

RADIATION SAFETY INFORMATION BULLETIN

INSIDE THIS ISSUE:

| | |
|--|----------|
| <i>Radiation Safety Officer Conference</i> | 1 |
| <i>Featured Radiation Protection Officer: James M. Coffman</i> | 2 |
| <i>The M22 Automatic Chemical Agent Alarm (ACADA)</i> | 2 |
| <i>Summary of Contamination Action Limits</i> | 3 |
| <i>Transportation Requirements</i> | 4 |
| <i>Review of Radiation Incidents for Past 18 Months</i> | 5 |
| <i>TACOM-ACALA Radiation Training</i> | 7 |

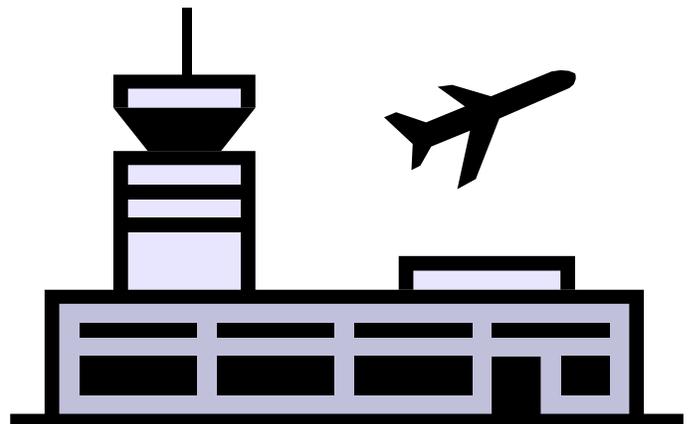
RADIATION SAFETY OFFICER CONFERENCE

Get answers to all your questions!

What?
RSO Conference
Where?
Moline, Illinois
When?
3-5 August 1999
Why?
To serve you better!
How?
Hosted by TACOM-
ACALA

For all those who wanted an opportunity to come together for frank and open discussions about the challenges facing the Army Radiation Safety Program, here is your chance.

Come hear and interact with speakers from Department of the Army, the Army Material Command, the Army Medical Command, Logistics Support Activity (LOGSA), Defense Logistics Agency (DLA) and other Army Licensees. Come and get answers to your questions about implementing license requirements. Find out how others run radiation safety programs at their installations. Find out what has worked, what has not, and where common problems exist. Participate in breakout



sessions to exchange information and pursue solutions in areas of mutual interest.

The conference will be held at the Holiday Inn conveniently located near the Airport in Moline, Illinois. The hotel is guaranteeing reservations at government rates until July 19, 1999. For reservations call (309) 762-8811 and say that you are registering for the RIA-RPO Conference to get the special rate. Rooms will also be available at the nearby Hampton Inn (309-762-1711) or the Holiday Inn Express (309-762-8300) at special rates.

We will be following this announcement with more information on the conference schedule as the

agenda is firmed up. You will be able to get up to the minute information at: <http://www-acala1.ria.army.mil/ACALA/SAFETY/index-conf.htm>. An online registration form will soon be available, or you can send your name, phone number, address and e-mail to amsta-ac-sf@ria.army.mil.

One more question...
Who can attend?

Consider this an invitation. Hope to see you there!

FEATURED RADIATION SAFETY OFFICER: JAMES M. COFFMAN

Mr. Coffman is currently the Deputy Safety Director at Fort Carson in Colorado. We are featuring Jim because of his exemplary radiation protection program. His program has survived several audits and was generally regarded by the inspectors to be "spotless."

