

## Carabajal, Eddie

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**From:** Clements, Lynn - DCSPIM  
**Sent:** Thursday, July 03, 1997 9:17 AM  
**To:** '5TH ARMY SAFETY'; 'BRAGG SAFETY'; 'CAMPBELL SAFETY'; 'CARSON SAFETY'; Davis, Tom - G3 AVN; 'DEVENS SAFETY'; 'DIX SAFETY'; 'DRUM SAFETY'; Hendricks, Ron - SAFETY; 'HOOD SAFETY'; 'IRWIN SAFETY'; 'LEWIS SAFETY'; 'POLK SAFETY'; 'RILEY SAFETY'; 'STEWART SAFETY'; 'USARC SAFETY'  
**Cc:** Hammonds, Rodney - DCSPIM  
**Subject:** FW: CAM AM25

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Please pass to installation radiation protection officers for file.  
Lynn Clements, FORSCOM Safety Office.

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**From:** JHAVENNE@ria-emh2.army.mil[SMTP:JHAVENNE@ria-emh2.army.mil]  
**Sent:** Friday, April 04, 1997 3:57 PM  
**To:** Clements, Lynn - DCSPIM; duke@monroe-emh10.army.mil; gibbsann@usarc-emh1.army.mil; bianchi@doim6.monmouth.army.mil; JOHN\_MANFRE@alexandria-emh1.army.mil  
**Subject:** CAM AM25

Attached is Amendment 25 to NRC License 12-00722-14 which extends the expiration date to 31 March 1998. Please pass this along to your subordinate installations

Jeff Havenner  
Health Physicist  
ACALA Safety Office

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Forward Header

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**Subject:** CAM AM25  
**Author:** DNGUYEN at ri1081w2  
**Date:** 4/4/97 2:15 PM



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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
501 WARHENVILLE ROAD  
L SLE, ILLINOIS 60632-4351

MAR 14 1997

Jeffrey Havenner  
Radiation Protection Officer  
Department of the Army  
U.S. Army Armament and Chemical  
Acquisition and Logistics Activity  
ATTN: AMSTA-AC-SF  
Rock Island, IL 61299-7630

Dear Mr. Havenner:

Enclosed is Amendment No. 25 to your NRC Material License No. 12-00722-14 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

Please note that in accordance with your request, we have extended your expiration date to March 31, 1998. In addition, we have removed License Condition 18, regarding maintaining records of decommissioning information because it is contained in NRC Regulations. Please note that you are still required to keep records in accordance with 10 CFR 30.35(g) of the regulations.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

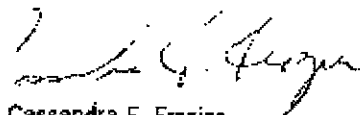
1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
  - a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
  - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.

4. Request and obtain a license amendment before you:
  - a. Change Radiation Safety Officers;
  - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
  - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
  - d. Change ownership of your organization.
5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,



Cassandra F. Frazier  
Nuclear Materials Licensing Branch

License No.: 12-00722-14  
Docket No.: 030-22274

Enclosure: Amendment No. 25

**MATERIALS LICENSE**

**Amendment No. 25**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 1B3 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<b>Licensee</b>		In accordance with letter dated <b>February 13, 1997</b> 3. License Number 12-00722-14 is amended in its entirety to read as follows:	
1. Department of the Army U.S. Army Armament and Chemical Acquisition and Logistics Activity 2. ATTN: AMSTA-AC-SF Rock Island, IL 61299-7630		4. Expiration Date <b>March 31, 1998</b>	
		5. Docket or Reference No. <b>030-22274</b>	
<b>6. Byproduct, Source, and/or Special Nuclear Material</b>	<b>7. Chemical and/or Physical Form</b>	<b>8. Maximum Amount that Licensee May Possess at Any One Time Under This License</b>	
<b>A. Nickel-63</b>	<b>A. Plated sources</b>	<b>A. Not to exceed 12 millicuries per source and 1000 curies total</b>	

**9. Authorized Use:**

- A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

**CONDITIONS**

- 10. Licensed material may be used at U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites of the licensee anywhere in the United States.
- 11. A. The Radiation Protection Officer for the activities authorized by this license is Jeffrey Havenner.  
 B. The Alternate Radiation Protection Officer for the activities authorized by this license is Gavin Ziegler or Elizabeth Peterson.
- 12. Licensed material shall be used by, or under the supervision of, John Mattila, Elizabeth Peterson, Jeff Havenner or Gavin Ziegler or any other individuals trained in accordance with application dated February 5, 1991.
- 13. Sealed sources containing licensed material shall not be opened.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

12-00722-14

Docket or Reference Number

030-22274

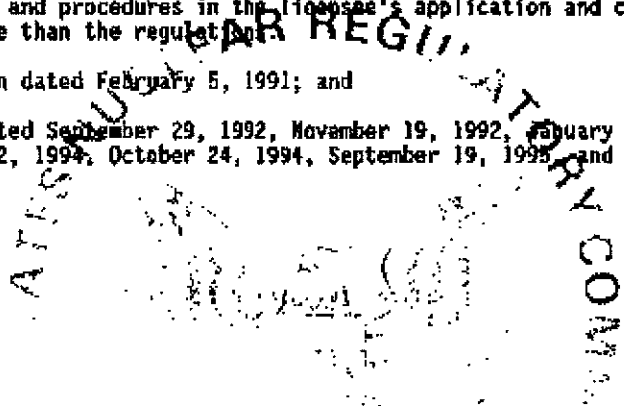
Amendment No. 25

14. A. (1) The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 12 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every twelve (12) months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.
16. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number	12-00722-14
Docket or Reference Number	030-22274
Amendment No. 25	

17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated February 5, 1991; and
  - B. Letters dated September 29, 1992, November 19, 1992, February 26, 1994, September 2, 1994, October 24, 1994, September 19, 1995, and February 13, 1997.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date

March 13, 1997

By

*Constance J. Geoghegan*  
Nuclear Materials Licensing Branch, Region III

SUMMARY OF REQUIREMENTS

1. ~~10mci Nickel 63~~ used in Chemical Agent Monitor.
2. License covers use by U.S. Army and Marine Corps; storage at Savanna Army Depot.
3. First buy of 5000 will involve no maintenance by U.S. Army. Maintenance performed by the contractor (Graseby). Army is planning to buy 30,000, eventually.
4. Annual wipe test must be performed at Direct Support level. Cloth or filter paper wipes will be used for the wipe test. Each wipe test must be screened with ANPDR 27 prior to sending the wipe test to AIRDC for analysis.
5. License does not specify specific radiation safety training to users or those performing wipe tests, but AMCCOM recommends a minimum of 8 hours radiation safety training. Warnings and instructions are given in the technical manuals. Training film has been made for DS wipe tests and SN tracking.
6. CAM and drift tube (cell) module are serial number tracked. Cell serial number is located on a plate inside the environmental cap. CAM serial number is located on outside of CAM unit. Transactions must be processed at each receipt, shipment, wipe test, transfer, loss, recover, inventory, etc. per AR 710-3.
7. Procurement contracts must state that wipe tests be performed by a lab independent of the contractor (referred to as QA clause E35). Contractor must also abide by serial number tracking.
8. Maintenance will be done by contractor for two years. License amendment will be needed prior to DS maintenance being performed by Army. Depot level maintenance authorized at Anniston Army Depot only and at a special repair facility in Saudi Arabia.
9. Wipe test must be performed every year. If item is transferred to another user (UIC transfer) then a wipe test must be performed within 6 months. AMCCOM will notify the reporting activity when the wipe test is due. There is no wipe test label used on the CAM, so the owners will depend on their own records as well as the notification from AMCCOM.

NRC License Inspection Checklist  
BML 12-00722-14 Chemical Agent Monitor

User/Direct Support maintenance/storage Installations:

1. Is there a serialization officer assigned per AR 710-3?
2. Are serialization records kept IAW AR 710-3?
3. Are shipment transactions kept for at least two years?
4. Have all cell modules been wipe tested within the past year?
5. Are procedures in place so that detectors will be wipe tested when due, even if not notified by AMCCOM?
6. Are wipe tests performed only by radiation safety trained personnel?
7. Is Direct Support maintenance performed only by radiation safety trained personnel (8 hour minimum rad safety training)?
8. Do maintenance personnel use portable alpha detection equipment or take wipe tests of maintenance areas?
9. Are radioactive sources secured against unauthorized use?
10. Are procedures in place to notify license RSO when physical inventories come up short?
11. Are labels removed from empty boxes? Pay close attention to use and storage labels on inside packaging.

Bulk storage depots (Anniston Army Depot, Savanna Army Depot Activity):

12. Have RPO and Alternate been formally appointed?
13. Are storage areas monitored with portable equipment monthly?
14. Are storage areas wipe tested quarterly?
15. Are "Caution - Radioactive Material" signs posted?
16. Are wipe tests of storage areas analyzed by liquid scintillation counter?
17. Is fire department kept apprised of radioactive material on site?
18. Are drift tube serial numbers verified prior to disposal as radioactive waste? This step must be in the depot SOP.



NUCLEAR REGULATORY COMMISSION LICENSE BML 12-00722-14

EXPIRE DATE	ISSUE DATE	AM	REASON FOR AMENDMENT
05/31/90	05/03/85	OR	12mCi nickel 63 used in CAM. 800 Ci total. Annual wipe test, tracking and inventory rqmnts.
/ /	07/31/85	01	Shipping instructions added; use by MC added.
/ /	11/24/86	02	Removed requirement for wipe test label. To AMC 5Jun86.
/ /	/ /		Remove requirement to use PDR27 to screen wipes. To AMC 16Jan87. AMC returned without comment 8Apr87.
/ /	07/01/87	05	Remove requirement for metal lockers by ltr 31 Mar 87. Added SVADA for bulk storage by letter 27 Apr 87.
/ /	/ /		Extend wipe test to 3 years. To AMC 8 Apr 87. Returned for more info. AMCCOM replied direct to NRC 22 Jul 87. More info to AMC 5 Nov and 10 Nov 87. Follow up letter to AMC 7 Mar 88. AMC sent to NRC 18 Mar 88.
/ /	12/31/87	06	Allow removal of nozzle assembly by users. Letter to AMC 30 Sept 87. To NRC 5 Oct 87.
/ /	11/10/88	07	Change alternate RSO to Nelson. To AMC 19 Sep 88.
/ /	06/26/89	08	Allow depot repair at ANAD. To AMC 17 Mar 89. Unknown when AMC sent to NRC. NRC called 18 May89 for more information. Forwarded to NRC 15 Jun89.
/ /	12/19/89	09	Add TBAD for storage. To AMC 3 Nov 89.
/ /	03/06/90	10	13Feb90 letter to AMC requesting one year extension.
/ /	/ /		Decommissioning letter to NRC 21 Jun 90.
/ /	06/26/90	11	DLA added per letter 22 Jun 90.

August 24, 1995

NUCLEAR REGULATORY COMMISSION LICENSE BML 12-00722-14

EXPIRE DATE	ISSUE DATE	AM	REASON FOR AMENDMENT
/ /	12/31/90	12	ltr to AMC 5 Nov 90 to allow maintenance for ODS. Pending RPO change to Crooks and LaFrenz. To AMC 7 Nov90. Pending renewal in its entirety. Includes DS maintenance. To AMC 5 Feb 91. AMC returned for SG request to wipe test prior to maintenance. Returned to AMC 03 Sept 91. To NRC 24 Sep 91.
09/30/91	03/28/91	13	Extension based on DLA letter 6 Mar 91.
05/31/92	05/28/91	14	AMC requested extension to 31 May 92 per AMC letter 26 Apr 91.
/ /	11/01/91		Renewal timely filed.
/ /	01/03/92	15	Marine Corps labs to perform analysis of wipetests. MCLBs to perform depot level maintenance. AMC to NRC 19 December 1991.
03/31/97	02/28/92	16	License renewed in entirety per application dated 5 Feb 91. Application included depot repair at Anniston Army Depot, and DS repair by trained direct support personnel.
03/31/97	05/14/92	17	Add Joyce Kuykendahl as Alternate RPO.
03/31/97	06/11/92	18	
03/31/97	11/23/92	19	
03/31/97	12/23/92	20	Remove Kathryn LaFrenz as RPO.
03/31/97	02/18/94	21	Removed Jeff Havenner and Joyce Kuykendahl as Alternate RPO.
04/30/95	10/04/94	22	Reorganizational name change from U.S. Army Armament Munitions and Chemical Command to U.S. Army Armament and Chemical Acquisition and Logistics Activity.

August 24, 1995

**MATERIALS LICENSE**

Amendment No. 23

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. Department of the Army  
U.S. Army Armament and Chemical  
Acquisition and Logistics Activity
2. ATTN: AMSTA-AC-SF  
Rock Island, IL 61299-7630

In accordance with letter dated  
October 24, 1994  
3. License number 12-00722-14 is amended in  
its entirety to read as follows:

4. Expiration date March 31, 1997

5. Docket or  
Reference No. 030-22274

6. Byproduct, source, and/or  
special nuclear material

7. Chemical and/or physical  
form

8. Maximum amount that licensee  
may possess at any one time  
under this license

A. Nickel-63

A. Plated sources

A. Not to exceed 12  
millicuries per  
source and 1000  
curies total

9. Authorized Use:

A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

CONDITIONS

10. Licensed material may be used at U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites of the licensee anywhere in the United States.
11. A. The Radiation Protection Officer for the activities authorized by this license is Jeffrey Havenner.  
B. The Alternate Radiation Protection Officer for the activities authorized by this license is Gavin Ziegler or Elizabeth Peterson.
12. Licensed material shall be used by, or under the supervision of, John Mattila, Elizabeth Peterson, Jeff Havenner or Gavin Ziegler or any other individuals trained in accordance with application dated February 5, 1991.
13. Sealed sources containing licensed material shall not be opened.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 23

14. A. (1) The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 12 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every twelve (12) months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.
16. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.

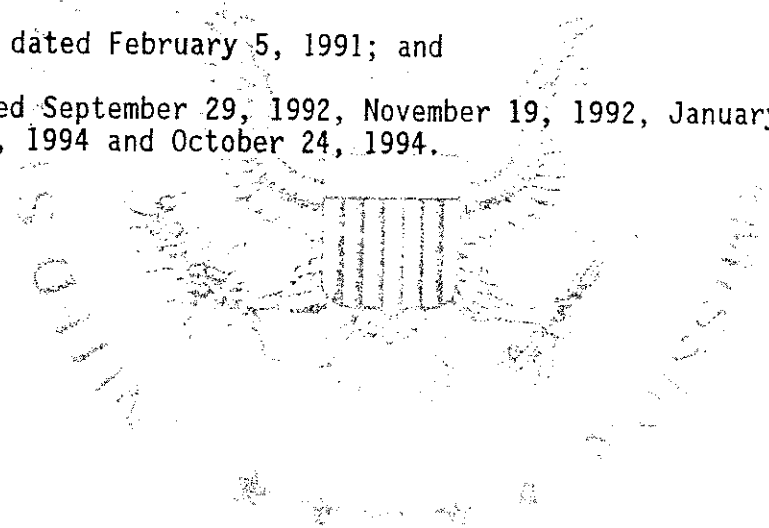
**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number  
12-00722-14

Docket or Reference number  
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Amendment No. 23

17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. The licensee shall maintain records of information important to safe and effective decommissioning at U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated February 5, 1991; and
  - B. Letters dated September 29, 1992, November 19, 1992, January 26, 1994, September 2, 1994 and October 24, 1994.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date 11/15/94

By James Mullauer  
Materials Licensing Section, Region III



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

NOV 17 1994

Department of the Army  
U.S. Army Armament and  
Chemical Acquisition  
and Logistics Activity  
ATTN: John Mattila, Chief  
Safety Officer  
Rock Island, IL 61299-7630

Dear Mr. Mattila:

Enclosed is Amendment No. 23 to your NRC Material License No. 12-00722-14 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
  - a. When an authorized user, Radiation Safety Officer, or Teletherapy Physicist permanently discontinues performance of duties under the license or has a name change; or
  - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).

