

# Radiation Safety Information Bulletin



## Tank-automotive and Armaments Command

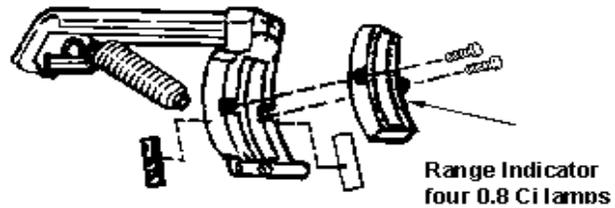
### Special points of interest:

- The first annual RSO conference was a success!
- Radioactive materials labels are not decorations.
- TACOM has licenses for more than H-3 and Chemical items.
- Help us find the missing M43A1s.

### M224 60MM MORTAR RANGE INDICATOR STILL A CHALLENGE

As the regular readers of this bulletin know, we have had some problems in the past with the M224 60MM Mortar Range Indicators. The ongoing problem involves the proper removal and replacement techniques for the range indicator. These range indicators sometimes become damaged and require replacement. The Challenge comes when the range indicator will not easily come loose from the handle assembly.

When the range indicator becomes stuck the maintainer must figure out a way to get it out of the handle without breaking the tritium vials. In general, prying with a screw driver, or punching out from the hole in the back of the handle will almost certainly break the vials. To make matters worse, maintainers often attempt to change out the range



indicators inside the confines of a poorly ventilated arms room.

To help heighten the awareness surrounding this issue we issued a Ground Precautionary Message, TACOM-ACALA GPM 99-1. This GPM informs personnel that if the range indicator becomes stuck removal must be done in a well ventilated area such as a fume hood.

Incidents involving this device continue to occur and as a result the NRC has taken notice. The Army is being cited for the latest incident that occurred,

and the penalties are sure to escalate with continued problems. The NRC considers the wording in GPM 99-01 to represent license conditions. As such anyone who willfully ignores the GPM could be pursued for criminal prosecution.

Help us and your selves out. Make sure these devices are maintained properly in a well ventilated area NOT THE ARMS ROOM.

#### NOTE

A complete list of SOUMs and GPMs can be found on the AEPS.  
<http://aeprs.ria.army.mil>

### Inside this issue:

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### NEW NRC FORM 3

Regulations require this form, "NRC Form 3-Notice to Employees: Standards for Protection Against Radiation (Part 20); Notices; Instructions and Reports to Workers; Inspections (Part 19); Employee Protection" to be prominently posted (10 CFR 19.11).

Usually the RSO insures sufficient quantities of these forms are prominently posted on the way to or from licensed activities (i.e., maintenance and storage).

This new form must be posted as soon as possible (ASAP).

It is easy to get the new NRC Form 3--if you have the right connections. Just pick up your new NRC Form 3 off the World Wide Web (WWW). Surf on over to TACOM-RI's web site: <http://www-acala1.ria.army.mil/LC/R/RS/postings.htm>. For the more adventurous,

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take the scenic route through NRC's Home Page (<http://www.nrc.gov/>), click on Index then Licensee Toolbox. Under Other Documents, you'll see the link to NRC Form 3!

But, what if you don't have WWW connections? Not to worry! We can send NRC Form

3 to you via email and/or mail. Just give us a call or drop us a line. Contact either Lois Farson or Gavin Ziegler, email: amsta-ac-sf@ria.army.mil or zieglerg@ria.army.mil, DSN 793-6499/2995, commercial (309) 782-6499/2995.

## FIRST ANNUAL RSO CONFERENCE

Thanks for Attending  
Or

Sorry If We Missed You

The Conference was a tremendous success. In reference to the Critique Sheets, the following comments were made:

- The conference was informative and great for networking

Recommendations for future topics were

- Medical Surveillance
- Ionization/Nonionization
- General Updates
- Transportation of Radioactive Material

There were numerous suggestions for the location of next

year's conference and will be taken into consideration

Look on our web site for further information and samples of briefings

We are soliciting comments and ideas on speakers, and topics for the 2nd Annual Conference. Please send any and all of your suggestions to amsta-ac-sf@ria.army.mil.

More information will be forthcoming on the next conference. We hope that we can make it an even bigger and better event than before!

THANKS AGAIN  
TO THOSE WHO HELPED!

### DO YOU HAVE ANY QUESTIONS?

We are preparing a new Frequently Asked Questions (FAQs) web page and we would like your input. Please submit any questions that you, or anyone from your installation, might have concerning the TACOM-RI radioactive materials license, the radiation protection program, the regulations, training, or general radiation safety. We need to hear from you to make this page work. Contact the TACOM-RI Safety Office to submit your question or if you need more information.



