranger Series **TARGET SIGHT SYSTEM (TSS)(AN/AAQ-30)**: Two Am241 sealed sources, QSA Inc., Model AMM foil sources, registry of Radioactive Sealed Sources and Devices Safety Evaluation (SSDR) Number FL-1116-D-101-S

Laser Target Designator/Ranger Series **NITEHAWK (AN/AAS-38A, COMMON U.S. NAVY NAME – Targeting Forward Looking Infrared - TFLIR)**: Two Am241 sealed sources, QSA Inc., Model AMM foil sources, registry of Radioactive Sealed Sources and Devices Safety Evaluation (SSDR) Number FL-1116-D-101-S

Laser Target Designator/Ranger Series **SNIPER/ATP/PANTERA**: Two Am241 sealed sources, QSA Inc., Model AMM.1001H foil sources or the Model AMM, registry of Radioactive Sealed Sources and Devices Safety Evaluation (SSDR) Number FL-1116-D-101-S

Laser Target Designator/Ranger Series **ELECTRO OPTICAL TARGETING SENSOR (EOTS)**: Sealed sources (AEA Technologies, QSA Inc. Model AMM.1001H, foil source, registry of Radioactive Sealed Sources and Devices Safety Evaluation (RRSSD) Number FL-1116-D-101-S)

AN/AAQ-28 LITENING: A foil source consists of a gold interface coating 0.001 mm thick, on a silver backing 0.15mm-0.25mm. The active matrix is americium oxide in gold, 0.001 mm in thickness. A cold inactive cover layer of gold or palladium 0.002-0.004 mm in thickness is rolled over the active layer to completely seal the source. The source is constructed using the technology of powder metallurgy and rolling.

c. Maximum Amount that will be possessed at any one time: Twenty four (24) EOTS devices with up to 11 micro curies each (two 5+/-10% microcurie sources per device); three (3) TSS AN/AAQ-30 devices with up to 8.8 microcurie each (two 4.0+/-10% microcurie sources per device); two (2) LITENING AN/AAQ-28 devices with up to 9.9 microcurie each (two 4.5+/-10% microcurie sources per device); four (4) LANTIRN devices with up to 8.8 microcurie each (two 4.0+/-10% sources per device); four (4) NITEHAWK, AN/AAS-38A/B, TFLIR devices with up to 9.9 microcurie each (two 4.5+/-10% sources per device); eight (8) SNIPER/ATP/PANTERA devices with up to 12.1 microcurie each (two 5.5+/-10% sources per device); a maximum amount of 481.8 microcuries.

Item 6: Purpose(s) for which licensed material will be used:

This permit is for research, testing, development, and training purposes. It will be used for flight testing to be conducted by Naval Air Systems Command (NAVAIR) organizations.

(**LATRIN, TSS, EOTS, SNIPER, TFLIR**) The sources are used for the removal of the static charge from the laser's Q switch crystal. The sources are either mounted onto the lid of the optical access cover assembly over the laser transceiver optical cavity, or directly mounted onto the Q-switch crystal mount in the optical cavity, depending on transceiver model.

Specific Additional System Information:

Electro Optical Targeting Sensor (EOTS): The F-35 Electro Optical Targeting Sensor (EOTS) is a built in targeting system providing visual and laser tracking and target designation for the F-35 Joint Strike Fighter for weapon deployment similar to the AA/AAQ-14 LANTIRN and Sniper ATP targeting pods previously used in DoD inventory.

The EOTS is licensed to:

Lockheed Martin Aeronautics Company
P.O. Box 788 Mail Zone 6876
Fort Worth, Texas 76101
NRC License 42-29239-01 Docket No. 030-37323

An O-ring is placed between the laser transceiver and the lid of the optical access cover and secured with screws forming an air tight seal. The cavity is pressurized with dry nitrogen or purged with filtered air. Once assembled there is no access to the foil sources except by the manufacturer. The foil sources are mounted in two source holders which are cylindrical in shape, constructed of stainless steel, threaded at one end and contain a recess into which the foil source is mounted at the other end. The foil source is held in place in the source holder by 5 equally spaced crimps and a protective screen.

AN/AAQ-28 LITENING: The laser transceiver with the radioactive source is located in the hermetically sealed Forward Section of the AN/AAQ-28 LITENING pod. The pod provides tactical aircraft with all weather, day and night targeting and laser designating/ranging capabilities. The two Am-241(Americium Oxide/Solid) sealed sources, 4.5 micro curies each, are used to stabilize laser temperature at the low end of the temperature range.