NOV 17 1994

3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
  - a. When you decide to terminate all activities involving materials authorized under the license; or
  - b. If you decide not to complete the facility, acquire equipment, or possess and use authorized material.
4. Request and obtain a license amendment before you:
  - a. Change Radiation Safety Officers;
  - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
  - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
  - d. Change ownership of your organization.
5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.


In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C. Since

NOV 17 1994

serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,

  
James R. Mullauer, M.H.S.  
Health Physicist  
Nuclear Materials Licensing Section

License No.: 12-00722-14  
Docket No.: 030-22274

Enclosure: Amendment No. 23



MATERIALS LICENSE

Amendment No. 22

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with letter dated September 2, 1994	
1. Department of the Army U.S. Army Armament and Chemical Acquisition and Logistics Activity		3. License number 12-00722-14 is amended in its entirety to read as follows:	
2. ATTN: AMSTA-AC-SF Rock Island, IL 61299-7630		4. Expiration date March 31, 1997	
		5. Docket or Reference No. 030-22274	
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A. Nickel-63	A. Plated sources	A. Not to exceed 12 millicuries per source and 1000 curies total	

9. Authorized Use:

- A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

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- 10. Licensed material may be used at U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites of the licensee anywhere in the United States.
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12-00722-14

Docket or Reference number

030-22274

Amendment No. 22

14. A. (1) The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 12 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every twelve (12) months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 22

16. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.
17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. The licensee shall maintain records of information important to safe and effective decommissioning at U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated February 5, 1991; and
  - B. Letters dated September 29, 1992, November 19, 1992, January 26, 1994, and September 2, 1994.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date OCT 04 1994

By Loren J. Hunter  
Materials Licensing Section, Region III

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <ol style="list-style-type: none"> <li>Commander U.S. Army Armament, Munitions, and Chemical Cmd.</li> <li>ATTN: AMSMC-SFS Rock Island, IL 61299-6000</li> </ol>	<p>In accordance with letter dated January 26, 1994</p> <ol style="list-style-type: none"> <li>License number 12-00722-14 is amended in its entirety to read as follows:</li> <li>Expiration date March 31, 1997</li> <li>Docket or Reference No. 030-22274</li> </ol>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Nickel-63</p>	<p>7. Chemical and/or physical form</p> <p>A. Plated sources</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 12 millicuries per source and 1000 curies total</p>
--	--	---

9. Authorized Use:

A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

CONDITIONS

- Licensed material may be used at U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites of the licensee anywhere in the United States.
- The Radiation Protection Officer for the activities authorized by this license is David P. Skogman.
  - The Alternate Radiation Protection Officer for the activities authorized by this license is Gavin Ziegler.
- Licensed material shall be used by, or under the supervision of, David P. Skogman, Jeff Havenner or Gavin Ziegler or any other individuals trained in accordance with application dated February 5, 1991.
- Sealed sources containing licensed material shall not be opened.

COPY 5

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number  
12-00722-14

Docket or Reference number  
030-22274

Amendment No. 21

14. A. (1) The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 12 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 801 Warrenville Road, Lisle, IL 60532-4351, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every twelve (12) months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.

COPY

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number  
12-00722-14

Docket or Reference number  
030-22274

Amendment No. 21

16. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.
17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. The licensee shall maintain records of information important to safe and effective decommissioning at U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated February 5, 1991; and
  - B. Letters dated September 29, 1992, November 19, 1992 and January 26, 1994.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date FEB 18 1994

By Loren J. Harter  
Materials Licensing Section, Region III

COPY

MATERIALS LICENSE

Amendment No. 16

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. Commander U.S. Army Armament, Munitions and Chemical Cmd.</p> <p>2. ATTN: AMSMC-SFS Rock Island, IL 61299-6000</p>		<p>In accordance with application dated February 5, 1991</p> <p>3. License number 12-00722-14 is renewed in its entirety to read as follows:</p>	
		4. Expiration date	March 31, 1997
		5. Docket or Reference No	030-22274
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	
A. Nickel-63	A. Plated sources	A. Not to exceed 12 millicuries per source and 1000 curies total	

9. Authorized Use

- A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

CONDITIONS

- 10. Licensed material may be used at U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites of the licensee anywhere in the United States.
- 11. The Radiation Protection Officer for the activities authorized by this license is Katheryn LaFrenz.
- 12. Licensed material shall be used by, or under the supervision of, David P. Scogman, Katheryn LaFrenz, Jeff Havenner or Gavin Ziegler or any other individuals trained in accordance with application dated February 5, 1991.
- 13. Sealed sources containing licensed material shall not be opened.
- 14. A. (1) The source(s) specified in Item(s) 7.A. shall be tested for leakage and/or contamination at intervals not to exceed 6 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.

COPY

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 16

14. (Continued)

(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

- 15. The licensee shall conduct a physical inventory every six (6) months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.
- 16. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.
- 17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
- 18. The licensee shall maintain records of information important to safe and effective decommissioning at U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

COPY



MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number	12-00722-14
Docket or Reference number	030-22274
Amendment No. 16	

19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated February 5, 1991.



For the U.S. Nuclear Regulatory Commission

Date: 3/28/92

By [Signature]  
Materials Licensing Section, Region III

COPY

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 15

Department of the Army  
H.Q.U.S. Army Armament Munitions  
and Chemical Command  
Rock Island, IL 61299

In accordance with letter dated December 18, 1991, License Number 12-00722-14 is amended as follows:

Condition 16. is amended to read:

Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated November 29, 1984;
- B. Letters dated February 5, 1985, March 21, 1988, June 5, 1986, March 16, 1987, March 31, 1987, April 27, 1987, October 5, 1987, September 30, 1987, September 19, 1988, November 16, 1989, June 22, 1990, November 5, 1990, and December 18, 1991 (with attachments);
- c. Memorandum received May 11, 1989 (with attachments); and
- d. Memorandum dated June 15, 1983, with attached maintenance procedures manual and training course outline.

For the U.S. Nuclear Regulatory Commission

Date:

*January 3, 1992*

By

*Peter J. Kennedy*  
Materials Licensing Section, Region II

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

12-00722-14

Docket or Reference number

030-22274

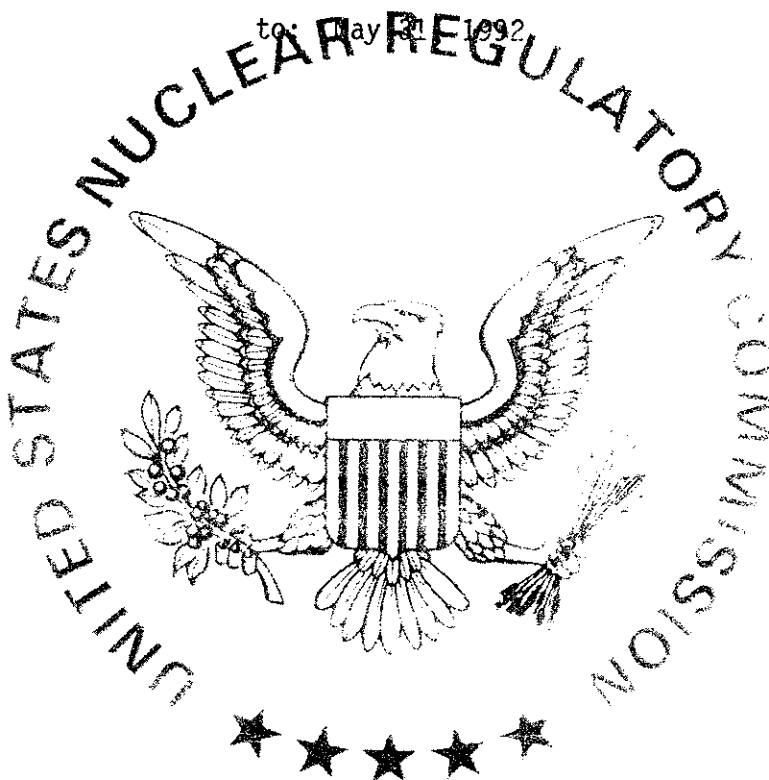
Amendment No. 14

Department of the Army  
H.Q.U.S. Army Armament Munitions  
and Chemical Command  
Rock Island, Illinois 61299

In accordance with letter dated April 26, 1991, License Number 12-00722-14 is amended as follows:

Item 4. Expiration date is changed from: May 31, 1991

to: May 31, 1992



For the U.S. Nuclear Regulatory Commission

Date:

May 15, 1991

By

*Pete J. Lee*  
Materials Licensing Section, Region III

COPY

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

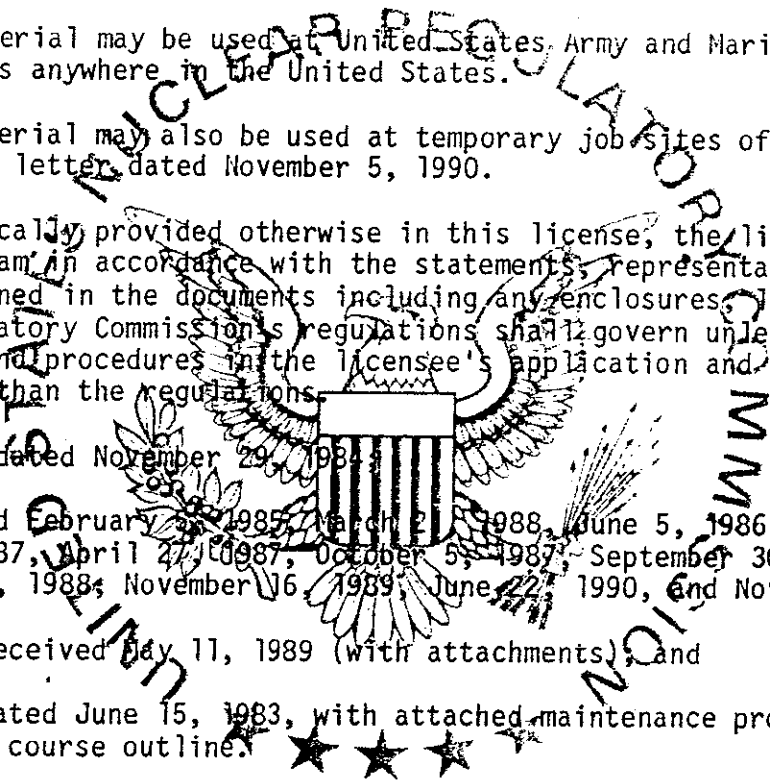
License number	12-00722-14
Docket or Reference number	030-22274
Amendment No.	12

Department of the Army  
H.Q. U.S. Army Armament Munitions  
and Chemical Command  
Rock Island, IL 61299

In accordance with letter dated November 5, 1990, License Number 12-00722-14 is amended as follows:

Conditions 10. and 16. are amended to read:

10. A. Licensed material may be used at United States Army and Marine Corps installations anywhere in the United States.
- B. Licensed material may also be used at temporary job sites of the licensee as described in letter dated November 5, 1990.
16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated November 29, 1984;
  - B. Letters dated February 2, 1985; March 2, 1988; June 5, 1986; March 16, 1987; March 31, 1987; April 27, 1987; October 5, 1987; September 30, 1987; September 19, 1988; November 16, 1989; June 22, 1990; and November 5, 1990; and
  - C. Memorandum received May 11, 1989 (with attachments); and
  - D. Memorandum dated June 15, 1983, with attached maintenance procedures manual and training course outline. ★ ★ ★ ★



For the U.S. Nuclear Regulatory Commission

Date: December 31, 1990

By Deborah A. Pokuna  
Materials Licensing Section, Division III

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 10

Department of the Army  
H.Q. U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated February 13, 1990, License Number 12-00722-14 is amended as follows:

Item 4. (Expiration Date) is amended to read May 31, 1991.

For the U.S. Nuclear Regulatory Commission

Date: March 06, 1990

By Loren C. Hunter  
Materials Licensing Section, Region III

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number	12-00722-14
Docket or Reference number	030-22274
Amendment No. 09	

Department of the Army  
H.Q. U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

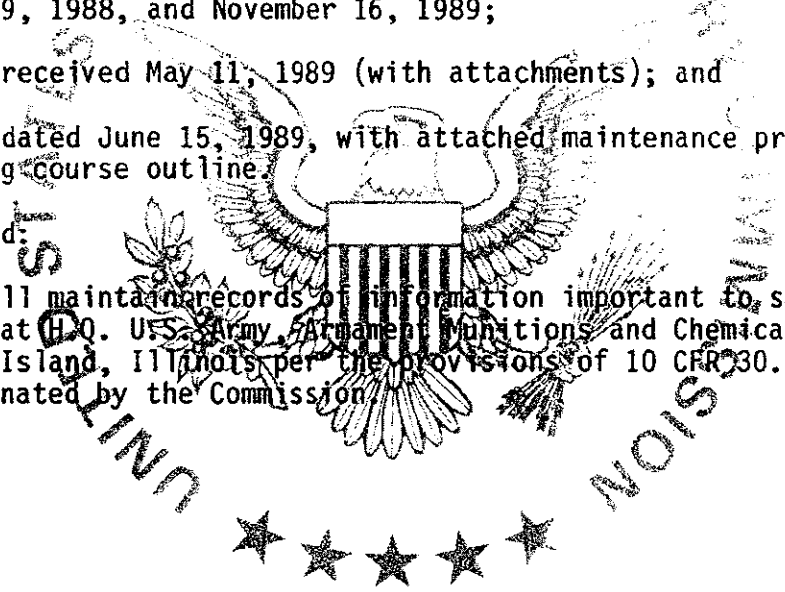
In accordance with letter dated November 16, 1989, License No. 12-00722-14 is amended as follows:

Condition 16. is amended to read:

- 16. A. Application dated November 29, 1984;
- B. Letters dated February 5, 1985, March 21, 1988, June 5, 1986, March 16, 1987, March 31, 1987, April 27, 1987, October 5, 1987, September 30, 1987, September 19, 1988, and November 16, 1989;
- C. Memorandum received May 11, 1989 (with attachments); and
- D. Memorandum dated June 15, 1989, with attached maintenance procedures manual and training course outline.

Condition 18. is added:

- 18. The licensee shall maintain records of information important to safe and effective decommissioning at H.Q. U.S. Army Armament Munitions and Chemical Command, ATTN: AMSMC-SFS, Rock Island, Illinois per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.



For the U.S. Nuclear Regulatory Commission

COPY

Date: December 19, 1989

By: [Signature]  
Materials Licensing Section, Region III

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 08

Department of the Army  
H.Q. U. S. Army, Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with memorandum received May 11, 1989, License Number 12-00722-14 is amended as follows:

Conditions 12. and 16. are amended to read:

- 12. Licensed material shall be used by or under the supervision of Byron Morris, Katheryn LaFrenz, David P. Skogman or David Nelson or any other United States Army of Marine Corps, military or civilian personnel trained in accordance with statements made in application dated November 29, 1984 and letters dated February 5, 1985, March 21, 1985, and memorandum dated June 15, 1989.
- 16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated November 29, 1984;
  - B. Letters dated February 5, 1985, March 21, 1985, June 5, 1986, March 16, 1987, March 31, 1987, April 27, 1987, October 5, 1987, September 30, 1987 and September 19, 1988;
  - C. Memorandum received May 11, 1989 (with attachments); and
  - D. Memorandum dated June 15, 1989 with attached maintenance procedures manual and training course outline.

Condition 17. is added:

- 17. Maintenance operations on the Chemical Agent Monitor will not include or involve any repair or contact with the nickel-63 plated source.