Conference Attendees From All Over the Army and the Marine Corps

## OH NO! IS THAT THING RADIOACTIVE???

This is just a reminder to not let that "Caution Radioactive Material" or "Yellow II" shipping label you use, get YOU into trouble! From time to time, we have all thought it would be cute to take one of these decals and stick it on our lunch box, desk paperweight, trash can, or the bumper of our car. Well, to those folks who do not know that your paperweight is just a paperweight, that decal can set off the alarm and result in a person thinking they may have been exposed to ra-

diation. Granted, this kind of situation ends up being a false alarm, but almost always requires an investigation to satisfy the person that they have not been exposed. Here is another example. Say you are out driving and get into a minor fender bender and Officer Friendly of the local police department spots that decal on your lunch box or vehicle. Despite what you tell him, he may have no choice but to treat this as a potential radiation incident requiring deployment of a

HAZMAT team or the like. This would create major problems and could end up with you getting a date in court. Let's not bring on ourselves any undue attention, embarrassment or heartache, PLEASE USE MARKINGS AND LABELS FOR THEIR INTENDED PURPOSE.

## RADIOACTIVE MATERIAL MANAGED BY TACOM-WARREN

TACOM–Warren is responsible for the worldwide fielding and management of the following items under Nuclear Regulatory Commission (NRC) and Army licenses (Authorizations):

License: NRC License 21-01222-05.

Item: MC-1 Soil Density Moisture Tester.

Users: Army Engineer Battalions, Brigades and Companies.

Radioactive Sources: Cesium (Cs) 137 10 mci and Americium (Am) 241 50 mci.

License: NRC License SUB 1536.

Item: M1A1 and M1A2 Heavy Armor Tanks.

Users: Army and Marine Corp.

Radioactive Source: Depleted Uranium.

License: Army Authorization A21-12-04.

Item: Radium Dials/Gauges and Cesium (Cs) 137 and Nickel 63 Igniters in vehicles.

Users: DOD

Radioactive Sources: 0.7 uci – 15 uci of Radium 226 and 5 uci of Cs 137 and Nickel 63.

License: Army Authorization A21-12-05.

Item: Combustor liner in the Abrams Tank Engine.

Users: DOD

Radioactive Source: Thorium 232 in Nickel.

The POC for the above is Mrs. Karen Lapajenko McGuire at DSN 786-7635/6121 or Commercial (810) 574-7635/6121. Fax Number is DSN 786-5277 or Commercial (810) 574-5277. E-mail address is: lapajenk@tacom.army.mil.

The TACOM-Warren Safety Of-

fice has a web page at [www.tacom.army.mil/safety](http://www.tacom.army.mil/safety), which addresses the Nuclear Regulatory Commission (NRC) licenses for the MC-1 Soil Density Tester, and DU Armored M1 Tanks. It also addresses the Army licenses (authorizations) for radium dials/gauges and cesium/nickel spark igniters in vehicles, and the thorium nickel combustor liner in the Abrams tank. The web page provides TM 5-6635-386-12&P [Unit Maintenance Manual for Tester, Density and Moisture (Soil and Asphalt) Nuclear Method, Campbell Pacific Model MC-1 (CCE)], the tester maintenance/safety/operator manual. **THE WEB PAGE WILL SOON INCLUDE SPECIAL FORM AND TYPE A PACKAGING CERTIFICATIONS FOR THE MC-1 TESTER.**

### MC-1 TESTER

**Transfer/Loan/Disposal/Mission Requirements.** Once a tester is assigned to a unit, the tester cannot be transferred/loaned or disposed of without TACOM-Warren approval. Notification of missions regarding overnight storage of the tester outside of its approved storage site must also be given to TACOM-Warren. There are information requirements needed to be fulfilled before the missions occur.

Transluminescent Dosimetry (TLD). TLDs must be exchanged out monthly and used on missions where they are OCONUS or CONUS. They are required to be used where the tester is stored or handled.

Leak Tests. The tester is required to be leak tested every six months whether or not it is in storage. Leak test

kits are provided by the US Army Aviation and Missile Command (Redstone Arsenal). Only the Redstone Arsenal is authorized to analyze leak tests of the testers. Units having the tester are responsible for contacting TACOM-Warren, when they don't receive their leak test kit.

Local Radiation Safety Officer (LRSO)/Alternate LRSO (ALRSO). The MC-1 tester requires the appointment of both a LRSO and ALRSO at the unit level possessing the tester. Please note that the LRSO used to be the Local Radiation Protection Officer (LRPO) and the ALRSO used to be the Alternate LRPO. The name changes are due to the new AR 11-9, which replaced AR 385-11. The appointed individuals must meet the training requirements of TM 5-6635-386-12&P, before being appointed in these positions. Only trained and appointed individuals can survey tester storage sites and perform leak tests on the tester. Trained operators can only leak test the tester in the absence of the LRSO/ALRSO. Trained operators cannot do storage area surveys. A LRSO/ALRSO can be both a trained operator and LRSO/ALRSO. Changes to appointments of the LRSO/ALRSOs must be provided to TACOM-Warren. This must include providing training certificates.