Additional Information:

1. Source Design and Construction

Distributor:
Isotope Products Laboratories
24937 Avenue Tibbitts

Valencia, CA 91335

NRC Sealed Source Registration Certificate # CA0406S234S

2. Manufacturer/Distributor:
   Northrop Grumman Corporation
   600 Hicks Rd
   Rolling Meadows, IL 60008

Radioactive Material License (State of Illinios), License # IL-02172-01

Laser Target Designator/Ranger Series **TARGET SIGHT SYSTEM (TSS)(AN/AAQ-30):** The laser assembly is mounted in and an integral part of the Target Sight System, AN/AAQ-30. The foil source is mounted in a cup shaped standard holder. Lips of the source holder are crimped over the edge of the foil so that the cut edges of the foil are not exposed. The source holder is cylindrical in shape, constructed of stainless steel, is threaded on one end, and contains a recess into which the foil source is mounted on the other end. The foil source is held in the source holder with 5 equally spaced crimps around the cylindrical recess. The recessed area into which the foil source is crimped is covered by a protective screen, which is secured with an adhesive, to provide physical protection for the foil. Once assembled, there is no access to the foil sources except by specifically authorized personnel.

Source Housing and Laser Transceiver

Manufacturer:
ELOP
ElectroOptics Industries Ltd
PO Box 1165
Rehovot, 76111, Israel

No certificate or license required by that country.

NITEHAWK AN/AAS-38A/B (TFLIR): The Laser Transceiver (LT), in which two radioactive source (Amersham model AMM 1001H) are located, is part of the AN/AAS-38A/B Forward Looking Infrared Laser Target Designator/Range (LTD/R) Pod. The pod provides tactical aircraft with all weather, day and night targeting and laser designating/ranging capabilities. The LTD/R has reached the end of its service life within the USN and is no longer being flown (TFLIR pod has been sun-downed for the USN). Current operations (under separate T permit 19-0019-T2NP) are limited to moving the LTD/R pods to servicing facilities where the LT is removed from the pod, storage, packaging, shipping and receiving operations. However, support for Foreign Military Sales (FMS) customers is in the form of TFLIR pod software anomaly investigations and associated flight testing (RTD&E) when necessary. This support is provided by NAWC China Lake, CA. A limited number of LT's are desired to be retained for Foreign Military Sales (FMS).

Additional information:

1. Source Design and Construction

Manufacturer/Distributer:

Amersham Corporation
2636 South Clearbrook Drive
Arlington Heights, IL 60005

2. Source Housing and Laser Transceiver

a. Original Manufacturer (Provided for reference)

Litton Laser Systems
2787 S. Orange Blossom Trail
Apopka, FL 32703

Radioactive Material License (State of Florida) # 2159-1,
As amended in its entirety, with reference to correspondence dated June 26, 2002, expiration date May 31, 2007

b. Original manufacturer acquired by:

Northrop Grumman Guidance and Electronics Company Inc. Div – Laser Systems
2787 S. Orange Blossom Trail
Apopka, FL 32703
POC: Mr. Frank Hutto, COMM: 321-354-3531; (email: franklin.hutto@ngc.com)

c. ELBIT Systems Electro-Optics ELOP
Advanced Technology Park
5 Hamada Street
Rehovot, ISR 76703

Item 7: Individual(s) Responsible for Radiation Safety Program and Their Training and Experience

Name: Elisabeth Holland, MSPH, CIH Command Radiation Safety Officer (RSO)

Education: Master of Science in Public Health, University of Utah, Salt Lake City, UT. Bachelors of Science, Biology, University of Mary Washington, Fredericksburg, VA.

Relevant Safety Courses: Radiation Safety Officer Course (S-4J-0016) - U.S. Navy Radiological Affairs Support Office, Yorktown, VA

Relevant Work Experience: Performed duty as the Command RSO for over 3 years. Assisted the RSO for Naval Air Systems Command for 6 months

Name: Michael R. Cronrath, MS, CSHO, Assistant Command Radiation Safety Officer (ARSO)

Education: Master of Science, Industrial Technology, Safety Management, Texas A&M Commerce, TX. Bachelor of Science, Professional Aeronautics, Embry Riddle Aeronautical University, Ft. Rucker, AL.