For the U.S. Nuclear Regulatory Commission

Date: June 26, 1989

Original Signed  
By John R. Madera  
Materials Licensing Section, Region III

5

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

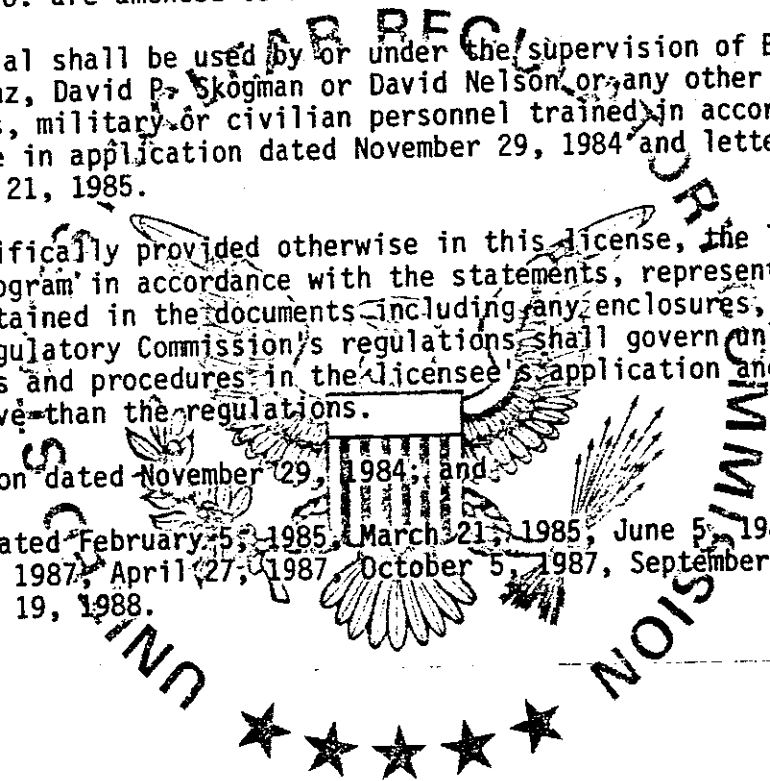
Amendment No. 07

Department of the Army  
H.Q. U.S. Army, Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated September 19, 1988, License Number 12-00722-14 is amended as follows:

Conditions 12. and 16. are amended to read:

- 12. Licensed material shall be used by or under the supervision of Byron Morris, Katheryn LaFrenz, David P. Skogman or David Nelson, or any other United States Army of Marine Corps, military or civilian personnel trained in accordance with statements made in application dated November 29, 1984 and letters dated February 5, 1985 and March 21, 1985.
- 16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
  - A. Application dated November 29, 1984; and
  - B. Letters dated February 5, 1985, March 21, 1985, June 5, 1986, March 16, 1987, March 31, 1987, April 27, 1987, October 5, 1987, September 30, 1987 and September 19, 1988.



For the U.S. Nuclear Regulatory Commission

Date:

November 21, 1988

By

[Signature]  
Materials Licensing Section, Region III



**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number 12-00722-14  
Docket or Reference number 030-22274  
Amendment No. 06

Department of the Army  
H.Q. U.S. Army, Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated October 5, 1987, License Number 12-00722-14, is amended to read as follows:

Condition 16. is amended to read:

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated November 29, 1984; and
  - B. Letters dated February 5, 1985, March 21, 1985, June 5, 1986, March 16, 1987, March 31, 1987, April 27, 1987, October 5, 1987 and September 30, 1987.

For the U.S. Nuclear Regulatory Commission

Date: December 17, 1987

Original Signed  
By George M. McCann

COPY

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

Amendment No. 05

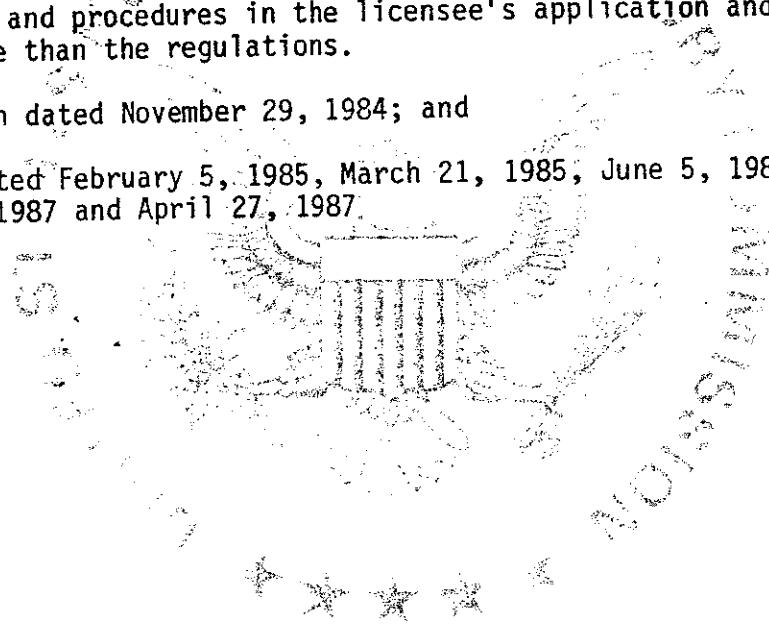
Department of the Army  
HQ, U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letters dated March 31, 1987 and April 27, 1987, License Number 12-00722-14 is amended as follows:

Condition 16. is amended to read:

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated November 29, 1984; and
- B. Letters dated February 5, 1985, March 21, 1985, June 5, 1986, March 16, 1987, March 31, 1987 and April 27, 1987.



For the U.S. Nuclear Regulatory Commission

Date July 1, 1987

By

J. R. Mad

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	12-00722-14
Docket or Reference number	030-22274
Amendment No. 04	

Department of the Army  
HQ, U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated March 16, 1987, License Number 12-00722-14 is amended as follows:

Condition 16. is amended to read:

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated November 29, 1984; and
- B. Letters dated February 5, 1985, March 21, 1985, June 5, 1986 and March 16, 1987.

For the U.S. Nuclear Regulatory Commission

Date June 22, 1987

By *Robert A. Frazier*  
Materials Licensing Section, Region III

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number 12-00722-14

Docket or Reference number 030-22274

Amendment No. 03

Department of the Army  
HQ, U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated January 9, 1987, License Number 12-00722-14 is amended as follows:

Condition 12. is amended to read:

12. Licensed material shall be used by or under the supervision of Byron Morris, Katheryn LaFrenz, David P. Skogman, or Ralph A. Cardenuto or any other United States Army of Marine Corps, military or civilian personnel trained in accordance with statements made in application dated November 29, 1984 and letters dated February 5, 1985 and March 21, 1985.

For the U.S. Nuclear Regulatory Commission

Date March 3, 1987

By George M. M. Conn  
Materials Licensing Section, Region III

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number 12-00722-14

Docket or Reference number 030-22274

Amendment No. 02

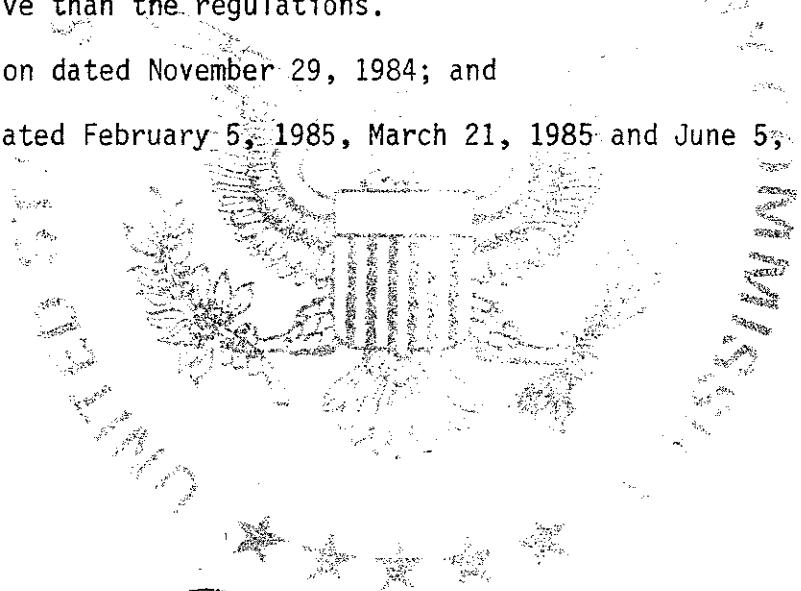
Department of the Army  
H.Q. U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated June 5, 1986, License Number 12-00722-14 is amended as follows:

Conditions 16. is amended to read:

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated November 29, 1984; and
- B. Letters dated February 5, 1985, March 21, 1985 and June 5, 1986.



For the U.S. Nuclear Regulatory Commission

Date 11 | 24 | 86

By William J. Odo  
Materials Licensing Section, Region III

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	12-00722-14
Docket or Reference number	030-22274
Amendment No. 01	

Department of the Army  
H.Q. U.S. Army Armament Munitions  
and Chemical Command  
ATTN: AMSMC-SFS  
Rock Island, IL 61299

In accordance with letter dated May 16, 1985, License Number 12-00722-14 is amended as follows:

Conditions 10., 12. and 14. are amended to read:

10. Licensed material shall be used only at United States Army and Marine Corps installations anywhere in the United States.
12. Licensed material shall be used by, or under the supervision of, Elizabeth A. Peterson, David P. Skogman, Byron Morris, or any other United States Army or Marine Corps military or civilian personnel trained in accordance with statements made in application dated November 29, 1984 and letters dated February 5, 1985 and March 21, 1985.
14. A. (1) Each sealed source shall be tested for leakage and/or contamination at intervals not to exceed one year. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.  
(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.  
(3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number	12-00722-14
Docket or Reference number	030-22274
Amendment No. 01	

- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five (5) days of the test with the U. S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, describing the equipment involved, the test results, and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the United States Army or Marine Corps military or civilian personnel in accordance with procedures described in the licensee's application dated November 29, 1984 and letters dated February 5, 1985 and March 21, 1985 or by other persons specifically authorized by the Commission or an Agreement State to perform such services.

Condition 17. is added:

- 17. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."

For the U.S. Nuclear Regulatory Commission

Date

JUL 31 1985

By

*B. J. Holt*

Materials Licensing Section, Region III

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Department of the Army H.Q. U.S. Army Armament Munitions and Chemical Cmd.		3. License number 12-00722-14
2. ATTN: AMSMC-SFS Rock Island, IL 61299		4. Expiration date May 31, 1990
		5. Docket or Reference No. 030-22274
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Nickel-63	A. Plated sources	A. Not to exceed 12 millicuries per source and 800 curies total

9. Authorized Use

- A. Ionization source in a Chemical Agent Monitor aerosol/vapor detector.

CONDITIONS

10. Licensed material may be used at H.Q. U.S. Army Armament Munitions & Chemical Cmd., Rock Island, Illinois and at temporary job sites of the licensee anywhere in the United States.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by, or under the supervision of, Elizabeth A. Peterson, David P. Skogman or Byron Morris.
13. Sealed sources containing licensed material shall not be opened.
14. A. (1) Each sealed source shall be tested for leakage and/or contamination at intervals not to exceed one year. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.  
  
(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or



**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

12-00722-14

Docket or Reference number

030-22274

- (3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five (5) days of the test with the U. S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, describing the equipment involved, the test results, and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the U.S. Army Armament Munitions & Chemical Command or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every 12 months to account for all plated sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, manufacturer's name and model numbers, location of plated sources and the date of the inventory.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated November 29, 1984; and letters dated February 5, 1985 and March 21, 1985. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

For the U.S. Nuclear Regulatory Commission

Date

MAY 8 - 1985

By

*Bruce J. Mallett*

Materials Licensing Section, Region III



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

JUL 02 1990

Commander  
U.S. Army Material Command  
ATTN: AMCSF-P  
Ms. Patricia Elker, Chief  
Health Physics  
5001 Eisenhower Avenue  
Alexandria, VA 22333-0001

Gentlemen:

Enclosed are Amendment Nos. 17, 17, 19, 13, 08, 16, 11, 08, and 18 to your NRC Licenses No. SUC-1380, 12-00722-04, 12-00722-06, 12-00722-07, 12-00722-09, 12-00722-13, 12-00722-14, 21-01222-05 and 24-12705-01, respectively.

From the June 5, 1990, meeting involving representatives of the Department of the Army (DOA), the Defense Logistics Agency (DLA), and the Nuclear Regulatory Commission's (NRC's) Headquarters (HQ) staffs, we recognize the high level of Department of Defense (DoD) management interest in the transfer of certain DOA depots to DLA control and DoD's accelerated schedule for these transfers. We also understand that it was only within the last few weeks that DoD, DLA, and DOA personnel planning these transfers recognized that these DOA/DLA transfers also involved NRC-licensed activities and that it was necessary to get NRC's prior written permission before the transfer could occur. Accordingly, we have issued the enclosed amendment(s) as an interim measure to meet DOA and DLA needs as well as the requirements of NRC's regulations. Please note that additional license amendments will be needed before changes are made in named personnel, operating procedures, or any other matter discussed in the documents incorporated by reference in each license.

However, as noted in the June 5 meeting and in subsequent telephone conversations between NRC HQ personnel and representatives of DLA and DOA, the long-term solution is for DLA to obtain its own license(s) as quickly as possible, but not later than the expiration date on each affected license. Until DLA obtains its own licenses, DOA remains the licensee responsible for ensuring compliance with NRC regulations and all terms and conditions of its licenses.

We would appreciate receiving a schedule of DLA's submission of license applications. In the schedule, please provide the following information for each license affected by the transfer of DOA activities to DLA:

1. License number;
2. Name and address of DOA organization currently named in Items 1 and 2 of the license;

REC'D 10 JUL 1990

3. Expiration date;
4. Date by which DLA will submit application for license in its name;
5. NRC regional office responsible for licensing.

We would appreciate receiving your response to this letter by October 31, 1990. Please send copies of your response to the attention of Dr. John Glenn at NRC HQ and to the materials licensing sections in each affected NRC Regional Office.

Please review the enclosed document carefully and be sure that you understand all conditions. You must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address.
5. Request and obtain appropriate amendment if you plan to change ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. Any amendment request should be accompanied by the appropriate fee specified in 10 CFR Part 170.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material prior to your expiration date.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations in your license application will result in enforcement action against you in accordance with the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

If you have any questions or require clarification of any of the above stated information, contact us at (708) 790-5625.

Sincerely,



William J. Adam, Ph.D.  
Materials Licensing Section

Enclosures:

1. Amendment No. 17, SUC-1380
2. Amendment No. 17, 12-00722-04
3. Amendment No. 19, 12-00722-06
4. Amendment No. 13, 12-00722-07
5. Amendment No. 08, 12-00722-09
6. Amendment No. 16, 12-00722-13
7. Amendment No. 11, 12-00722-14
8. Amendment No. 08, 21-01222-05
9. Amendment No. 18, 24-12705-01

cc w/enclosures:  
J. Glenn, NMSS

NUCLEAR REGULATORY COMMISSION LICENSE

12-00722-14

FOR THE CHEMICAL AGENT MONITOR

EXPIRATION DATE: MARCH 13, 1997

POINT OF CONTACT:

WRITE: COMMANDER, U.S. ARMY ARMAMENT, MUNITIONS AND  
CHEMICAL COMMAND, ATTN: AMSMC-SFS, ROCK ISLAND IL  
61299-6000

TELEPHONE: MRS. KATHERYN LAFRENZ OR MR. GAVIN ZEIGLER,  
DSN 793-2966/2996, COMMERCIAL 309) 782-2966/2996

EMAIL: [sfxxkl@ria-emhl.army.mil](mailto:sfxxkl@ria-emhl.army.mil)

### APPLICATION FOR MATERIAL LICENSE

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.

**APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:**

U.S. NUCLEAR REGULATORY COMMISSION  
 DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY, NMSS  
 WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
 NUCLEAR MATERIALS SAFETY SECTION B  
 475 ALLENDALE ROAD  
 KING OF PRUSSIA, PA 19405

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
 NUCLEAR MATERIALS SAFETY SECTION  
 101 MARIETTA STREET, SUITE 2800  
 ATLANTA, GA 30323

**IF YOU ARE LOCATED IN:**

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
 MATERIALS LICENSING SECTION  
 799 ROOSEVELT ROAD  
 GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
 MATERIAL RADIATION PROTECTION SECTION  
 811 RYAN PLAZA DRIVE, SUITE 1000  
 ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
 NUCLEAR MATERIALS SAFETY SECTION  
 1480 MARIA LANE, SUITE 210  
 WALNUT CREEK, CA 94695

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 JURISDICTION.

