

## Tornado Hits Beltsville, MD Research Laboratories

On September 25, 2001 an F3 tornado swept through several buildings at the ARS' Beltsville Agricultural Research Center in Beltsville, MD. Several windows were blown in and laboratory materials, including analytical equipment and hazardous chemicals, were scattered throughout the building. Fortunately, no injuries occurred even though this happened at 5:30pm when several researchers were still in their laboratories.

The response to the incident was managed in compliance with the facility's emergency response plan. The LRPO, along with a member of the RSS, entered each building to determine if contamination from radioactive materials releases was present. No contamination was found.

As the researchers were able to occupy their laboratory areas, they performed more detailed laboratory surveys and performed a physical inventory to confirm that no materials were lost.

The Nuclear Regulatory Commission was notified by RSS of the possibility of an "unintended release" of radioactive materials to the environment prior to first entry into the damaged buildings. Later that day a



second call was made to confirm that the materials were secure. NRC issued two public information bulletins regarding the tornado and the survey efforts.

The inspections, notifications, and clean up activities proceeded with little difficulty. The safety planning, staff training, and security requirements in place prior to the incident limited the release or loss of radioactive materials.

### Lessons learned included the following:

LRPO activities are important: The LRPO (Barbara Flook) did her job prior to the tornado, making sure that the researchers were aware of security requirements and

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## RAD Safety Issues

### Liquid Scintillation Counter Storage and Disposal

Liquid Scintillation Counters (LSC) are used in research to analyze samples containing small amounts of H-3, C-14, P-32, P-33, and S-35. To determine counting efficiency, a radioactive pellet or source (usually containing a few microCuries of radioactive cesium) is mechanically placed next to the LSC vial. The radiation from the pellet is compared to a known value in the LSC computer memory to determine the counting efficiency of each vial/sample. The pellets, known as external standards, are an integral part of the LSC.

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## Tornado Continued

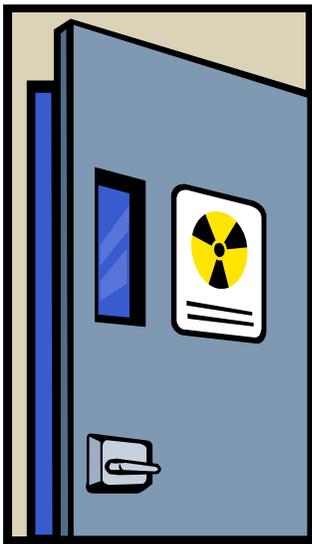
making sure that she had a working knowledge of the types and amounts of radioactive materials used in the affected buildings.

Security is essential to minimize the impact: Because radioactive materials were secured in refrigerators, freezers and behind locked cabinets, they were not impacted by the winds.

Off-site or independent back-up records are important for recovery: Power was down at the RSS office and at the LRPO's office. There was no mechanism to print inventory records, which made verification of the researcher's inventory difficult at first.



Damage to Greenhouses at BARC



## RAD Safety Issues Continued

### LSC Storage and Disposal

The sources in the LSC are "generally" licensed by the Nuclear Regulatory Commission and are exempt from some of the requirements of other radioactive materials used in USDA. Therefore, we do not require that you list the sources on your radioactive material permit or inventory. The NRC, however, requires that the sources be transferred only to other authorized individuals and not be disposed in the normal trash. It is important that you dispose of the sources properly once the LSC is no longer in use. Although they contain only small amounts of radioactive material, many solid waste disposal sites

can detect the sources as they enter their facilities.

Your Location Radiation Protection Officer should maintain an inventory of LSC's at your location. You should inform the LRPO when an LSC is no longer in use and ensure that the sources are removed prior to disposal. We also recommend that the sources be removed when an LSC is placed in "long-term" storage. Contact the LSC manufacturer (or the RSS if there is no manufacturer) who will remove the sources for a small fee.

If you have a LSC and want to dispose of it or have any questions, contact your LRPO or RSS Health Physicist.