Relevant Safety Courses: Radiation Safety Officer Course (S-4J-0016) - U.S. Navy Radiological Affairs Support Office, Yorktown, VA

Relevant Work Experience: Assisted the RSO, Naval Air Systems Command for 9 months.

Item 8: Training for Individuals working in or Frequenting Restricted Areas

LANTIRN, TSS, NITEHAWK (TFLIR), SNIPER/ATP/PANTERA, EOTS:

Per RRSSD FL-1116-D-101-S (revision 10), these devices can be safely operated by persons not having training in radiation protection training, provided the optical access cover of the laser transceiver is not opened.

Maintenance is limited to laser module components which are exterior to the optical module. Disassembly, maintenance or repairs to the Laser Target Designator/Ranger series **optical module** will only be performed by the laser manufacturer or other persons specifically licensed and trained to provide such services. Therefore there are no special qualifications or radiation safety training required for persons who handle, transport, or maintains the laser target designator/ranger series, as the optical cover shall not be opened.

Per Lockheed Martin's RRSSD FL-1116-D-101-S (revision 10), no external radiation above background levels can be detected at the external surface [outside of the optical cavity of the laser transceiver].

Accordingly, no special radiation safety training is required for acceptance inspectors, surveillance inspectors, supply and maintenance personnel, users or transportation personnel.

AN/AAQ-28 LITENING:

No external radiation above background levels can be detected outside the Forward Section where the laser transmitter with the sources is installed. The Forward Section is sealed to protect the moisture-sensitive optical elements. The Forward Section may not be opened by any Navy personnel during the life cycle of this device under this permit.

Accordingly, no special radiation safety training is required for acceptance inspectors, surveillance inspectors, supply and maintenance personnel, users or transportation personnel.

Item 9: Facilities and Equipment

No radiation safety facilities or equipment are required.

Item 10: Radiation Safety Program

The radiation safety program is contained in (draft) NAVAIRINST 5104.1A (Enclosure 1). Handling and use of these laser transceivers are similar to the radiation safety program associated with a generally licensed item, in that:

1. No external radiation above background levels can be detected outside the housing of the optical cavity, within the laser transceiver, with the sources installed;

2. The safety analysis summary concludes that the sources would be expected to maintain their containment integrity for normal and accidental conditions of use (a military aircraft environment);

3. Under the provisions of this permit, the optical cavity within the laser tranceiver will not be opened by Navy personnel during the life cycle of the system. Any opening of the laser transceiver for servicing or repair will be accomplished only under the provisions of a NRC or Agreement State specific license authorizing those procedures.

The following sections comprise the radiation safety program:

SURVEY INSTRUMENTS AND CALIBRATION: None required.

DOSIMETRY: None required.

BIOASSAY: None required.

SURVEYS: None required.

HANDLING: There are no special safety handling requirements for any of the devices. Maintenance procedures prohibit opening the devices by Navy personnel. For defective or damaged laser transceivers, the procedures indicated below should be followed:

DAMAGED OR DEFECTIVE LASER TRANSCEIVER: If any of the laser modules are damaged, they will be double-sealed in plastic bags and packaged to prevent puncture of the plastic bags. Gloves will be worn while handling and placing the device in plastic bags. The device will be shipped to the appropriate procurement source by the controlling command. The procurement source will then forward the laser transceiver to the licensed repair facility that holds an NRC or Agreement State Specific license authorizing its servicing and repair.

INVENTORY: NAVAIR is responsible for the collection of the semi-annual inventory. The inventory will be collected by the Aircraft Controlling Custodian and provided to NAVAIR's RSO for reconsolidation and record keeping in accordance with inventory reporting within NAVAIRINST 5100.1 CH-1. NAVAIR RSO is responsible for reporting to NAVSEA DET RASO any lost or stolen items related to this permit by official correspondence.

STORAGE: No special measures are required.

LABELING: The source holder [laser transceiver] is labeled with the radiation trefoil symbol, serial number, part number, isotope, and activity level, in accordance with 10 CFR 20.1901 and 10 CFR 20.1904.

POSTING: Caution Signs and warnings in rooms and storage areas are not required (by exception) in accordance with 10 CFR 20.1903(c).

DISPOSAL: At the end of the service life or RTD&E activity of the laser transceiver, the items covered under this permit will be returned to the distributor or manufacturer or disposed of in accordance with the Low Level Radioactive Waste (LLRW) Program, established and maintained from the Naval Sea Systems Command Detachment, Radiological Affairs Support Office (NAVSEADET RASO). The NAVAIR RSO must be notified of transfers and disposal actions involving items governed by this permit.