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

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_
- C. RENEWAL OF LICENSE NUMBER BML 12-00722-14

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Commander  
 U.S. Army Armament, Munitions & Chemical Cnd  
 ATTN: AMSMC-SFS  
 Rock Island, IL 61299-6000

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.

U.S. Army, Defense Logistics Agency, and Marine Corps temporary job sites worldwide

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Mrs. Kathryn M. LaFrenz

TELEPHONE NUMBER

(309) 782-2965

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. maximum amount which will be possessed at any one time.  
See Supplement A

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

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

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.  
See Supplement D

9. FACILITIES AND EQUIPMENT.  
See Supplement E

10. RADIATION SAFETY PROGRAM.  
See Supplement F

11. WASTE MANAGEMENT.  
See Supplement G

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)  
 FEE CATEGORY N/A 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, AND 40 AND THAT ALL INFORMATION CONTAINED 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, 82 STAT. 749 MAKES IT A CRIMINAL 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.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

*David T. Morgan, Jr.*

DAVID T. MORGAN, JR.  
 Colonel, GS

Chief of Staff.

5 Feb 91

**FOR NRC USE ONLY**

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS
AMOUNT RECEIVED	CHECK NUMBER		

APPROVED BY

DATE

### Summary Sheet

1. The Chemical Agent Monitor (CAM) is a hand-held, battery-powered, manually operating agent vapor monitor, capable of detecting, identifying, and providing relative concentration of nerve and mustard agent.
2. The CAM is used by ground forces to search and clean areas, to search and locate contamination on personnel, equipment, ships' structures, aircraft and land vehicles, buildings and terrain, and to monitor the effectiveness of decontamination. The CAM can also be used for monitoring collective protection. The CAM responds to nerve and blister agent vapors down to the lowest concentrations that could affect personnel over a short period.
3. A component of the CAM is the drift tube module, which contains a nickel 63 source. The source is a cylindrical metallic foil containing 10 millicuries of nickel 63 plated on a brass cylinder. It is held in a Teflon housing which is installed in a larger aluminum alloy cylinder.
4. Headquarters, U.S. Army Armament, Munitions and Chemical Command (AMCCOM) has the logistical responsibility to procure, deploy and maintain the CAM. The CAM is used world wide by the U.S. Army and Marine Corps. The CAM may be stored at U.S. Army, Marine Corps and Defense Logistics Agency depots.
5. The foil source will not be removed from the drift tube module.
6. ~~The drift tube module will be removed and replaced only by a contractor on his own facility, by designated repair depots or by direct support maintenance personnel trained in accordance with the requirements stated in Supplement D. This is a change from the previous license, which allows only for contractor and depot maintenance.~~
8. The CAM will be wipe tested every year except when in depot storage. When transferred between accountable officers, the CAM will be wipe tested before use if the annual wipe test had not been performed within one year of the transfer. AMCCOM will notify the reporting activity when wipe tests are due. The owning installations are responsible for ensuring the wipe tests are performed annually, whether they receive notification or not.
9. The drift tube module is serialized, and will be tracked throughout its life cycle by the Radiation Testing and Tracking System described in Supplement F. The Radiation Testing and Tracking System is used to notify the reporting activities when wipe tests are due, and to keep records of wipe test results.
10. No manufacturing will be performed under this license. No maintenance performed under contract at the contractor's facility will be performed under this license. The manufacturers and contractors must obtain their own NRC or Agreement State license.

NRC LICENSE FORM 313  
SUPPLEMENTAL INFORMATION

TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>
SUPPLEMENT A	RADIOACTIVE MATERIAL
SUPPLEMENT B	PURPOSE FOR WHICH LICENSED MATERIAL WILL BE USED
SUPPLEMENT C	INDIVIDUALS RESPONSIBLE FOR RADIATION SAFETY AND THEIR TRAINING AND EXPERIENCE
SUPPLEMENT D	TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS
SUPPLEMENT E	FACILITIES AND EQUIPMENT
SUPPLEMENT F	RADIATION PROTECTION PROGRAM
SUPPLEMENT G	WASTE MANAGEMENT
Enclosure 1	Source Drawing
Enclosure 2	Device Drawing
Enclosure 3	Radiation Safety Test Results (removed)
Enclosure 4	Radiation Caution Plate
Enclosure 5	Resumes (removed from working copy)
Enclosure 6	Technical Manuals
Enclosure 7	AMCCOM Radiation Protection Program
Enclosure 8	Record of Environmental Consideration (removed from working copy)
Enclosure 9	Concurrences (removed from working copy)



SUPPLEMENT A

SUPPLEMENT A

Item 5. Radioactive Material

- a. Element and mass number: nickel 63.
- b. Chemical and physical form: nickel 63 plated on a brass cylinder.
- c. Maximum amount which will be possessed at any one time:  
Not to exceed 12 millicuries per source, 1000 curies total, for total US Army procurement.

SUPPLEMENT B

## SUPPLEMENT B

### Item 6. Purpose for which licensed material will be used

The CAM is used by ground forces to search and locate chemical agent contamination on personnel, equipment, ships' structures, aircraft and land vehicles, buildings and terrain, and to monitor the effectiveness of decontamination. The CAM can also be used for monitoring collective protection. The CAM responds to nerve and blister agent vapors down to the lowest concentrations that could affect personnel over a short period.

The CAM will be used by the U.S. Army and U.S. Marine Corps on DOD installations and temporary job sites throughout the United States and the world.

The principle of detection is based on ion mobility spectrometry. Outside air is drawn in through the sampling probe across the membrane. Air molecules are swept over the membrane and permeate into the detector cell. The air molecules are ionized by the nickel 63 source as they pass through the drift tube module.

The molecular ions are propelled through the drift tube module by their attraction to the shutter grid. An electromagnetic field is established around the drift tube by applying a 1000 volt direct current potential to the spacer rings. The polarity of the applied voltage is such that the ions are repelled from the wall of the tube and remain suspended in flight until they impact the farraday plate. At this plate, there is an exchange of charge, and the change in current is detected. The current is averaged and displayed on the LED readout. The LED indicates the relative concentrations of agent or simulant present.

SUPPLEMENT C

SUPPLEMENT C

Item 7. Individuals responsible for the radiation safety program and their training and experience.

Mr. David P Skogman, AMCCOM Senior Safety Engineer, is designated License Manager. Mrs. Katheryn LaFrenz, AMCCOM Health Physicist, is the Radiation Safety Officer. Mr. Jeff Havenner and Mr. Gavin Ziegler, AMCCOM Health Physicists, are the alternate Radiation Safety Officers.

Resumes are at enclosure 5.

SUPPLEMENT D

## SUPPLEMENT D

### Item 8 Training for individuals working in or frequenting restricted areas.

#### 1. User training

a. Users of AMCCOM radioactive devices are provided with published technical manuals. These publications apprise the user of the hazards associated with the devices and specify precautions that must be taken, as illustrated in the example provided at enclosure 6. This information is sufficiently broad in scope to cover the use of the device throughout its life cycle.

b. The user installations are authorized possession and use of the CAM. Removal of the drift tube module from the CAM at the user level for any reason is prohibited. Interior maintenance operations will be performed only at designated repair depots or by Direct Support radiation safety trained personnel.

c. Installations within the U.S. Army and U.S. Marine Corps authorized to possess the CAMs will have either an appointed Chemical Officer, a Radiation Protection Officer (RPO) or an accountable individual designated to ensure local compliance with the requirements of the license.

#### 2. Maintenance Training

a. Maintenance personnel who repair AMCCOM radioactive devices are provided with published technical manuals. These publications apprise the maintenance personnel of the hazards associated with the devices and specify precautions that must be taken, as illustrated by the example provided at enclosure 6.

b. Maintenance involving removal and replacement of the drift tube module, and the annual wipe test, will be performed only by properly trained personnel at the designated repair depots or Direct Support maintenance activities. The training required by personnel performing the interior maintenance and annual wipe test, consists of a minimum of 8 hours radiation safety training on:

1.) Structure of matter, radiation units, absorption of radiation and shielding.



- 2.) Hazards of nickel 63.
- 3.) Radiation detection instruments.
- 4.) Catastrophic emergencies and decontamination.
- 5.) Army regulations governing use, storage, transfer and disposal.
- 6.) Title 10, Parts 19, 20 and 21 of the Code of Federal Regulations.
- 7.) Transactions required for serial number tracking.
- 8.) Wipe testing.

9. Direct Support maintenance training, which includes radiation safety training outlined above, may be obtained from the U.S. Army Signal School, Fort Gordon, GA or from equivalent training schools. The installation Radiation Protection Officer may also conduct training in radiation safety to meet the requirements listed in paragraph b above.

### 3. Depot training

a. Depots performing maintenance involving the interior of the CAM, and involving removal, replacement and repair of the drift tube module, sieve breather assembly and membrane are provided with published Depot Maintenance Work Requirements or a Scope of Work. These publications apprise the depot maintenance personnel of the hazards associated with the devices, and specify precautions that must be taken, as illustrated by the example provided at enclosure 6.

b. Each depot should have a designated RPO and at least one alternate. The RPOs at the depots should have, as a minimum, 80 hours formal training in the following areas:

- 1.) Principles and practices of radiation protection.
- 2.) Radioactivity measurement standardization and monitoring techniques and instruments.
- 3.) Mathematics and calculations basic to the use and measurement of radioactivity.
- 4.) Biological effects of radiation.

Successful completion of the U.S. Army Radiological Safety Course (7KF3) offered at the U.S. Army Chemical School, Fort McClellan, Alabama, satisfies this requirement. Alternate training for depot RPOs must be evaluated and approved by the AMCCOM RSO.

SUPPLEMENT E

## SUPPLEMENT E

### Item 9. Facilities and Equipment

#### 1. User requirements.

a. The CAM is a portable, hand-held instrument designed to determine and indicate the hazard from nerve or blister agent vapor present in the air. The CAM can be held in either hand and operated while dressed in chemical protective clothing. The CAM can be operated day or night.

b. The user must process the receipt, shipment and other transactions as required by the Radiation Testing and Tracking System and ensure the annual wipe tests are performed. The user must turn the CAM in to Direct Support for maintenance and wipe test.

c. User storage areas will be secured against unauthorized access. The storage areas will be so located as to be free from danger of flooding and outside the danger radius of flammables and explosives.

#### 2. Depot Storage Requirements.

a. Depots authorized to store bulk quantities of CAMs and drift tube modules will store the items in rooms, buildings, or caged areas designated for storage of radioactive items. There is no limit to the number of CAMs and drift tube modules per storage area at bulk storage locations. Areas will be posted with signs stating "Radioactive Material" and secured against unauthorized access. The storage areas will be so located as to be free from danger of flooding and outside the radius of flammables and explosives.

b. Depot storage areas will be monitored monthly with portable radiac equipment. Wipe tests will be taken of the storage areas quarterly. Wipe tests will be analyzed by a liquid scintillation counting system.

c. Depots will process receipt, shipment, and other transactions as required by the Radiation Testing and Tracking System.

#### 3. Maintenance Facilities

a. Personnel responsible for maintenance involving the interior of the CAM, and removal and replacement of the drift

tube module, will have a PDR 27() or equivalent beta detection instrument. The maintenance areas will be surveyed at the end of each work day that maintenance is performed.

b. Depot maintenance facilities involved in removal and replacement of the drift tube module, sieve breather assembly and membrane will have a liquid scintillation counting system.

c. Maintenance facilities will process the receipt, shipment, wipe test, drift tube module exchange, and other transactions as required by the Radiation Testing and Tracking System, described in Supplement F.

#### 4. Calibration of Instruments

a. Calibration service for portable survey instruments may be obtained from the Test Measurement Diagnostic Equipment Support Group at Lexington, KY and Sacramento, CA, or a facility approved by the U.S. Army or U.S. Marine Corps.

b. Beta survey instruments used for health and safety purposes will be calibrated every 3 months, using sources certified by or traceable to the National Institute of Standards and Technology.

c. The liquid scintillation counting system used to evaluate wipe tests will be calibrated with a nickel 63 standard traceable to the National Institute of Standards and Technology on an annual basis. Quarterly revalidations of that calibration along with daily consistency checks over a range of energies will be used to verify proper operation of the equipment.

SUPPLEMENT F

## SUPPLEMENT F

### Item 10. Radiation Protection Program

1. General. The AMCCOM RSO is responsible for monitoring the overall radiation protection program. Installation RPOs implement the radiation protection program at their installations in accordance with license conditions and the U.S. Army, Defense Logistics Agency and Marine Corps regulations.

#### 2. Radiation Testing and Tracking System

a. The drift tube module of the CAM is serialized and is tracked throughout the life cycle by the Radiation Testing and Tracking System. By this system, transactions are processed for every shipment, receipt, wipe test, drift tube removal and replacement actions.

b. Initial wipe tests are performed by the manufacturer on each CAM. Serialization transactions are forwarded by the manufacturer to AMCCOM to establish the initial drift tube serialization records.

c. Wipe tests are taken and forwarded for analysis on an annual basis by Direct Support maintenance personnel, the designated repair depot, or by persons with equivalent radiation safety training. This headquarters will notify the reporting activity when the wipe tests are due. The owning installations are responsible for ensuring the wipe tests are performed annually, whether they receive the notification from this headquarters or not.

d. Wipe tests are mailed to and analyzed by the Army Ionizing Radiation Dosimetry Center (AIRDC), Lexington, KY or to other laboratories designated by the licensee. Wipe test results are maintained by AMCCOM. If a test should exceed 0.005 microcuries nickel 63, the laboratory will immediately notify the AMCCOM RSO, the CAM item manager in the Material Management Directorate, the unit who sent in the wipe test, the owning activity and reporting activity, by priority message. The owning activity will immediately isolate the detector and send to the designated depot per instructions from the item manager. The installation or major command radiation safety officer will also be notified by the AMCCOM RSO.

3. Accountability of the CAMs is maintained by each individual Installation Accountable Property Officer. The Hand Receipt Holders must perform annual physical inventories and perform records reconciliation update six months later. Causative research at user and intermediate levels is required by the accountable officer prior to the approval of losses. Hand

receipt holders and property book officers must initiate a report of survey for all losses to determine cause for loss and to identify negligence, willful misconduct, or theft. Approving authority for reports of survey must be of military rank O6, Colonel, or above, in accordance with existing DOD supply regulations. The AMCCOM RSO should be notified as soon as possible when loss or damage of licensed material is suspected.

4. The basic AMCCOM Radiation Protection Program is at enclosure 7.

u

SUPPLEMENT G

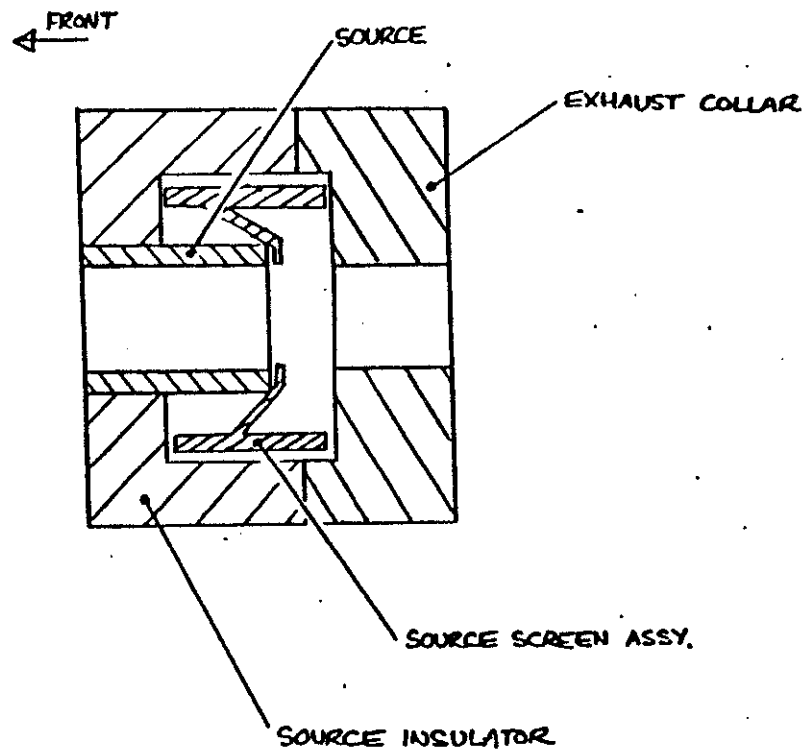


## SUPPLEMENT G

### Item 11 Waste disposal

Radioactive waste generated by military users is disposed of in accordance with current NRC and Department of Transportation (DOT) regulations. Currently, this headquarters is the radioactive waste program manager for the U.S. Army and issues detailed packaging and shipping instructions to the U.S. Army and to other Department of Defense users of AMCCOM commodities. This headquarters also audits radioactive waste shipments to ensure compliance with the DOT, NRC and burial site criteria.