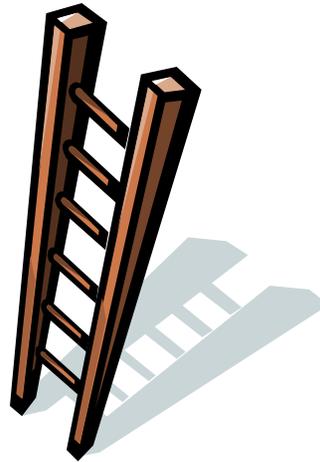
Jim's career began at the Savannah Army Depot in Northern Illinois. He went on to work at the Pueblo Chemical Depot; then assignments in Germany, Turkey, and Kuwait; and finally Fort Car-

son. Jim will be moving on to be the explosives and ammunition safety specialist with FORSCOM later this month.

Jim's wife, Sara, is currently the Safety Specialist at the Pueblo Chemical Depot. They have a 2-year-old son, Colton and live on a horse property in Pueblo West, Colorado. Jim's hobbies are horses and snake wrangling.

Jim Coffman's advice to Army Radiation Safety Officers is to plan to attend the Army RSO Con-

ference in Moline, Illinois in August where he will be one of the featured speakers.



THE M22 AUTOMATIC CHEMICAL AGENT ALARM (ACADA) IS ON ITS WAY!

The new M22 ACADA (also known as the GID-3) may be on its way to your installation. The ACADA is the replacement for the M8A1 Chemical Agent Alarm. It contains two 15-milliCurie nickle-63 sources. These are the same sources used in the Chemical Agent Monitor (CAM) housed in a single cell module. The airflow through the system is also similar to the CAM. The air coming into the ACADA does not directly contact the Ni-63 sources. The good news here is that the ACADA may be used indoors in buildings or vehicle mounted shelters with no requirement for exit port filters.

The M22 ACADA is designed with a separate M88 Chemical Agent Detector (CAD) and M42 remote alarm. This operation is similar to the M43A1 CAD and M42 Alarm of the M8A1 system. Installation RSO's should be aware that many of the same concerns for the M8A1 would still exist with the M22 ACADA. Loss of the M88 detector after it is deployed on the ground is a concern and will be a reportable event if that happens. Also the M88 sitting out by itself is subject to being run over by vehicles like the M43A1 CAD. RSO's will have to apply the same practices now used when recovering a mashed M43A1. Those are to recover the

device in a plastic bag and insure that the cell module is present. Surveying the area is problematic since Ni-63 is not readily detectable using a survey meter. Check for over all damage. Since the cell module in the ACADA is a solid block of aluminum it is likely to be recovered whole in most cases just as with the M43A1 cell module.

As with the M8A1 and CAM, the ACADA will require wipe testing annually. The exact wipe test procedures are found in TB 3-6665-321-30 "Direct Support Requirement Procedures and Handling of the Radiation Wipe Test for the M88 Chemical Agent De-

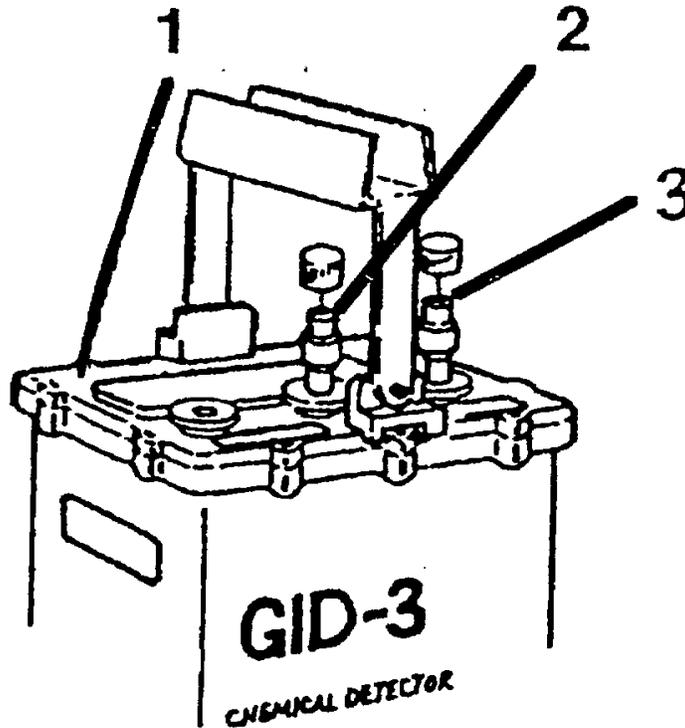
(Continued on page 3)

"Jim Coffman's advice to Army Radiation Safety Officers is to plan to attend the Army RSO Conference in Moline, Illinois in August."