RECORDS AND REPORTS: Records of inventory and transfer will be maintained indefinitely. Transfers to the item distributor or manufacturer, or to approved contractors under the Navy's Low Level Radioactive Waste Program (LLRW) are required.

Each Command shall, upon discovery of the event, report to NAVSEADET RASO and NAVAIR RSO any radiological incident listed under section 2.23 of NAVSEA S0420-AA-RAD-010 revision 1A, including but not limited to:

a. Theft or loss of radioactive material that produce ionizing radiation.
b. Leaking sealed radioactive source.
c. An unplanned event, i.e. fire, explosion, or mishap that damages the radiation sources or the laser transceiver containing the sources.
d. Unauthorized disposal of radioactive material.

Initial notification shall be made by telephone to NAVSEADET RASO (757) 887-4692 and to NAVAIR RSO at (301) 757-2133. If after normal work hours, the command shall contact the emergency number provided on NAVSEADET RASO's after-hours voice message.

In coordination with the Command, NAVAIR RSO will submit a follow up written report within 10 days. NAVSEADET RASO may require follow on update reports. The written report shall include (per 2.27.1/2, NAVSEA S0420-AA-RAD-010 revision 1A):

a. A description of the licensed material involved, including kind, quantity, and chemical and physical form.
b. A description of the circumstances under which the loss or theft occurred.
c. A statement of disposition, or probable disposition, of the licensed material involved.
d. Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas.
e. Actions that have been taken, or will be taken, to recover the material.
f. Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of the licensed material.
g. Signature of the Commander, CO, or OIC.

OTHER OCCURANCES: In the event of a significant abnormal occurrence not covered by the notification requirements above (such as temporary loss of custody), the command shall take appropriate measures to return the situation to normal. The command shall then notify NAVAIR Command RSO, at (301) 757-2133 to review the matter, and document the review. Documentation of the review shall include preparation of a narrative summary that identifies the cause of the occurrence and specifies corrective action taken to prevent recurrence. A copy of the narrative summary concerning abnormal occurrences shall be sent to NAVAIR Command Radiation Safety Officer (AIR 7.10.1 Bldg. 404, 22145 Arnold Circle, Patuxent River, MD 20670) within 30 days after the occurrence of the incident or the discovery thereof.

SHIPMENT: The Department of Transportation (DOT) regulates the shipment of radioactive materials, including the radioactive sources inside the laser transceiver. However, Title 49, Code of Federal Regulations, Part 173.424 exempts instruments and manufactured articles from many of the shipping requirements, provided the package meets design requirements of 49 CFR 173.410; the package is prepared for shipment in accordance with 49 CFR 173.422; and the other conditions (largely isotope/activity/dose levels) of 49 CFR 173.424 are maintained. Under normal conditions, the laser transceivers covered by this permit meet this exception. However, even if the package is excepted from labeling requirements, it must still be marked with the UN identification number marking requirement described in 49 CFR 173.422(a), as shown by column (4) of the Hazardous Material Table found in 49 CFR 172.101. Currently, a marking of **UN2911** should be placed on the shipping package for these permitted articles.

EMERGENCY / ACCIDENT PROCEDURES: Should a military aircraft with any of the permitted laser transceivers be involved in a crash or fire, the immediate concerns around the crash site are protection against installed armaments, fire, explosion, and associated toxic hazard. Fires hot enough to disrupt the foil matrix of the source would most likely cause the active foil to become trapped in the solidified mass of the aluminum housing of the optical module, thus resulting in a negligible hazard to the crash, rescue and salvage (C, R&S) team. If the resulting mass can be identified and isolated by the C, R&S team, it will be returned to the procurement source or other NRC or Agreement State licensed activity having a specific license covering disposal of the sources. The appropriate aircraft crash preparedness manuals need to include the following:

1) Notification that the laser transceiver contains radioactive Am-241 sources; and
2) Proper procedures and safety precautions for handling and disposal of the laser transceiver. These precautions include wearing gloves and a properly fitted protective mask while double sealing it in plastic bags, packaging it to prevent puncture of the plastic bags, and then shipping it to the licensed procurement source.

Item 11: Waste Management

Disposal action shall be in accordance with Low Level Radioactive Waste program procedures established by the Naval Sea Systems Command Detachment, Radiological Affairs Support Office (NAVSEADET RASO). The NAVAIR RSO must be notified of disposal actions involving items governed by this permit.