ENCLOSURE 1  
SOURCE DRAWINGS



[SOURCE IS AN INTERFERENCE FIT WITH THE SOURCE INSULATOR]

SECURITY CLASSIFICATION

METRIC

5 0

25

USED ON

7R/416

-306

8S/416

-306

DO NOT SCALE



ACTUAL SIZE

3RD ANGLE PROJECTION



BS 308

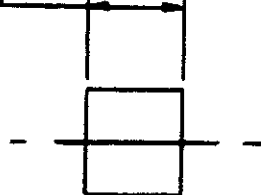
HANDWORK TO BE IN ACCORDANCE WITH G.D.L. PC/021

NOTE

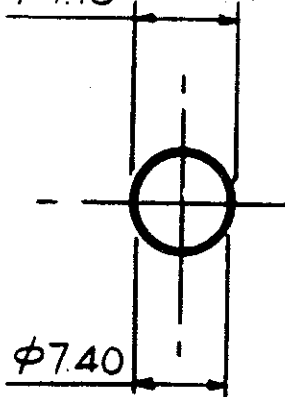
DIMENSIONS APPLY AFTER ELECTROLESS NICKEL PLATING.

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7.0 ± 0.08



φ7.70



FINISH

1 ELECTROLESS Ni PLATE. TO DEF. 03-5/1

2 PLATE WITH Ni 63 - 10 MCL ± 3/5 MCL.

REMOVE ALL BURRS AND SHARP EDGES

MATERIAL

BRASS CZ108 TO BS 2874

FINISH

SEE ABOVE

DIMENSIONS IN MILLIMETRES

TOLERANCES UNLESS OTHERWISE STATED

WHOLE No. ± ANGULAR DIMS. ±  
1 DEC. PLACE ± DRILLED HOLES +  
2 DEC. PLACES ± 0.05

PROD. APP

SCALE 2/1

SURFACE ROUGHNESS

ENG. APP

CHKD. BY

TRCD. BY

DRN BY

GRASEBY DYNAMICS LTD. BUSHEY - HERTS - ENGLAND

TITLE

SOURCE

DCN 17099	2	16.9.85
PR. DCN 17150	1	1.5.85
DCN - 16066	H	6.7.84
PPR D2 11256		
AS 15651	GA	20.2.84
DR 10917		
PROCEDURE WORDING MODIFIED	G	25.8.83
PROCEDURES ADDED	F	17.3.83
FINISH WAS DEF 03-10/1	E	12.1.83
FINISH NOTE ADDED.	D	26.11.82
TOL ± 0.08 - ADDED	C	15.11.82
MATL WAS CZ121 (M)	B	29.9.82
	A	26.6.82

MODIFICATION

ISSUE

DATE

SECURITY CLASSIFICATION

CONTRACTORS REFERENCE No.

4D 416-416

SERVICE DRAWING NUMBER

SHEET

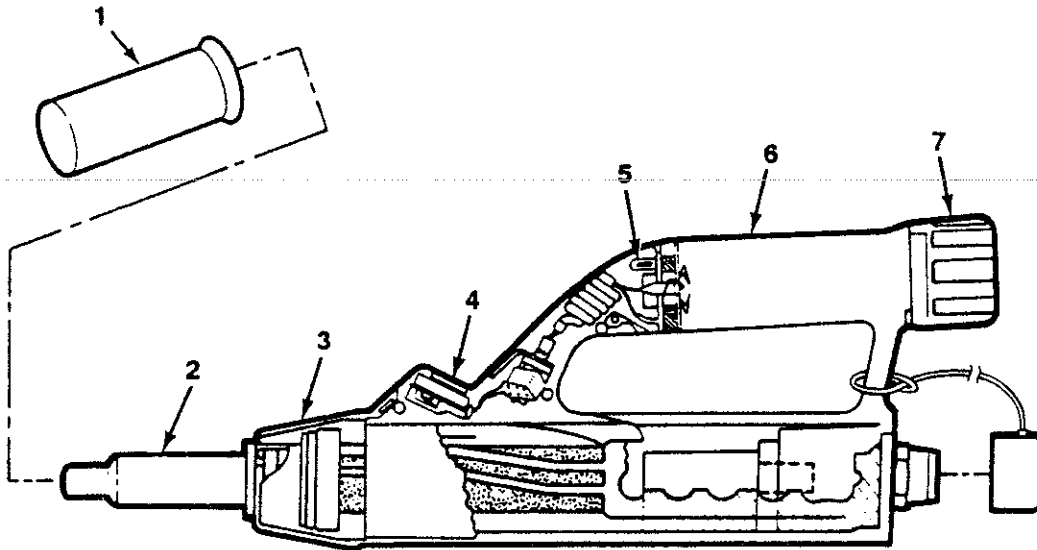
1 OF 1 SHTS

A 4

ENCLOSURE 2

DEVICE DRAWINGS

## LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



a. **Nozzle Protective Cap (1).** Protects nozzle assembly and ensures that clean air is sampled when CAM is started.

b. **Nozzle Assembly (2).** Chemical agent vapors are drawn in through this inlet for analysis by the CAM. A heater wire is wound around the tubular section of the molding. Nozzle assembly is secured to CAM with a special bayonet type locking ring. A special tool from the diagnostic test set is used to remove it from the CAM.

c. **Case-Front End (3).** Provides a common attachment point for the nozzle protective cap, nozzle assembly, nozzle holder assembly, and drift tube module.

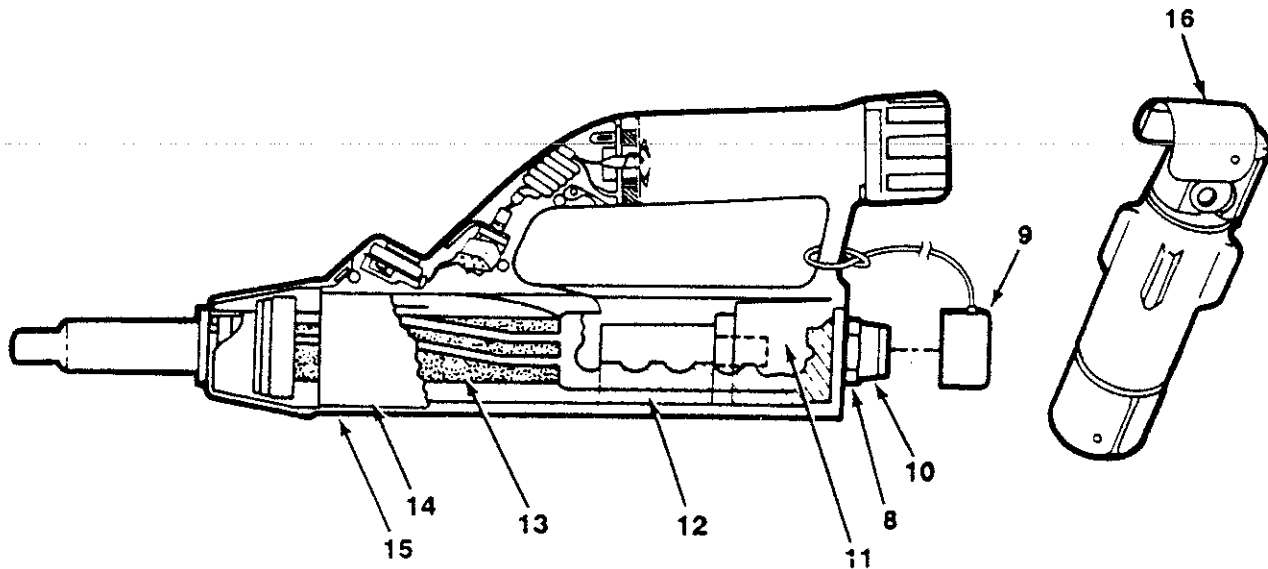
d. **Display Assembly (4).** Display is a liquid crystal device back-lit by light emitting diodes (LED). Display shows operating status and hazard level, and aids in indicating a malfunction. The ON/OFF and G/H mode switches are part of the assembly. The mode switch controls the polarity of the cell to enable the cell to handle either positive nerve agent ions or negative blister agent ions. Two sealed rubber pads cover the switch pushbuttons.

e. **Battery Contact Assembly (5).** Provides spring loaded contact to mate with the battery terminals and interconnect battery power to the CAM.

f. **Case Assembly (6).** Houses display assembly and battery contact assembly. Case assembly fits over the monitor module assembly.

g. **Battery Cap Assembly (7).** Bayonet fitting cap which retains the battery.

## LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (CONT).



h. **Locknut (8)**. Locknut is removed to gain access to the internal parts of the CAM.

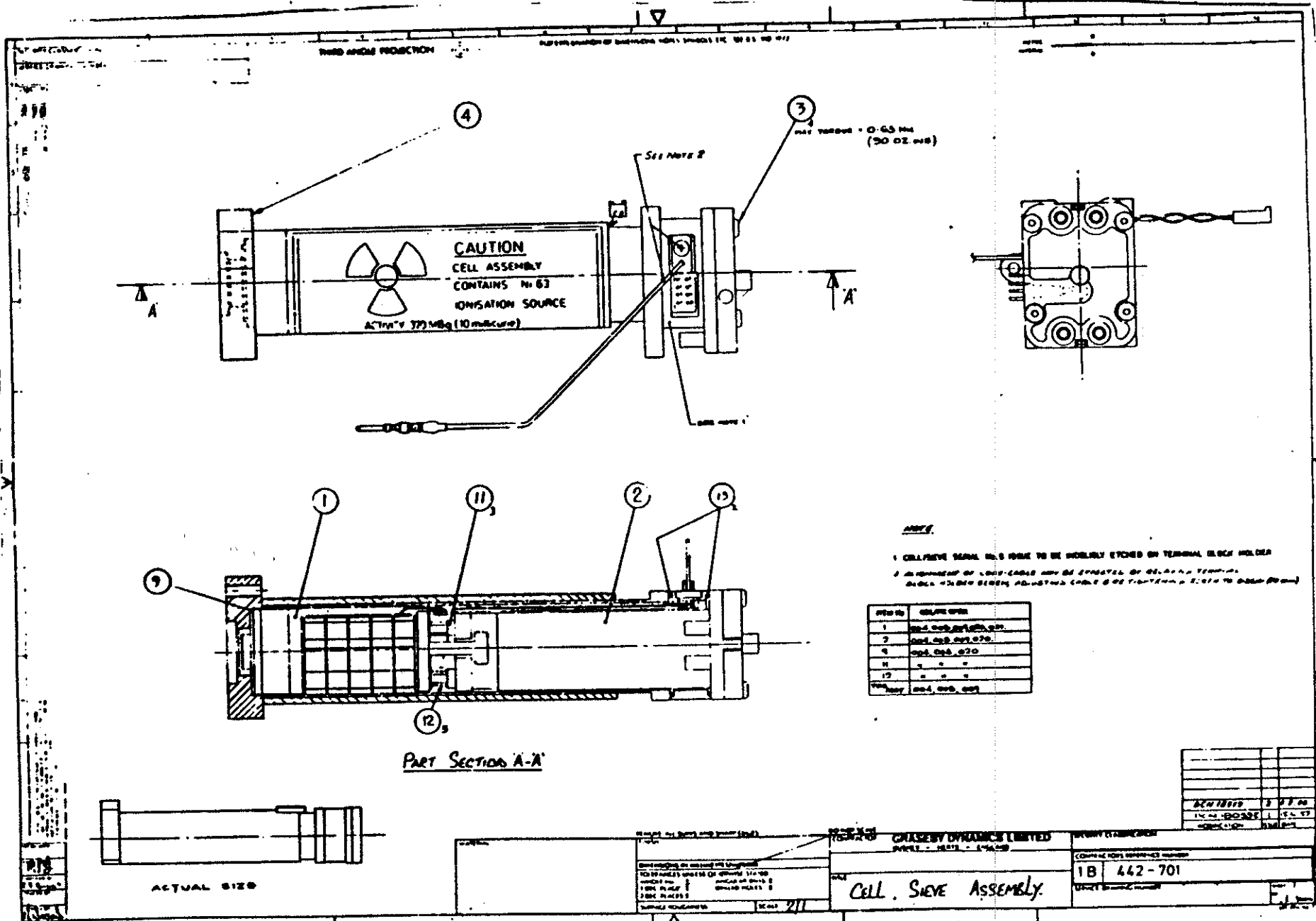
i. **Environmental Cap Assembly (9)**. Consists of a tether-bayonet fitting cap protecting the chassis plate connector assembly. Provides storage for nozzle protective cap during operation. Contains the serial number disc for the drift tube module.

j. **Chassis Plate/Connector Assembly (10)**. Provides diagnostic electronic connections for use during maintenance.

k. **Sieve (Pump) Assembly (11)**. A second molecular sieve which adds to the total filtering of the CAM recirculatory air. It fits around the body of the pump assembly.

l. **Pump Assembly (12)**. Consists of two silicone rubber diaphragm pumps driven by a dc motor and yoke mechanism.

m. **Drift Tube Module (13)**. Consists of a cell assembly, sieve/breather assembly, and membrane assembly. The cell assembly, which contains the radioactive source, is in the form of a stack of components held together with stainless steel rods and retaining clip. Two of the rods are drilled with holes to provide air flow paths for the drift and source regions of the cell; the rods also link the return air flow through the molecular sieve assembly and pump assembly. A membrane assembly is located at the forward end of the cell/sieve. The membrane assembly is a thin silicone rubber layer that forms a division between the outside air and the controlled environment inside the analysis section of the CAM. The membrane permits chemical agent vapor molecules to permeate to the cell assembly. Membrane is heated to about 250°F (120°C). The serial number of the drift tube module is located on a disc near the locknut (8) on the end of the CAM.



**CAUTION**  
 CELL ASSEMBLY  
 CONTAINS No. 63  
 IONISATION SOURCE  
 ACTIVITY 372 MBq (10 microcurie)

MAX TORQUE = 0.65 Nm  
 (50 OZ. IN)

- NOTE**
- 1 CELL/SIEVE SERIAL NO. IS TO BE HOLOGRAPHICALLY ETCHED ON TERMINAL BLOCK HOLDER
  - 2 ALIGNMENT OF LOCK CABLE AND OF SPRING OF RELEASE TERMINAL BLOCK TO BE CHECKED AGAINST THE POINT OF FIXTURES EACH TO DRAW (20-1)

ITEM NO.	DESCRIPTION
1	END CAP, 0.500, 0.500, 0.500
2	END CAP, 0.500, 0.500, 0.500
3	END CAP, 0.500, 0.500, 0.500
4	END CAP, 0.500, 0.500, 0.500
5	END CAP, 0.500, 0.500, 0.500
6	END CAP, 0.500, 0.500, 0.500
7	END CAP, 0.500, 0.500, 0.500
8	END CAP, 0.500, 0.500, 0.500
9	END CAP, 0.500, 0.500, 0.500
10	END CAP, 0.500, 0.500, 0.500
11	END CAP, 0.500, 0.500, 0.500
12	END CAP, 0.500, 0.500, 0.500
13	END CAP, 0.500, 0.500, 0.500

PART SECTION A-A

ACTUAL SIZE

CHASEY DYNAMICS LIMITED		BRITISH ESTABLISHED
18 442-701		CONTRACT NO. 442-701
CELL SIEVE ASSEMBLY		DATE: 1964



V

DRAWING NO. 7R/442-031  
 DATE 10/4/87  
 BY DCN18059 E

DCN BY P.C.O.  
 TRCD BY  
 SPCD BY  
 DATE  
 MOD No.

