

Report Number 001  
Month January  
Year 2003

**Welcome to the first activity report from the Savannah River Site's Radiological Technology Center (RTC).**

The RTC has come a long way since May. There are currently 37 vendors participating in the center. In order to provide our users an introduction to items currently on display, we have developed the attached set of slides. As new equipment is added, the slides will be updated. In addition, a website is currently under development.

We have tried to lay out this report in a user-friendly manner. Please let us know if you have any comments or suggestions for improvements.

**Recent Assistance and Research Items:**

The staff has been working with Facility Decontamination and Decommissioning personnel on M-Area and C-Area activities. Two HEPA vacuums have been purchased - one Nilfisk GM-625 for Building 340-M work and one VT-60 for the 105-C plastic shredder. In both cases FDD took the display units from the RTC and purchased replacements.

The RTC assisted F-Tank Farm with the selection and purchase of HEPA vacuum accessories and new Desco dustless tools and accessories for their existing tools.

The RTC assisted the Health Physics Technology Whole Body Count facility with selection and procurement of a small HEPA vacuum for their shielded chest counting rooms and research information for portable decon showers for use with the mobile counting vehicle. In addition, the Radiation Monitoring Group in HPT was assisted with a shielded collimator. A prototype was constructed of inexpensive materials and using Ecomass tungsten pellets as the shielding material.

The use of cerium nitrate as a decontamination solution is being researched for use on stainless steel. Rocky Flats has been using this material to decon gloveboxes and tanks to low enough levels that they are no longer classified as TRU waste and thus do not need to be size reduced for shipment to WIPP. We have talked with Rocky Flats, the Hanford ALARA Center and are contacting additional personnel at Rocky Flats and at Los Alamos for more information. Briefing information is available at <http://www.wpi.org/Initiatives/2002/20021002.asp> and [http://emeso.lanl.gov/useful\\_info/achievements/summaries/2002/sum9-9-02.htm](http://emeso.lanl.gov/useful_info/achievements/summaries/2002/sum9-9-02.htm). When additional information is available, a brief report about our findings will be issued.

The staff is researching filters to be used in waste bags for the Containment Fabrication Facility. Nuclear Filter sells individual filters and we will be getting samples of these to try. FYI - Nuclear Filter has opened an office in the Savannah River Research Park which will be run by Brent Dougherty who is an ex-SRS Solid Waste employee.

The RTC will be presenting a paper at the Waste Management 03 conference in Tucson in February. The Hanford ALARA Center personnel will not be attending WM'03 but will be at the January ALARA conference in Orlando. Vendor information and contacts will be gathered at each conference and shared. This type of assistance is important to both SRS and Hanford.

The RTC assisted DWPF with obtaining Bartlett PBS fixative which was used to coat the DWPF spent melter storage box prior to movement from the process building to the storage vault.

The RTC provided samples of the following Chesterton chemicals to several SRS maintenance shops: 274 Industrial Degreaser, 276 Electronic Component Cleaner, 292 Precision Degreasing Solvent, 388 Synthetic Tapping Fluid and 390 Cutting Oil. These chemicals can be used with the Chesterton Environmental Spray System (ESS). The ESS offers the convenience of an aerosol but the product cans are refillable, safe, and allow purchase of bulk chemicals while using air as the propellant. The system is cost effective and minimizes environmental and worker safety issues associated with standard aerosol products. The RTC is currently awaiting user feedback on the material and has some additional samples of other shops are interested in testing.

The RTC provided Central Labs with alternatives for shielding a drain line vent pipe near the installation site for a

personnel contamination monitor. Products suggested included Radishield lead or tungsten materials or standard lead blankets.

#### New Vendor Information, Equipment and Visits:

A variety of Taskcom1 equipment from David Fried of Comtronics has been received. The equipment has been in use in FB-Line for some time. It is inexpensive equipment that allows users to communicate via a direct connection. David has supplied a variety of headsets including a hearing protection unit. This equipment is best seen and tried rather than explained in words. Stop by and check out the equipment or contact Sean Barr at (803) 952-2710 to discuss his experiences with the equipment.

Earl Jacobson of Nuclear Power Outfitters (NPO) visited the RTC. NPO manufactures lead blankets, hanging blanket racks and frames and a variety of other shielding and radiation protection materials. Earl has left some literature and will be supplying additional information and equipment for display.

Arthur Desrosiers and David Kinsey of Bartlett Services visited the RTC for a tour and to see what additional information and/or equipment would be a good addition to the materials they currently have on display. They will be supplying information about their portable ventilation units and a display on Excel scaffolding. A demonstration Sonatol unit which was constructed under contract to DOE has also been received. We will let everyone know when we have assembled the unit and it is ready for demonstration.

A small quantity of Ecomass tungsten polymer pellets has been received. These pellets are an excellent replacement for lead shot applications.

As an additional option to the EZ Reach tools the RTC has received a set of Niptongs. Sold by Biodex, the Niptongs have a maximum grip capacity of only 1" but is a narrow tool that can fit into confined areas.