### HEAVY ARMOR TANKS

DU Armored tanks cannot be provided to a contractor or nonDOD facility or operation via loan/lease/GFE, etc., unless they have a NRC license for the DU or have obtained a TACOM MOA allowing coverage

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**“Once a tester is assigned to a unit, the tester cannot be transferred/loaned or disposed of without TACOM-Warren approval.”**



MC-1 TESTER

(Continued from page 3)  
for the facility/operation under TACOM's NRC license. This also includes contractor operations on Army sites.

### RADIUM DIALS/GAUGES

The guiding document is TB 43-0216; "Safety and Hazard Warnings for Operation and Maintenance of TACOM Equipment" dated Oct 90. This document is part of the Army license (Authorization). It states that radium dials/gauges must be removed from vehicles when defective; be-

fore turning vehicles into property disposal offices; or before using the vehicles for other than their intended purpose (i. e., target practice, museum display, etc.). It provides records/accountability, radiation control/safety support, procurement, operational procedures, maintenance/handling guidance, storage, transfer/shipment, disposal and emergency requirements/responsibilities. It also identifies the radium dials/gauges and igniters. This identification should be used with a radiation survey of vehicles to ensure

that all radioactive dials/gauges are identified.

### COMBUSTOR LINER

TB 43-0216 states that it is prohibited to repair combustor liners or to treat/process them physically, chemically, or metallurgically. Replacement of the liner is allowed, only if the old liner is turned in. The liner is coded in the AMDF and supply manuals to ensure that it is returned to the depot for disposal.



Radium dials and gauges

## WHAT KIND OF TRAINING DO RSOs REALLY NEED?

This is a question frequently asked. Commonly all licensees have referred to the 40 hour training courses offered by the U.S. Army Chemical School (now at Fort Leonard Wood) and the CECOM National Guard RPO course as meeting the requirement. These courses spend quite a bit of time teaching students how to do inverse square and half value shielding calculations. This is fine if you happen to have radiography equipment or reactors on your post. They are overkill in the extreme if all you deal with is tritium.

In truth it is difficult to give an absolute, one size fits all answer to the question of how much training is necessary. The reason is that there are several different NRC licensed radiation safety programs surrounding the various radioactive commodities in the field. Each program is managed by a different AMC major subordinate command.

Our TACOM-RI license addresses training for installation level RSO's as follows:

Installation RPO: The installation RPO is required to have 40 hours of formal training prior to assuming the duties.

The training includes hazards and biological effects of isotopes in the commodities located at the

installation; emergency procedures; detection and measurement of radioactivity; calculations based on measurements; and good radiation program practices for storage, monitoring, decontamination, and disposal.

Meeting those requirements is addressed as follows:

The Army's only schools for preparing installation RPO's at this time is the US Army Chemical School at Fort McClellan, Alabama or the US Army Health Service Academy at Fort Sam Houston, Texas. These are TRADOC schools with personnel trained in health physics who do the instruction. The Army also may get individuals from the Navy who have gone through that service's RPO School in Yorktown, Virginia. The U.S. Army Communication Electronics Command (CECOM), Directorate of Safety Risk Management "Radiation Protection Officer Training Course" meets the acceptable requirements for the 40 hours of formal radiation protection officer training. Finally we will accept training from civilian sources that is comparable to or exceeding the service schools based upon transcripts produced by the incumbent to the position.

This is written sufficiently broadly to allow us to accept almost any

training credential that meets or exceeds the 40 hour requirement.

The new AR 11-9 addresses required training for installation RSOs only in general terms. It does not give specific guidance because situations can be very different at different installations. The DA Radiation Safety Officer is preparing the follow-up DA PAM 11-9 that will provide more information about RSO training expectations. In the mean time the level of RSO training required is based on individual license requirements like ours above.

Our TACOM-RI commodities (tritium fire control; nickel-63 and americium-241 in chemical detectors) form a relatively low risk. Therefore, we will be asking the NRC to amend our license that would allow us to define installation RSO training in terms of subject matter only. The goal is to remove the specific requirement for 40 hours of training.

Please note that the above change has NOT yet been made to our license. Even if this change is made **the 40 hour requirement will still apply for commodity licenses that continue to require it for installation RSO's.** Most notably this includes the MC-1 Soil Moisture Density Gauge (also discussed in this issue).

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“...the level of RSO training required is based on individual license requirements ...”