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25/442-701  
 7R/442-031  
 65/442-03

USED ON

ISSUE  
 DATE  
 MOD No.

SECURITY CLASSIFICATION		
REFERENCE No	TITLE	COLUMN
1E/442-101	CELL/SIEVE ASSEMBLY	a
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ISSUE  
 DATE  
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ITEM	DRAWING No	TITLE	No. Of								REMARKS	
			a	b	c	d	e	f	g	h		
1	0B/442-306	CELL ASSEMBLY	1									
2	1B/442-307	SIEVE/BERLATHER ASSY	1									
3	3B/442-754	SPECIAL SCRFW M3X30LO.	4									
	1B/442-722	DRIFT TUBE/HEATER ASSY	1									
5												
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7												
8												
9	4D/442-505	SENSOR BODY SEAL	1									
10												
11	3E/442-417	SEAL	3									
12	3E/442-517	SPRING	3									
13	4052-2447	O RING	2									DOWTY 100 024 212
14												
15												
16												
17												
18	6825-2050	WHITE ROTRING INK.	1									

CONTRACTOR GRASEBY DYNAMICS LTD  
 SECURITY CLASSIFICATION  
 CONTRACTOR'S REFERENCE No.  
 ITEM LIST FOR 7R/442-701  
 SHEET 1 OF 1





V

ISSUED ON: 10/12/87

BY: [Signature]

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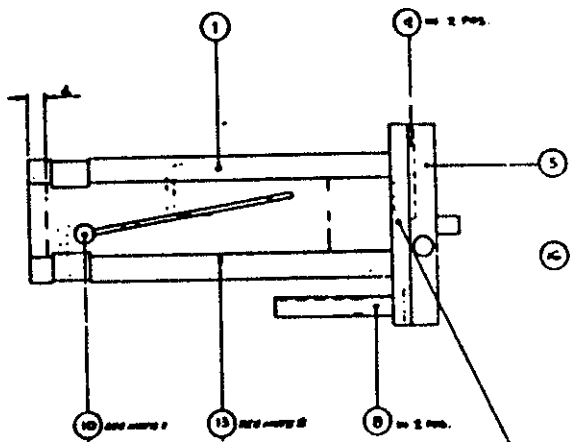
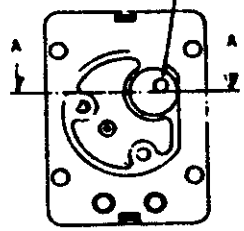
CONTRACTOR: GASEXY DYNAMICS LTD

CONTRACTOR'S REFERENCE No. 7R 442-702

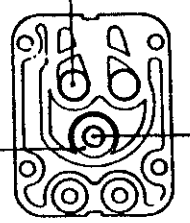
ITEM LIST FOR

PAGE 1 OF 1

WHEN INSERTING RING (ITEM 6) ENSURE THAT RING IS ON SAME FACE AS EXISTING PARTS 4, 5, 6, 7 AND 8—FACED WITH THEM



FILL CAVITY WITH A MISTURE 50%:50% (BY VOLUME) OF ITEMS 24 AND 25, BEFORE FITTING.

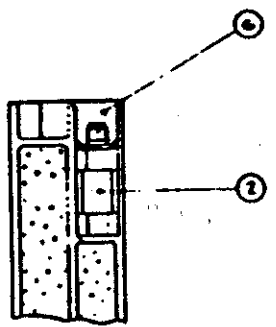


END VIEW WITH MANIFOLD PLATE REMOVED FOR CLARITY

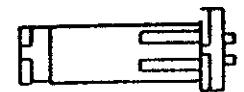
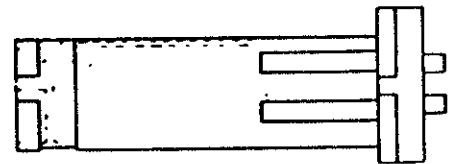
- NOTES:
- 1 ITEM 10 WHEN FITTED SHALL BE BETWEEN 0.2 TO 1.0 mm (0.0078" TO 0.0394")
  - 2 ITEM 12 WHEN FITTED SHALL BE VISIBLE FROM FRONT VIEW, WHIRLS & AIR BUBBLES.
  - 3 LEAKS OF AIR FROM SOURCE TO BE STOPPED BY THIS RING PLATE WITH HELPFUL OF ACETONE WASH

FILL CAVITIES WITH A MISTURE 50%:50% (BY VOLUME) OF ITEMS 24 AND 25

POSITION OF ACETONE SOURCE SERIAL NUMBER.



PART SECTION THRU A-A



ACTUAL SIZE

ITEM NO.	QTY	DESCRIPTION
1	004 005 0 010	
5	"	
6	004 005 1 009	
7	004 005 1 020	
10	004 005 0 010	
11	"	
12	004 005 0 020	
13	004 005 0 020	
14	004 005 0 020	
24	008	
25	008	
2	008 0 001	


DRAWING NO. 104 005 1 009 SHEET NO. 1 1:1 DATE 10/10/52 DRAWN BY J.S. CHECKED BY J.S.	DESIGNED BY DRAWN BY CHECKED BY	MANUFACTURED BY CHASEBY DYNAMICS LIMITED WYBY - 1018 - 1019	QUANTITY REQUIRED 104 005 1 009
	CONTRACTORS REFERENCE NUMBER 10 442 - 307		DRAWING NO. 104 005 1 009

SIEVE, BREATHER ASSEMBLY

Y

18/442 101  
B-442 307

USED ON

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DRAWN BY: C.D.  
 CHECKED BY: [Signature]  
 DATE: 16/4/87  
 MOD. No.: OCN 18059 E  
 DATE: 16/4/87  
 MOD. No.: OCN 18059 E

SECURITY CLASSIFICATION		
REFERENCE No	TITLE	COLUMN
18/442-307	SIEVE BREATHER ASSY	a
		b
		c
		d
		e
		f
		g
		h

CONTRACTOR: GRABER DYNAMICS LTD  
 SECURITY CLASSIFICATION: [Blank]

ITEM	DRAWING No	TITLE	NO. OFF								REMARKS
			a	b	c	d	e	f	g	h	
1	28/442-429	SIEVE/BREATHER BODY ASSY	1								
2	38/442-424	ACETONE SOURCE ASSY	1								
3											
4											
5	2D/442-380	MANIFOLD PLATE	1								
6	38/442-471	PLUG ASSY	1								
7											
8	3D/442-720	SEALING BUSH	2								
9											
10	4D/442-402	BREATHER RESTRICTOR	2								
11	4D/442-403	SIEVE FILTER	2								
12	3D/442-384	MANIFOLD SEAL	2								
13	4U/442-474	TAPE SEAL	1								
14											
15											
16	4050-3548	O' RING SILICONE RUBBER	1								QTY 2 100-507-1800
17											
18											
19											
20											
21											
22											
23											
24	6880-0505	SEAL RING SILICONE RUBBER	1								QTY 2 100-507-1800
25	6880-0510	SEAL RING SILICONE RUBBER	1								QTY 2 100-507-1800
26											
27											
28											
29											
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31											
32											
33											
34											
35											

CONTRACTOR'S REFERENCE No.: 7R  
 DATE: 4/4/87  
 ITEM LIST FOR: [Blank]  
 SHEET 1 OF 1



ENCLOSURE 4

Radiation Warning Caution Plate

In lieu of using the conventional radiation caution colors (magenta or purple on yellow background, as provided in Section 20.203 (a) (1) of Title 10, Code of Federal Regulations), the U.S. Army licensed commodities use silver, black or red on black or olive drab background.



ENCLOSURE 6

OPERATOR AND MAINTENANCE MANUALS

1. EXCERPTS FROM OPERATOR'S MANUAL
2. EXCERPTS FROM THE DIRECT SUPPORT MAINTENANCE MANUAL
3. EXCERPTS FROM THE DEPOT MAINTENANCE MANUAL

The excerpts are included to illustrate the types of instructions provided to the operator and the maintainer. The wording may be changed somewhat, since manuals are continuously being reviewed and updated as necessary.

Requirements contained in the technical manuals are intended for observance during peacetime, and to the maximum extent possible during wartime operations. It is recognized that in time of war or combat operations, certain requirements or provisions may neither be feasible nor observable.



TECHNICAL MANUAL  
OPERATOR'S AND UNIT MAINTENANCE MANUAL  
CHEMICAL AGENT MONITOR (CAM)  
HEADQUARTERS, DEPARTMENT OF THE ARMY

Inside front cover:

Warning



NICKEL-63 (Ni-63)

The Chemical Agent Monitor (CAM) contains a beta radiation source in the quantity which requires a Nuclear Regulatory Commission license to possess items which contain the source. The CAM contains 10 millicuries of Nickel-63. The Nickel-63 plated cylinder is the source which ionizes chemical agents allowing for their detection.

The source is fully enclosed and protected by the CAM case.

The CAM is potentially dangerous if broken.

1. Handle the CAM carefully.
2. DO NOT attempt to OPEN the CAM case.
3. If a CAM is damaged, inform the Chemical-Biological-Radiation officer, and if available, the local Radiation Protection Officer.
4. The damaged CAM should be wrapped in a plastic bag and shipped in original packing container, if available, to Intermediate Direct Support Maintenance for evaluation. If skin contact is made with any area thought to be contaminated with Nickel-63, wash immediately with nonabrasive soap and water.
5. Follow safety procedures for storage, shipment, and disposal in accordance with this manual, local regulation and AR 385-11.

**WARNING**

**RADIATION HAZARD**



**NICKEL-63 (NI-63)**

Wide tests must be performed before and after any interior maintenance of the CAM. Contamination can become airborne by heated air and smoke from fire. Stand upwind of fire to avoid inhalation of possible contamination.

The Chemical Agent Monitor (CAM) contains a beta radiation source in the quantity which requires a Nuclear Regulatory Commission license to possess items which contain the source. The CAM contains 10 millicuries of Nickel-63. The Nickel-63 plated cylinder is the source which ionizes chemical agents allowing for their detection.

The source is totally enclosed and protected by the CAM case.

The CAM is potentially dangerous if broken.

1. Handle the CAM carefully.
2. If CAM case is broken or cracked, inform the Nuclear-Biological-Chemical Officer, and if available, the local Radiation Protection Officer.
3. A damaged CAM beyond the repair capability of direct support should be wrapped in a plastic bag and shipped in original packing container, if available, to depot maintenance for repair. If skin contact is made with any area thought to be contaminated with Nickel-63, wash immediately with nonabrasive soap and water.
4. Follow safety procedures for storage, shipment, and disposal in accordance with this manual, local regulation AR 710-3 and AR 385-11.

# CHAPTER 3

## DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

---

### Section I. RADIOLOGICAL SAFETY INSTRUCTIONS

#### WARNING

#### RADIATION HAZARD



#### NICKEL-63 (NI-63)

Wipe tests must be performed before and after any interior maintenance of the CAM.

#### CAUTION

To avoid contamination of equipment DO NOT:

- Smoke, eat, or drink in work area.
- Use after shave or perfume.
- Use cleaning agents, floor wax, sprays, adhesives, paint, or similar items.
- Use insect or skin repellents.
- Handle internal parts without wearing rubber gloves.

### 3-1. WORK AREA.

#### INITIAL SETUP

##### Tools/Equipment

RADIAC Set AN/VDR-2 (or equivalent)

##### Materials/Parts

- Paper (Item 6, App D)
- Tape (Item 10, App D)
- Gloves (Item 5, App D)
- Plastic Bag (Item 1, App D)
- Swipe (Item 9, App D)
- Ball Point Pen (Item 7, App D)
- Soap (Item 8, App D)

#### a. Preparation of Work Area.

- (1) Cover work surface with paper.
- (2) Secure paper to work surface with tape, insuring all seams are sealed.

### 3-1. WORK AREA (CONT).

#### b. Work Area Cleanup and Decontamination.

##### NOTE

Work area must be wiped and the wipe surveyed with AN/VDR-2, or equivalent, for presence of Nickel-63 contamination at conclusion of work EACH day that maintenance operations are performed. Surveys must be documented. If the survey indicates that the area is contaminated, the area must be decontaminated as follows:

- (1) Wear disposable gloves.
- (2) Fold paper inward to hold in contamination and place in plastic bag and seal bag.
- (3) Take a wipe of the area with the swipe. Evaluate the swipe with AN/VDR-2, or equivalent. It should be the same as background.
- (4) Wipe detected hot spots with swipe.
- (5) Check swipe. Repeat wipe tests until clean.
- (6) Dispose of gloves and swipe in plastic bag. Seal bag.
- (7) Using a ball point pen, mark: "RADIOACTIVE MATERIAL Ni-63" and the estimated amount on a piece of tape and apply the tape to the plastic bag.
- (8) Place sealed bags in radioactive waste container.
- (9) Wash hands for two minutes with soap at conclusion of maintenance or testing of CAM and at conclusion of any work area cleanup operations.

### 3-2. ACCOUNTABILITY.

For instructions on completing necessary transactions. Contact your Cell Serialization Surety Officer (CSSO) in accordance with AR 710-3, Chapter 4, Section 2. A transaction is required for each of the following:

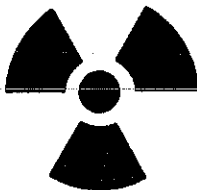
- a. Inventory loss.
- b. Suspected loss or theft.
- c. Receipt.
- d. Shipment.
- e. Demilitarization.
- f. Wipe test result.
- g. Removal of a drift tube module from CAM.
- h. Insertion of a drift tube module into CAM.

### 3-3. FIRE AND EXPLOSION EMERGENCIES.

#### a. Fire Emergencies.

**WARNING**

**RADIATION HAZARD**



**NICKEL-63**

Contamination can become airborne by heated air and smoke from fire. Stand upwind of fire to avoid inhalation of possible contamination.

- (1) Notify all personnel to evacuate area or building and to stand upwind of heat and smoke.
- (2) Notify fire department of fire and possible hazards, and that self-contained breathing apparatus should be worn.
- (3) Turn off all ventilation equipment.
- (4) Close all doors and windows.
- (5) Notify your NBC NCO or Officer, or RPO.

#### b. Explosion Emergencies.

- (1) Care for injured (FM 21-11).
- (2) Notify your NBC NCO or Officer, or RPO.
- (3) Notify medical team.
- (4) Cordon off area.

### 3-6. CHECKING UNPACKED EQUIPMENT.

a. **Inspection.** Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF Form 364, Report of Discrepancy.

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions of DA PAM 738-750, The Army Maintenance Management Update (TAMMS), or AFR 66-1, Maintenance Management Policy.

### 3-7. WIPE TEST.

#### WARNING

Do not lick envelopes to seal them or ingestion of Nickel-63 may result. Use tape only.

#### NOTE

Perform wipe test annually.

a. Twist (counterclockwise) and remove environmental cap (1) from CAM (2); let environmental cap hang on tether (3).

b. Observe CAM and drift tube module lot number discs on end of CAM (view A). Use ball point pen (Item 7, App D) to record serial number of CAM (4) and lot number of CAM and serial/lot number of drift tube module (recorded on the lot number discs) on envelope (Item 3, App D) which will be used to hold wipe paper. Record name and location of user on envelope. The envelope should be addressed as follows:

Chief  
U.S. Army Ionizing Radiation Dosimetry Center (AIRDC)  
ATTN: AMXTM-CE-DCR  
Lexington, KY 40551-5102

c. Twist (clockwise) and install environmental cap (1) onto CAM (2).

d. Prepare necessary transactions as required by AR 710-3, Chapter 4, Section 2.