(Continued from page 2)

ector" 20 May 1998. This TB was published in lieu of a Direct Support Maintenance TM because the ACADA will be repaired using interim contractor maintenance for the near future.

The wipe test points on the ACADA are (1) top surface, (2) around the Inlet and, (3) Exhaust Port in this order as shown in the diagram below. Personnel qualified to wipe test the CAM or M43A1 need no additional radiation safety training to perform this procedure.



SUMMARY OF CONTAMINATION ACTIONS LIMITS

The following table summarizes the removable contamination action limits in the Nuclear Regulatory Commission (NRC) license 12-00722-06. The footnotes cite the originating authori-

ties: i.e., Regulatory Guide, NRC license, and Code of Federal Regulations (CFR).

The limits represents the upper levels at which ac-

tion must be taken to limit access and/or decontaminate facilities/equipment. Note, however, that exposures to contamination must be kept "as low as is reasonably achiev-

"Exposures to contamination must be kept "as low as is reasonably achievable" (ALARA).

| Removable Contamination Action Limits (Disintegration per minute (dpm) per 100 cm ²) | | | |
|---|------------------|---------------------|---------------------|
| | AM-241 | H-3 | NI-63 |
| Unrestricted Areas | 20 ¹ | 1,000 ¹ | 1,000 ¹ |
| Controlled Areas | 220 ² | 10,000 ³ | 10,000 ³ |
| Radioactive Items | 20 ³ | 10,000 ³ | 1,000 ³ |
| Radioactive Pack- | 220 ⁴ | 2,200 ⁴ | 2,200 ⁴ |

Footnotes:

1. Regulatory Guide 1.86, Termination of Operating Licenses for Nuclear Reactors, June 1974, Table I. Also, Guidelines for Decontamination of Facilities

and Equipment, August 1987.

2. Regulatory Guide 8.23, Radiation Safety Surveys at Medical Institutions, January 1981, Rev. 1, Table 2.

3. License application limit (set lower than Regulatory Guide 8.23).

4. Titles 49 CFR 173.443 and 10 CFR 20.1906(d).

TRANSPORTATION REQUIREMENTS

The Army has been shipping radioactive items around the country for years. In many instances, damaged and contaminated devices have been shipped with inadequate precautions or wipe tests to ensure noncontaminated packages were sent. Now with the new Integrated Sustainment Maintenance (ISM) mission (see <http://aeps2.ria.army.mil/ssn/sustain.html>) focus is on establishment of "Centers of Excellence." This means more and more radioactive equipment will be shipped to specialized maintenance facilities or "Special Repair Activities (SRA)." Therefore, now more than ever before, hazmat employees will need to exercise due diligence to ensure shipments are not contaminated.

Several methods of ensuring cleanliness in the past have included checking tritium devices for illumination, double bagging potentially contaminated items, wiping the item instead of the package, checking annual wipe tests, and using new packaging material. The Department of Transportation (DOT) confirmed that using new packaging was in compliance with the removable contamination limits of 49 CFR 173.443 and hinted that other methods could be in compliance too -- several paragraphs of the

September 25, 1985 letter are excerpted below:

"As with many the DOT requirements, the removable contamination limits specify what must be accomplished and do not elaborate on how this must be accomplished. Given the very diverse shipping situations to which these limits apply it is desirable to allow flexibility in the manner of ensuring compliance."