The center also has on display lead vinyl blocker sheets from Pacific Northwest X-Ray with a lead equivalence of 0.5mm which is the same as the typical lead vest. These sheets come in a variety of sizes, are coated for easy decon, are extremely effective for shielding plutonium materials and an inexpensive. They may have a variety of applications including small can shields and possibly shields for the new Handecount scalers.

In addition, the SRS representatives for two of our Radiation Monitoring Equipment vendors will be changing. Mike Shepherd of ThermoEberline is moving to another district and Terry Moore will be taking his place. Keith Doran of Canberra is leaving the company and his replacement has not yet been named. We wish Mike and Keith the best of luck in their new jobs and look forward to working with Terry.

We hope this report has been informative and worthwhile and we look forward to your input.

SRS Radiological Technology Center  
Building 315-M  
Aiken, SC 29808  
Fax (803) 725-2803  
SRS Paging System (803) 725-PAGE

Kent Rosenberger  
(803) 725-4495  
kent.rosenberger@srs.gov  
Pager #16301

Robbie Bates  
(803) 725-3935  
robbie.bates@srs.gov

Lee Smith  
(803) 725-3934  
lee.smith@srs.gov

Report Number 002  
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**Welcome to the 2nd activity report from the Savannah River Site's Radiological Technology Center (RTC) covering activities through 1/31/2003.**

Athena Freeman has joined the RTC team. She will continue her Site ALARA Coordinator duties as well as assisting the Center. Welcome Athena!

**Recent Assistance, Research Items and Tours:**

The staff has been working with Facility Decontamination and Decommissioning personnel on M-Area activities. A Nilfisk Model VT-60 HEPA vacuum has been purchased to attach to a dustless tool for scabbling concrete in 313-M. The initial focus is to determine how much concrete needs to be removed for successful decontamination. To expedite work activities, FDD was given the vacuum on display in the RTC and a replacement was ordered.

The RTC received feedback from DWPF on their use of Bartlett's Polymeric Barrier System (PBS) during the removal of the spent melter. DWPF Radiological Controls personnel used PBS on the lid of the melter storage box prior to movement from the Railroad Airlock. Rather than spend a minimum of 10 hours in elevated dose rates to decontaminate the box lid, the PBS was quickly spread to fix the contamination. The contamination levels prior to PBS application were approximately 60,000 dpm/100 cm<sup>2</sup> b-g and after 1 coat were less than 1,000 dpm/100 cm<sup>2</sup> b-g based on handheld instruments.

Members of the RTC staff visited Bluegrass Concrete Cutting to witness a demonstration of the Marcris Concrete Shaver. The shaver employs diamond impregnated blades to cut a 9.75" wide path. The resulting surface is smooth compared to conventional scabbling, the blades can cut through imbedded rebar, it cuts a uniform thickness in one pass and the shaver connects to a HEPA filtered vacuum for waste collection and elimination of airborne activity. Along with the shaver, two different Nilfisk vacuum systems were demonstrated: a CFM 3707 and a CFM 137. This equipment can have a significant impact on the decontamination of concrete surfaces. The RTC plans to write a separate trip report on the shaver in the next few weeks.

The RTC assisted F-Tank Farm with the selection and purchase of Nilfisk HEPA vacuum accessories and new Desco dustless tools and accessories for their existing tools. The purchase of a Descobrator and needle gun, as well as new vacuum attachments for the Descobrator, will allow the facility to quickly respond to contamination events to cleanup the area.

The staff is researching filters to be used by the Containment Fabrication Facility (CFF). Nuclear Filter Technology has supplied samples of one type of filter. The CFF will be testing this as an alternative filter and the RTC is still pursuing purchase of a different model of bag filter from NucFil.

The RTC is involved with modifying the way in which personal protective equipment is being used. One, lab coats with zippered closures are being procured for piloting in CLAB. The intent is to replace lab coats with deteriorating Velcro closures all across the site. Two, lab coats are being considered for more than one time use and disposal as Green-is-Clean waste. The use of lab coats is normally for operations that involve low risk activities. And, the extended use and disposal in a low risk, controlled landfill is viable. In addition, the RTC provided information to the Hanford ALARA Center relative to selecting a launderable alternative to a disposable.

Hanford ALARA Center personnel attended the ALARA conference in Orlando a few weeks ago. Information was gathered for both centers and SRS will do the same at the Waste Management '03 Symposium in February.

On the recommendation of the RTC, the 772-F Laboratory used Poxy Coat II paint as a fixative applied to a lab concrete floor to prevent seepage of contamination from under a metal track. Poxy Coat II is a one part epoxy coating that sticks to metal, plastic, wood, rubber, glass, leather, canvas, ceramic tile, concrete and paper. It resists water, acids, grease and abrasion. After application of the paint, the laboratory was downposted from a High Contamination Area/Airborne Radioactivity Area. For information about this application contact Robbie Black at (803) 952-3068.