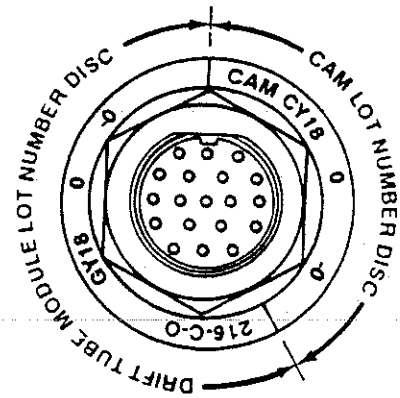
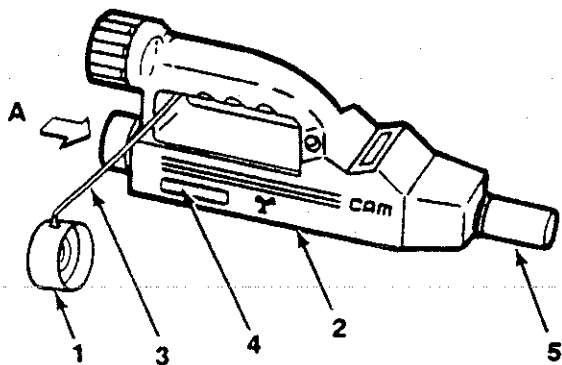
e. Use swipe from swipe test cloth (Item 9, App D).

f. Wipe exterior surface of CAM (2) and around nozzle protective cap assembly (5).

g. Using a RADIAC set AN/VDR-2, check the wipe for contamination, as follows:

#### NOTE

Perform the following procedures in an area that is free from all radiation, except for normal background radiation.



VIEW A

- (1) Adjust AN/VDR-2 to measure 0 to 0.5 mR/hr.
- (2) Open the beta shield of the probe of the AN/VDR-2.
- (3) Place wipe paper approximately 1/4 in. in front of the probe and note the indication.  
DO NOT TOUCH THE PROBE WITH THE WIPE.

**WARNING**

Any sustained reading of the AN-VDR-2 (or equivalent meter) that is twice background may indicate Nickel 63 contamination. If the reading is over twice background, discontinue use of the CAM, and place in plastic bag until the wipe test is analyzed by the AIRDC laboratory, to verify that Nickel 63 contamination is present. Disposition instruction for the contaminated CAM will be provided by AMCCOM. If the sustained reading is less than twice the background level, the CAM may be returned to use. The wipe test will be verified by the AIRDC laboratory.

- h. Place swipe test cloth in marked envelope.
- i. Seal envelope which contains swipe test cloth with tape (Item 10, App D). Mark on the envelope:  
MAIL ROOM - DO NOT OPEN.
- j. Place sealed, marked envelope and computer transaction card(s) in a second envelope (Item 4, App D) and address as follows:

Chief  
U.S. Army Ionizing Radiation Dosimetry Center (AIRDC)  
ATTN: AMXTM-CE-DCR  
Lexington, KY 40551-5102

- k. Seal envelope with tape (Item 10, App D). Wash hands with soap (Item 8, App D) and water.

### 3-7. WIPE TEST (CONT).

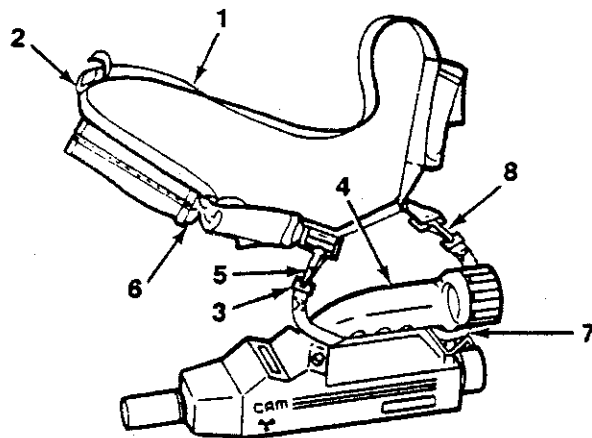
l. Results of wipe test evaluation by AIRDC will be forwarded to AMCCOM. In case wipe test analysis indicates a hazardous level, AIRDC will notify the proper reporting activity.

m. The CAM can be used immediately after issue unless radiation leakage is suspected or an accident was involved.

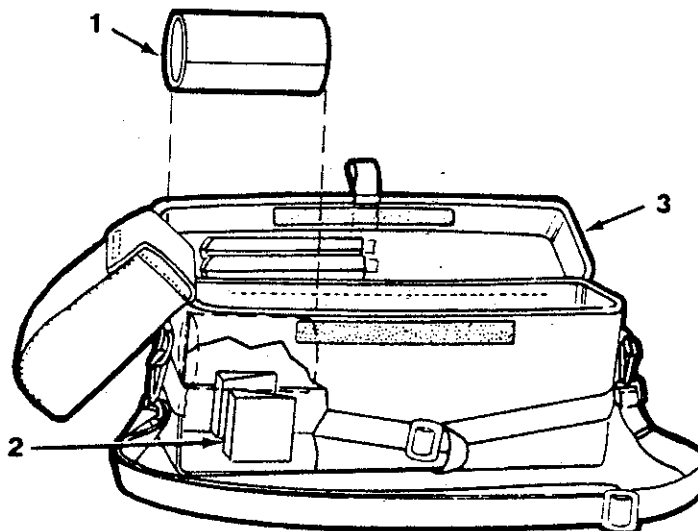
### 3-8. ASSEMBLY AND PREPARATION OF CAM FOR USE.

a. Assemble carrying harness to CAM:

- (1) If not already buckled, remove twists from carrying harness (1) and fasten buckle (2).
- (2) Place small handle strap (3) around forward part of handle (4); snap the end (5) of the carrying harness that contains filtered nozzle package assembly (6) to the small handle strap (3).
- (3) Place large handle strap (7) around rear section of handle (4), as shown. Snap end (8) of carrying harness to large handle strap (7).



b. Place spare sealed nozzle protective cap assembly (1) on blocks (2) inside of carrying case (3).  
**DO NOT OPEN SEALED CONTAINER.**





## 3-44. DRIFT TUBE MODULE REPLACEMENT AND ALINEMENT.

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This task covers:

Replacement of Drift Tube Module.

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### INITIAL SETUP

#### Tools

Electronic Equipment Tool Kit TK-100/G  
Clean Work Surface (3-1)  
Torque Screwdriver

#### Materials/Parts

Drift Tube Module PN 442-070  
Flexible Board Insulator PN 442-582  
Sieve (Pump) Assembly PN 442-666  
Gloves (Item 5, App D)

#### Equipment Conditions

CAM turned off, DTS turned off, and all cables disconnected from CAM.  
Monitor case assembly removed from CAM (para 3-38).  
PCB flexible wiring removed from monitor module assembly (para 3-41).  
Nozzle assembly removed (para 3-45).  
Sieve (pump) assembly removed (para 3-42).  
Pump assembly removed (para 3-46).

---

### WARNING

RADIATION HAZARD



NICKEL-63 (NI-63)

The Chemical Agent Monitor (CAM) contains a beta radiation source in the quantity which requires a Nuclear Regulatory Commission license to possess items which contain the source. The CAM contains 10 millicuries of Nickel-63.

14

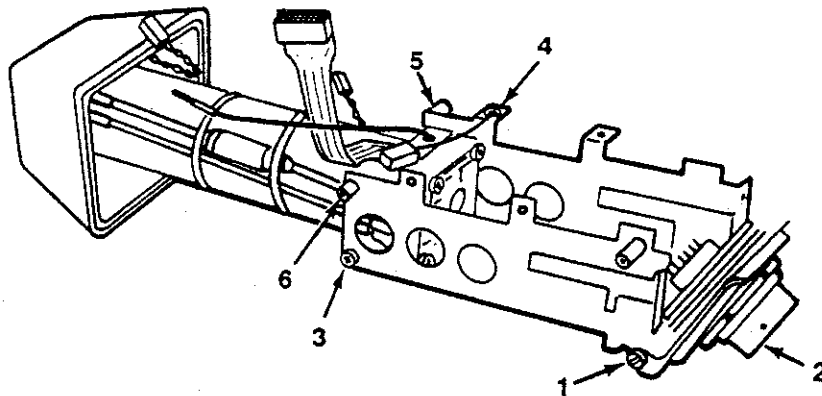
### 3-44. DRIFT TUBE MODULE REPLACEMENT AND ALINEMENT (CONT).

#### REMOVAL

#### NOTE

Sieve (pump) assembly is always replaced when drift tube module is replaced.

1. Remove two screws (1) and chassis plate connector assembly (2).
2. Remove two screws (3).
3. Remove ground cable (4) from long pillar (5).
4. Remove long pillar (5) and short pillar (6).

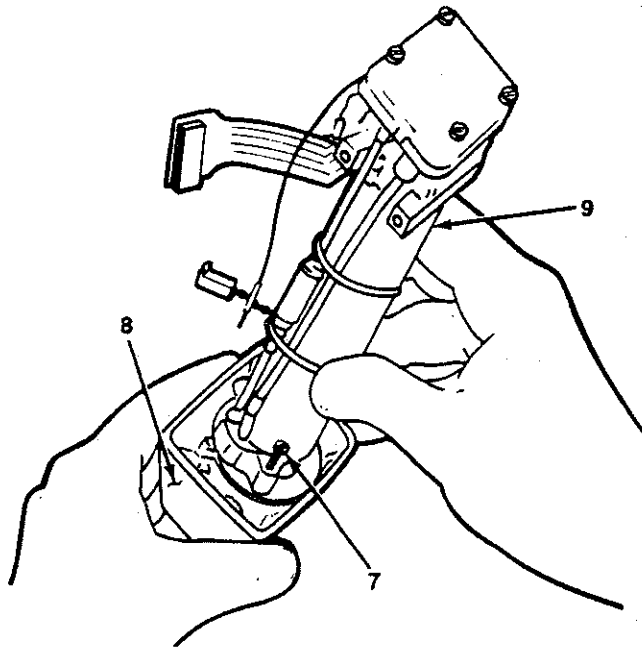


5. Back out three screws (7) from case-front end (8).

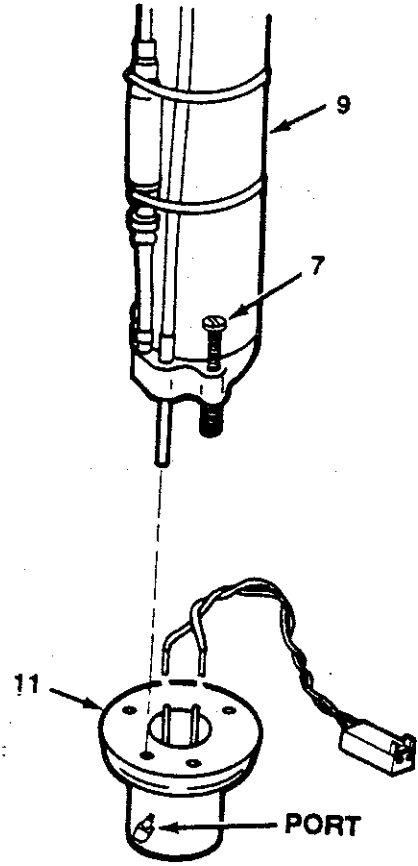
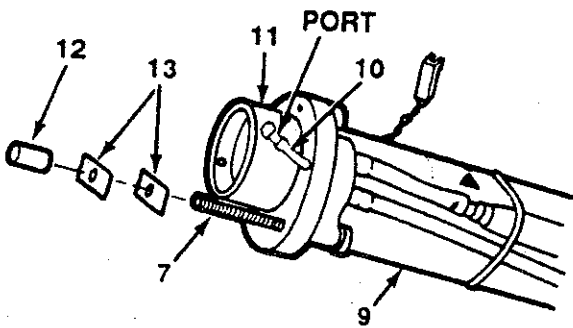
**CAUTION**

Shims are located on the screws to be removed in the next step. It is important that the same shims are returned onto the same screw position (keep CAM in alignment). Therefore, tag/mark the shims screw holes relative to each screw position as the shims are removed.

6. Pull assembly (9) from case-front end (8).



7. Gently pull exhaust (rubber) tube (10) from port.
8. While holding nozzle holder assembly (11) against assembly (9), remove shim (retaining sleeve) (12) and shim(s) (nozzle holder/front cover) (13) from screw (7). Tag/mark shims (13) as they are removed. Do this for each of three screws.
9. Hold assembly vertically, as shown (screw threads down), and carefully pull nozzle holder assembly (11) from assembly (9).
10. Remove three screws (7).
11. Package old drift tube module disc with old drift tube module, using packaging from new drift tube module.
12. Seal drift tube module package.



### 3-44. DRIFT TUBE MODULE REPLACEMENT AND ALINEMENT (CONT).

#### INSTALLATION

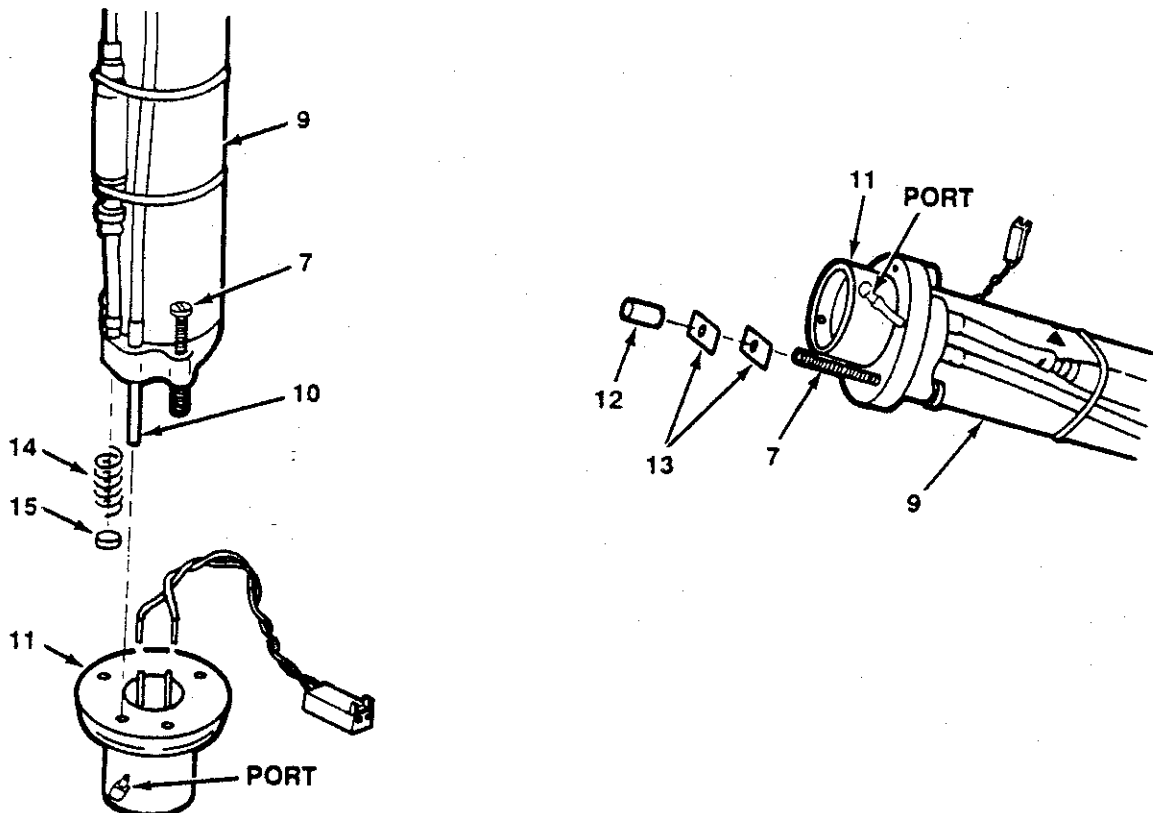
##### NOTE

Do not remove cover from over membrane or remove plugs from sieve until told to do so.