"The shipper has responsibility for ensuring that every package complies with the stated limits. If a shipper utilizes methods which do not rely on ac-



tual wipe samples, such as new packaging material which is protected from on-site contamination, it is acceptable as long as it ensures compliance."

Then in 1995, the DOT amended its rules for shipping radioactive material. Prior to 1995, the rule for contamination control (49 CFR 173.443) stated: "The level of non-fixed radioactive contamination **may** be determined by wiping an area of 300 square centimeters." The wording was changed to: "The level of non-fixed radioactive

contamination may not exceed the limits set forth in Table 11 and **must** be determined by either (1) Wiping an area of 300 square centimeters... or (2) Using other methods of assessment of equal or greater efficiency..."

From the recent changes in the regulations, it looks like 49 CFR has become more rigid in specifying the steps to take in shipping packages.

A phone call was recently made to the Radioactive Materials Branch, of the Research and Special Programs Administration, DOT. They confirmed that they are still in favor of allowing a wide degree of flexibility in complying with the standard, as long as it can be justified "using other methods of assessment of equal or greater efficiency..."

(173.443(a)(2)). They specifically stated that using new packaging material and wiping the item is acceptable as long as we can ensure the package contamination are below the limits. (We plan to get this in writing.)

The caveat is that the shipper assumes a certain degree of LIABILITY. The shipper has a responsibility to ensure that the package contamination are kept "as low as reasonably achievable" (ALARA) (10 CFR

(Continued on page 5)

"Now more than ever before, hazmat employees will need to exercise due diligence to ensure shipments are not contaminated."

(Continued from page 4)
 20.1101), and below the stated limits (49 CFR 173.443). Title 10 CFR 20.1906 requires the licensee to immediately notify the Nuclear Regulatory Commission (NRC) of contaminated packages. Remember, if you ship a contaminated package, the NRC will hold you (and the Army)

accountable. The best policy stills appears to be wipe testing the item, or the package, or BOTH.

For more information on shipping radioactive material, down load our draft transportation guidelines that will soon appear in TB 43-0197 (ftp://ftpserver.ria.army.mil/Safety/TB430197/Draft/).

REVIEW OF RADIATION INCIDENTS FOR PAST 18 MONTHS

Periodically the TACOM-ACALA Safety Office conducts a review of the nature of "radiation incidents" logged with our office. Such a review was recently completed and, as always, it tends to speak volumes about the level of success the Army enjoys in managing its radioactive commodities.

Part of the continuing mission of this Safety Office is to investigate and conduct root cause analysis for every incident involving our radioactive commodities. A primary outcome of our investigative efforts is the development of trending information, which is usually quite revealing.

INCIDENTS

There have been 59 radiation incidents logged since 1 October 97 (FY98). In the first half of FY98 there were 16 inci-

dents; in the first half of FY99 just ended there were 15 incidents recorded, so the occurrence of incidents is holding steady. Annually, the average number of incidents is close to 4 per month. The majority of "incidents" occur in the second half of the fiscal

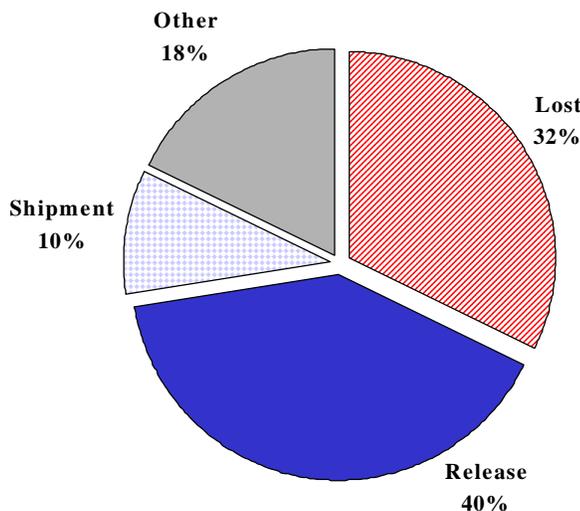
year (usually a permanent loss) of a radioactive commodity.