## WHY DO LICENSE MANAGERS MAKE UP THESE CRAZY REQUIREMENTS?

During the first annual TACOM-RI Radiation Safety Officer Conference we were presented with outstanding information from some of the top RSOs in the Army. The U.S. Nuclear Regulatory Commission was on-hand to enlighten the attendees on its program inspection policies and procedures. Also, the Marine Corps gave a briefing on its emerging license program. However, it may have been a tour and briefing from personnel at the Cordova Nuclear Power Station that answered the question of whether the policy hoops that we go through are really directed by Federal law or are creations of fantasy from the minds of the Army's Radiation Safety Managers.

Comparably, a nuclear power station is a very controlled

place compared to the vastness and complexity of the Army. None the less, we do share the same guidelines; contamination and dose limits are the same for both industries. Remarkably Tritium is one of the nuclear industries greatest concerns when dealing with material releases. The popular misconception in some corners is that Tritium won't kill you so who cares, right? Wrong. Tritium contamination can cause equipment and supplies to become non-mission capable.

Nuclear Power and Military Commodity Management employ trained radiation safety personnel to account for every tenth of a Rad of exposure and every microCurie of material released. The tour members witnessed first hand that the expenses of hiring and training personnel, along with enacting

engineering safeguards are mandatory in our current regulatory environment.

It is true that; it's virtually impossible to receive a lethal dose of Tritium, however Tritium does pose a significant regulatory threat. The environmental impact of using or producing Tritium is almost inconsequential compared with the regulatory liability. Quite literally an MSC RSO and a nuclear power station manager have similar concerns. Whether dealing with fire control devices or supplying megawatts of electricity, when using radioactive materials the Federal laws apply uniformly and with very few exceptions.

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*Remarkably Tritium is one of the nuclear industries greatest concerns when dealing with material releases.*

## ANOTHER FRIENDLY REMINDER

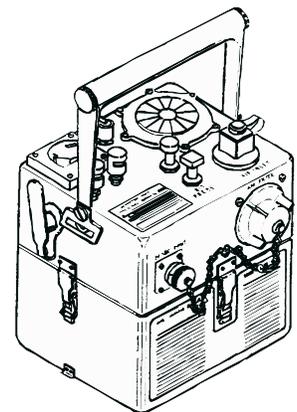
We recently received our annual visit from the NRC. The review of our program went well. There was something however that the NRC urged us to work on. That something is the loss of M43A1 Chemical Agent Alarms. We continue to get a large number of reports of lost M43A1s. This is good from the perspective that loss

of these alarms need to be reported immediately, and for this we thank you. The problem is that the M43A1s continue to get lost in the first place.

We ask you to stress to your units the importance of ensuring the same number of alarms come back after a field exercise

as those that are taken out. We understand that this is a tough issue, but we ask you to do what you can to help us improve.

THANK YOU FOR YOUR HARD WORK!



M43A1 Chemical Agent Alarm

## DO YOU HAVE A P-10 SUPPLIER?

The TACOM-RI Safety Office has acquired a Ludlum 44110 windowless tritium detection probe for incident response purposes. This probe uses P-10 gas consisting of 10% methane and 90% argon. Therefore, it is essential to have the gas readily available if we respond to an incident at

your installation. We are requesting that all installation RSOs locate the P-10 vendor nearest them. Please forward this information including telephone number to TACOM-RI, as well as, the other RSOs at the installation. This will expedite any emergency response activities resulting from a broken

tritium source or tritium contamination.

Failure to locate a supplier could result in the spread of tritium contamination and a decreased state of readiness. Most gas suppliers can get P-10, just locate the one closest to you.



**TACOM**  
*Mobility and Firepower  
for America's Army*



## Tank-automotive and Armaments Command

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**TACOM-RI SAFETY WEB**  
**WWW-ACALA1.RIA.ARMY.MIL**

**TACOM-WARREN SAFETY WEB**  
**WWW.TACOM.ARMY.MIL/SAFETY**

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### TACOM-RI RADIOACTIVE MATERIALS TRAINING COURSES

We will continue to offer radioactive materials training courses this fiscal year. The intent of the courses is to assist the Installation Radiation Safety Officer in his training duties. The courses can be tailored and are aimed at those who have regular interaction with our licensed radioactive commodities.

We will provide up to 1 weeks worth of classes at your installation free of charge on a first come first served basis until we reach our budget limit. The schedule for the year is filling up quickly so please contact us soon if you would like to take advantage of our offer.

You can see which courses are

currently scheduled by going to our web site at:

[www-acala1.ria.army.mil](http://www-acala1.ria.army.mil)

To host a course at your installation please contact Wayne Cook, or Jack Wilhoit at

319-782-2429/3666

Or DSN 793-2429/3666



#### **TB 43-0197 UPDATE IS FINISHED!**

This is the TB will implementing guidance for our license. The final draft has been sent to be officially published. In the interim, if you would like an unofficial advanced copy, one can be found on the Army Electronic Product Support network: <http://aepps.ria.army.mil>

Many thanks to all who helped comment on this project.