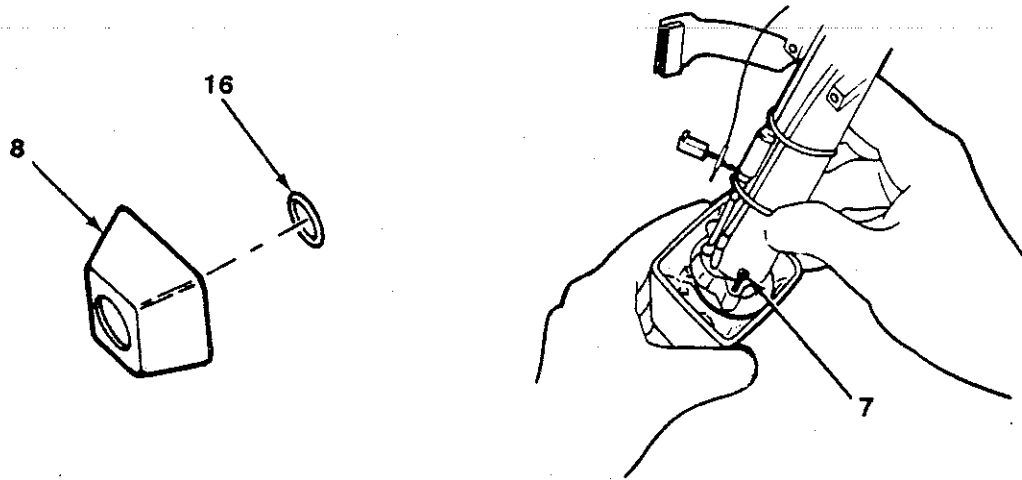
##### NOTE

Wipe test (para 3-7) must be performed after a new drift tube module is installed.

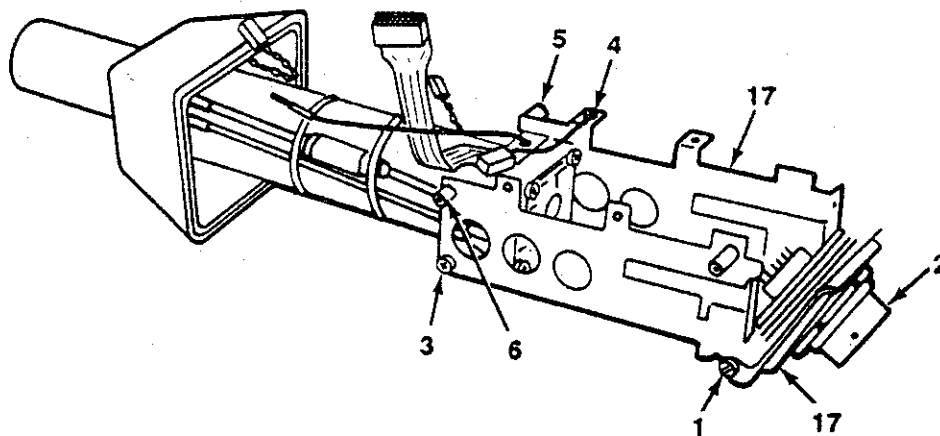
1. Remove drift tube module disc from drift tube module packaging; save disc for later installation. Remove cover from over membrane end of drift tube module. Insert three screws (7) through assembly (9).
2. Obtain new compression spring and sealing plug from bag of parts with drift tube module. (Depending on when the replacement drift tube module was produced there may or may not be a compression spring in package. If not present, it is not needed. Insert compression spring (14) if supplied and sealing plug (15) and hold in place.
3. Feed exhaust (rubber) tube (10) through nozzle holder assembly (11) and attach to port. Ensure that sealing plug (15) remains in place. Position nozzle holder assembly (11) to assembly (9) as it passes over three screws (7).
4. Place shim(s) (nozzle holder/front cover) (13) onto screws (7) in accordance to tags/marks established at disassembly. Place shim (retaining sleeves) (12) on each screw (7) to hold shims (13) in place. (In case of loss, spare shims are provided in the bag of parts with the drift tube module.)



5. Obtain new seal (holder/case) from bag of parts with drift tube module. Place seal (holder/case) (16) in groove in case-front end (8).
6. Holding drift tube module together, mate it to case-front end, as shown. Secure with three screws (7); torque to 80 oz in.
7. Ensure by visual inspection that seal (holder/case) (16) is seated and sealing correctly.



8. Install nozzle assembly (para 3-45). Install nozzle protective cap assembly.
9. Loosely attach chassis right hand and left hand assemblies (17) with two screws (3). Install long pillar (5) and short pillar (6) finger tight. Attach ground cable (4).
10. Attach chassis plate connector assembly (2) with two screws (1).
11. Ensure correct fit of screws in chassis plate connector assembly (2). Torque to 50 oz in.



## Section V. PREPARATION FOR STORAGE OR SHIPMENT

### 3-57. STORAGE.

- a. Store CAM in a secure area when unattended.
- b. Post the area with CAUTION - RADIOACTIVE MATERIAL signs as required by AR 385-30. (Yellow signs with magenta letters and radiation symbol. Sign should be at least 8 by 10 inches).
- c. Storage of a single CAM must be in a secure area; the area does not need to be marked.

### 3-58. SHIPMENT.

Refer to AR 385-11 for receiving, unloading, and movement of radioactive materials.

#### a. Packing.

- (1) Pack the CAM in the original shipping pack and overpack with a cardboard box or wooden box.

#### CAUTION

Cushioning and overpacking should be chemically clean so that no outgassing occurs. If possible include desiccant and double wrap the CAM with vapor barrier and polyethylene bag.

- (2) If the original shipping pack is not available, use available cushioning and overpack with a cardboard or wooden box.
  - (3) The Government Bill of Lading or other shipping document should be completed in accordance with 49 Code of Federal Regulations, and Army and local regulation.
- b. Instructions for shipment of any CAM marked XXX will be provided by the point of contact below:

Commander  
AMCCOM  
ATTN: AMSMC-MMN-N  
Rock Island, IL 61299-6000  
AV 793-3212  
COM (309) 782-3212

### 3-59. ACCOUNTABILITY.

Accountability will be maintained at the Property Book level. For instructions on completing transactions contact your Cell Serialization Surety Office (CSSO) in accordance with AR 710-3, Chapter 4, Section 2 for radiation tracking requirements. A transaction is required for each of the following:

- a. Inventory Loss
- b. Suspected Loss of Theft
- c. Receipt
- d. Shipment
- e. Demilitarization
- f. Wipe Test Result
- g. Removal of drift tube module from CAM.
- h. Insertion of drift tube module into CAM.

DEPOT REPAIR OF CHEMICAL AGENT MONITOR

The instructions for depot maintenance repair consist of the Direct Support maintenance manual and the following additional instructions for sieve breather replacement



## SIEVE BREATHER REPLACEMENT

### Equipment Conditions:

Monitor case assembly removed  
PCB flexible wiring assembly removed  
Sieve (pump) removed  
Pump removed

### A. Removal

1. Remove four screws on back of sieve breather assembly.
2. Pull two tubes from rubber tubes on the side of the drift tube module.
3. Pull sieve breather out of cell/sieve body. Check for an o-ring on the front of the assembly; if not attached, look inside the body for it and replace on front of cell.
4. Pull sieve breather from the cell; pry up on two gold tabs on sides if necessary.
5. Look for o-ring between sieve breather and blue section; look for three washers and springs between cell and sieve breather.

### B. Assembly

1. Place o-ring on new sieve.
2. Align three washers on springs with ports in sieve breather and push together until gold tabs on sides snap on; be sure three washers are seated properly, o-ring between sieve breather and blue piece is in place, and o-ring is on front of cell.
3. Slowly slide cell/sieve back into cell/sieve body.
4. Loosely replace four screws in back of sieve breather.
5. Fit two side tubes into rubber tubes.
6. Tighten four screws while pulling the back of the sieve breather to the side with the tubes.

## MEMBRANE REPLACEMENT

Equipment Conditions:  
Nozzle assembly removed

Tools:  
Membrane extraction tool

### A. Removal

1. Fit tip of membrane extraction tool in slots in the membrane holder.
2. Squeeze lightly on extraction tool and pull out membrane.

### B. Assembly

1. Grasp a new membrane with the extraction tool with the membrane to the outside of the CAM.
2. Insert the membrane in holder into the recess in the front of the cell and release. Be sure membrane is flush with the front of the cell.

ENCLOSURE 7

AMCCOM Radiation Protection Program

DEPARTMENT OF THE ARMY  
 HEADQUARTERS, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND  
 Rock Island, Illinois 61299-6000

AMCCOM REGULATION  
 No. 385-3

27 October 1987

Safety

RADIATION SAFETY FOR COMMODITIES

Supplementation of this regulation requires prior approval from HQ, AMCCOM (AMSMC-SFS), Rock Island, IL 61299-6000.

	Paragraph
Purpose -----	1
Applicability -----	2
Explanation of Terms -----	3
Policy -----	4
Responsibilities -----	5

1. Purpose.

This regulation establishes the Ionizing Radiation Safety Program as described in AR 385-11, AR 700-64, and AMCR 385-25.

2. Applicability.

This regulation applies to U.S. Army Armament Research, Development and Engineering Center (ARDEC); U.S. Army Chemical Research, Development and Engineering Center (CRDEC); and the following elements of Headquarters, U.S. Army Armament, Munitions and Chemical Command (HQ, AMCCOM):

- Safety Office (AMSMC-SF)
- Staff Surgeon (AMSMC-SG)
- Maintenance Directorate (AMSMC-MA)
- Matériel Management Directorate (AMSMC-MM)
- Procurement Directorate (AMSMC-PC (R))
- Production Directorate (AMSMC-PD)
- Product Assurance Directorate (AMSMC-QA)
- Weapon Systems Management Directorate (AMSMC-AS)
- International Logistics Directorate (AMSMC-IL)
- Installation Support Directorate (AMSMC-IS)
- Chief Counsel for Procurement and Readiness (AMSMC-GC (R))
- Defense Ammunition Directorate (AMSMC-DS)
- Transportation and Traffic Management Directorate (AMSMC-TM)

3. Explanation of Terms.

Definitions of technical terms in AR 385-11 and AR 700-64 will apply to this regulation.

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4. Policy.

All AMCCOM directorates and organizations involved in the procurement, storage, distribution, and use of AMCCOM radioactive commodities will ensure Nuclear Regulatory Commission (NRC) license conditions and applicable Federal, State, and Army radiation safety requirements are met for AMCCOM radioactive commodities.

5. Responsibilities.

## a. The Chief, Safety Office, HQ, AMCCOM, will:

(1) Exercise staff supervision of the AMCCOM Ionizing Radiation Safety Program.

(2) In coordination with the Procurement Directorate, Quality Assurance Directorate, and Production Directorate, prepare safety requirements to be included in the Procurement/Work Directives, solicitations, and contracts for radioactive commodities.

(3) Incorporate safety-related instructions, cautions, and warnings, based on hazards involved and regulatory requirements, into technical literature.

## b. The NRC License Manager will:

(1) Coordinate, obtain, administer, review, amend, and maintain necessary NRC licenses for radioactive commodities managed by AMCCOM.

(2) Provide information and guidance to the AMCCOM Commanding General (CG) with respect to limitations, constraints, and conditions which affect each radioactive commodity.

(3) Assure licensed material is not transferred to unauthorized persons or organizations.

(4) Chair the HQ, AMCCOM, Ionizing Radiation Control Committee (IRCC).

## c. The HQ, AMCCOM, Radiological Protection Officer (RPO) will:

(1) Provide the AMCCOM CG, the IRCC, and users of radioactive material with advice and assistance in all matters pertaining to the radioactive commodities.

(2) Implement the radiation safety program for the AMCCOM radioactive commodities.

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(3) Review existing and proposed radiological operations and procedures, field reports, test results, and surveys to ensure compliance with radiation safety regulations.

(4) Ensure the required radiation surveys are performed. The accuracy of such surveys, if performed by others, remains the responsibility of the RPO.

(5) Act as the point of contact on all matters pertaining to the NRC license and conditions imposed by the license during the life cycle of radioactive commodities.

(6) Monitor the life cycle of radioactive commodities to ensure NRC license conditions are met.

(7) Initiate the action necessary to correct any deviation from license conditions and requirements of the NRC, Department of the Army, U.S. Army Materiel Command, and AMCCOM on radioactive materials.

(8) Provide technical support for the radioactive waste program.

d. The Staff Surgeon, HQ, AMCCOM, will provide medical information concerning potential health hazards of ionizing radioactive material as used in AMCCOM commodities.

e. The Director, Maintenance Directorate, HQ, AMCCOM, will:

(1) Ensure specific instructions on handling, storing, and disposal of radioactive commodities are incorporated in the technical publications and instructions to the field.

(2) Provide training, as required, to other Army agencies for maintenance, rebuild, and rework of AMCCOM radioactive commodities.

(3) Obtain concurrence of AMCCOM RPO on above actions.

f. The Director, Materiel Management Directorate, HQ, AMCCOM, will:

Maintain records of total quantities of radioactive commodities procured.

g. The Director, Procurement Directorate, and the Director, Production Directorate, HQ, AMCCOM, will:

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(1) Ensure the contract for purchase of radioactive commodity is identified as a hazardous material contract. Ensure a preaward safety survey is performed.

(2) Ensure clauses for safety, transportation, and product assurance acceptance procedures are included in the solicitation.

(3) Ensure the technical data package and the solicitation have been coordinated with AMSMC-SF.

h. The Chief, Rad Waste Division, Safety, HQ, AMCCOM, will:

(1) Administer and keep records of the Army radioactive waste program, including radioactive material, isotope, quantity, where generated, and where and when disposed.

(2) Obtain AMSMC-TM concurrence prior to authorizing shipments of radioactive waste.

i. The Director, Product Assurance Directorate, HQ, AMCCOM, will:

(1) Provide adequate and proper inspection and test requirements for AMCCOM radioactive commodities when involved in specifications and technical Quality Assurance Provisions (QAPs).

(2) Implement the specifications and technical QAPs for AMCCOM radioactive commodities throughout the life cycle.

(3) Ensure that during acceptance inspection, the Government inspector rejects the lot of material represented by the sample if any defect is encountered regarding the radioactive material.

(4) Implement a surveillance program for verification of the integrity of the radioactive material, both in use and storage, for the entire life cycle of the radioactive commodity, with analysis performed by an independent test laboratory.

(5) Make available to the AMCCOM RPO all records of testing, inspection, and pertinent information.

j. The Commanders of ARDEC and CRDEC will provide Technical Data Packages (TDPs)/drawings and will coordinate research and development activities with the AMCCOM RPO, for systems under their management, to ensure input is provided for timely preparation of the commodity NRC licenses.

k. The Director, Weapon Systems Management Directorate, HQ, AMCCOM, will:

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(1) Coordinate and manage all activities for level II systems, as necessary, to ensure that input is provided to the AMCCOM RPO for timely preparation of NRC license applications.

(2) Provide guidance and assistance to the AMCCOM RPO regarding enforcement and compliance with NRC license conditions.

l. The Director, International Logistics Directorate, HQ, AMCCOM, will staff all foreign military sales cases involving the sale of radioactive material through the AMCCOM RPO.

m. The Director, Installation Support Directorate, HQ, AMCCOM, will provide guidance in the development of environmental documentation for NRC license applications.

n. The Chief Counsel for Procurement and Readiness, RQ, AMCCOM, will provide legal interpretations and guidance for all matters pertaining to radioactive licensing.

o. The Director, Defense Ammunition Directorate, HQ, AMCCOM, will maintain records of total quantities of radioactive commodities managed within the wholesale system, excluding level I and II managed items.

p. The Director, Transportation and Traffic Management Directorate, HQ, AMCCOM, will provide guidance on all matters concerning transportation of radioactive commodities and radioactive waste.



27 October 1987

The proponent of this publication is the E1, AMCCOM,  
Safety Office. Users are invited to send comments  
to Commander, AMCCOM, ATTN: AMSMC-SPS, Rock Island,  
IL 61299-6000.

FOR THE COMMANDER:

OFFICIAL:

LARRY D. BACHELOR  
Colonel, GS  
Chief of Staff

*David Montgomery*  
DAVID MONTGOMERY  
1LT, GS  
Adjutant

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