Another 40% of all recorded incidents involve the release of radioactive contamination to uncontrolled areas. Three cases involved the purging and over pressurization of the M1A1 Collimator. There were 5 cases involving the unexpected discovery of contaminated work areas after analysis of swipe surveys.

Another 10% were related to shipment of radioactive commodities and involved the discovery of surface contamination on external surfaces of the box or on the packaged item(s) upon receipt of the shipment.

Finally, there have been five incidents involving the unintended breakage

Almost a third of all recorded radiation incidents, involve the physical loss (usually a perma-



"Part of the continuing mission of this Safety Office is to investigate and conduct root cause analysis for every incident involving our radioactive commodities."

(Continued on page 6)

**TANK-AUTOMOTIVE AND
ARMAMENTS COMMAND,
ARMAMENT AND CHEMICAL
ACQUISITION AND LOGISTICS
ACTIVITY**

Director,
TACOM-ACALA
ATTN: AMSTA-AC-SF
Rock Island, IL 61299-7630

Phone: 309-782-6499
DSN: 793-6499
Fax: 309-782-6758
Email: amsta-ac-sf@ria.army.mil



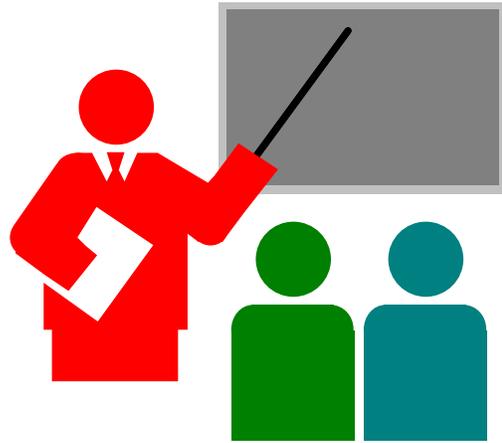
TACOM-ACALA RADIATION TRAINING

Radiation training is a requirement of the TACOM-ACALA license BML 12-00772-06. Part of the required training is for individual users and maintenance support personnel.

The user is any individual, who places in operation or operates devices containing radioactive sources. The training authorizes the user to possess, use and perform operational checks and services only.

Users of TACOM-ACALA radioactive commodities must receive initial radiation safety training, which includes safe handling procedures, biological effects and emergency procedures. Annual refresher training is also required.

Maintenance support personnel are individuals who are responsible for repairs beyond checks and services. Maintenance personnel must receive initial radiation safety training that includes safety handling procedures, survey procedures, specific hazards of isotopes in devices maintained, leak test and emergency procedures. Annual training is also required.



Training is provided through your Radiation Safety Officer (RSO). The RSO can inquire into training on TACOM-ACALA managed items by contacting the TACOM-ACALA safety office. The point of contact is Jack R. Wilhoit, DSN 793-3666, comm.

309-782-3666, e-mail: wilhoitj@ria.army.mil.

For an up to date training information, visit our website at: <http://www-acala1.ria.army.mil/ACALA/SAFETY/training.htm>.

| Radiation Training Schedule (12 April 99) | |
|---|------------------------|
| Class Dates | Location |
| 05/08-Apr-99 | RIA |
| 06/09-Apr-99 | ILNG, N. Riverside, IL |
| 13/16-Apr-99 | Ft. Drum |
| 22-Apr/08 May-99 | Korea |
| 10/12 May-99 | AZNG, Phoenix, AZ |
| 18/21 May-99 | Ft. Irwin |
| 25/28 May-99 | RIA |
| 14/18 Jun-99 | Hawaii |
| 28 Jun/09 Jul-99 | Germany |
| 03/06 Aug-99 | Ft. Lewis |
| 24/27 Aug-99 | RIA |