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# Radical Chronical

## NEWS/EVENTS

### **LRPO and Irradiator Training Course - June 3-7, 2002**

The Radiation Safety Staff will present the Location Radiation Protection Officer and Irradiator Operator radiation safety courses from June 3-7, 2002 at Texas A&M University, College Station, TX. Anyone who plans to take on LRPO responsibilities or who has not had the training in more than 5 years should attend this course. Agencies can send more than one individual from a location or others who need to learn more about the radiation safety program.

The LRPO course is a 5-day course that qualifies an individual to serve as a Location Radiation Protection Officer under the USDA's radioactive materials license. All aspects of radiation use at USDA are covered including unsealed radioisotope use, electron capture detectors, nuclear gauges and hydro-probes, irradiators, electron microscopy systems, and x-ray systems.

The Irradiator Operator course qualifies an individual as an Irradiator Operator under the USDA's irradiator license.

Both courses enable individuals to coordinate the radiation safety program at their facility in accordance with the requirements of the Department's licenses issued by the U.S. Nuclear Regulatory Commission.

As with previous courses: training, lodging, meals, and local transportation costs are paid by RSS. Individuals are only required to fund their travel to and from College Station.

Contact Jack Patterson at 301-504-2445 or by e-mail at [jpatterson@rss.usda.gov](mailto:jpatterson@rss.usda.gov) if you are interested in attending this training. Space is limited and the deadline for registration is May 1, 2002.

**How to Contact The Radiation Safety Staff**

Web Site:  
[www.rss.usda.gov](http://www.rss.usda.gov)

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Fax Number:  
301-504-2450

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USDA  
Radiation Safety Staff  
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Mailstop 5510  
Beltsville, MD 20705



## Inspections Performed

The following locations have been inspected since October 1, 2001:

- APHIS - Mission, TX (Irradiator)
- APHIS - Philadelphia, PA (X-ray)
- APHIS - Cordova, TN (X-ray)
- APHIS - Newark, NJ (X-ray, Site training)
- APHIS - Riverdale, MD (X-ray)
- ARS - Oxford, MS (Source disposal assistance)
- ARS - Kerrville, TX (Unsealed RAM)

No program deficiencies were noted in these inspections.



# Radical Chronical

## Director's Corner

Sorry it's been so long since we published a **Rad-Chronicle**. As you probably know **Lori Powell** left us in October 2000 for warmer weather and brighter futures. She is the Radiation Safety Officer for the Florida Atlantic University in Boca Raton, Florida. She stopped by recently and says she is having a great time in her new job. **John Elliott** has been on an extended detail assignment that won't end very soon. The good news is we hired **Maureen Davis**, Program Assistant, who is helping to keep the office running. She is new to the Federal government and is already a vital part of our operation. We are planning to hire a **Health Physicist** (at the GS-9 or GS-11 level), so please pass the word on to potential candidates who may be interested in that position.

We are in the midst of developing the prototype for the on-line **Radiation Safety Management System**. This system will help all of us manage the records and information we need and make our radiation safety programs more effective and efficient. The Radiation Safety Staff has refined the system requirements and we

plan to review the requirements with field radiation safety personnel in early May 2002.

We started using a new vendor, **Proxtronics, Inc.**, for the film badge program about a year ago. We chose the new vendor because they have an on-line system that is easy to access. We've worked hard to improve the vendor's system and hope that one day you will be able to access it and use it.

### RAD Safety Issues Continued Security

A **Nuclear Regulatory Commission** inspector from their Atlanta, Georgia office conducted an inspection of an NRCS portable nuclear gauge facility in December 2001.

The door to the gauge storage area was not locked and the area was not secured when the inspector arrived at the facility. This is a violation of NRC's security requirements. The permit holder took immediate action to secure the gauges and will modify the storage facility and their procedures to ensure security is maintained. The NRC inspector was very satisfied

with the actions proposed by the permit holder. All other aspects of the program at the facility were in compliance with NRC requirements.

As you know, the NRC considers radioactive material security a very serious safety issue. They are considering whether a fine or other action may be necessary to ensure our compliance with this requirement. Fortunately, there have not been any gauge (or other) security violations identified in recent NRC or RSS inspections. Please think carefully about your security procedures and controls and make any improvements that might help us avoid further violations of this requirement. Please contact us if you have any questions – we will help you determine the best way to improve security at your facility.