The RTC provided input to the Waste Minimization Subcommittee that the In-situ Object Counting System (ISOCS) has

been approved as radiation monitoring equipment for site wide use for performing waste characterizations. The mobile system has the capacity to completely renovate the way the waste characterization business is conducted.

Provided assistance to the SRS Nuclear Materials Transport Department (NMTD) that wanted to see the Stagecoach low-level waste container. They need a strong tight container to enclose a pallet of four 55-gallon drums. The Stagecoach was not large enough but the CFF manufactured an acceptable 20 mil PVC container. The NMTD anticipates a need of several hundred of the containers.

The RTC provided tours for the H Closure group Maintenance management and F Tank Farm Radiological Controls personnel. In addition, two meetings of the Waste Minimization Subcommittee were hosted in 315-M.

### **New Vendor Information, Equipment and Visits:**

The new Passive Aerosol Generator (fogging machine) has been received. We will be arranging to have the onsite vendor training in the next few months. Site employees who may be using the equipment in the future should attend the training. Please contact Robbie Bates with contact names and information so that the final training details can be arranged.

John Shannon of NFS/RPS visited the RTC for a tour and discussion of potential additional display items including a display model of a MAC21D. NFS/RPS currently has a display of ventilation accessories, lead blankets and associated literature at the RTC.

Brent Daugherty of Nuclear Filter Technology also visited the RTC for a tour and discussion of potential additional display items. NucFil currently has a display of various HEPA filtered waste bags and small drum and container filters. Various bag and containment filters were also discussed for use by the CFF and samples of one filter model have been received as discussed above.

The RTC evaluated the requirement for use of the FM41 MAC21D explosion proof 400 CFM HEPA filtration unit designed for SRS. We determined that the FM 41 MAC21D is needed when used as ventilation for waste tanks and other potentially explosive environments. However, the FM41 MAC21 (\$2000 cheaper than the 21D) is adequate for most SRS applications. The RTC will recommend the MAC21 for future uses unless the particular application requires the 21D.

Charlie Smith of Nilfisk visited the RTC several times to discuss the use of the new F Tank Farm Descibrator and deliver parts for the CFM137 for use with a 55 gallon drum separator lid.

The RTC recently purchased a rolling shield door that contains 1.5 mm of lead. The door was used in hospital x-ray use and was purchased used from a shielding vendor. An SMI-51 inspection has been completed and the door may be used by FB-Line for planned work activities. The RTC will continue to watch for items such as these, which can be obtained cheaply to meet SRS mission needs.

Due to the current weather, it is worth reminding everyone that the Eliminator vests supplied by Jenkins Comfort can be used in a heating mode as well as a cooling mode. One of the available water distribution models contains a heater and will allow use of the vest in a heating mode. This is something to keep in mind for outdoor work during the winter months. The RTC has a demonstration unit available if you would like to try the vests for this application.

In addition, the SRS representatives for two of our vendors have changed. Kevin Hollingshead is the new Sherwin Williams representative and Mike Oliver is the new ThermoReax representative. We look forward to working with Kevin and Mike.

### **Useful Information**

The DOE Operating Experience Weekly Summary is a useful tool for DOE Complex Lessons Learned. Current and historical summaries can be found at <http://tis.eh.doe.gov/paa/oesummary.html>. The final summary for 2002 is attached and provides an index of all 2002 summaries and specific articles. Paper and electronic copies of the summaries from 2001 until the present are located in the RTC library as well.

The 2001 DOE and NRC Annual Dose Reports have been issued. The DOE report can be viewed or downloaded from <http://rems.eh.doe.gov/annual.htm>. The attached file contains a pictorial summary of the DOE Complex doses. The NRC report can be viewed or downloaded from <http://www.reirs.com/annual.htm>. Electronic and paper copies of the

reports are located in the RTC library as well.

The RTC and CFF will be participating in the SRS Technology Days at Fort Discovery on Tuesday February 11th and Wednesday February 12th. Tuesday evening will be open to the general public while school students will be attending during the days. Come by with your families and visit our displays if you can.

The RTC and CFF will be highlighted in a story on the February 2003 SRS Spectrum video. We hope you enjoy the video and encourage others who do not know about the Radiological Operations Support Center (ROSC) to stop by and visit.

**We hope this report has been informative and worthwhile and we look forward to your input.**

SRS Radiological Technology Center  
Building 315-M  
Aiken, SC 29808  
Fax (803) 725-2803  
SRS Paging System (803) 725-PAGE

Kent Rosenberger  
(803) 725-4495  
kent.rosenberger@srs.gov  
Pager #16301

Robbie Bates  
(803) 725-3935  
robbie.bates@srs.gov  
Pager #14550

Athena Freeman  
(803) 952-9938  
athena.freeman@srs.gov  
Pager #16551

Lee Smith  
(803) 725-3934  
lee.smith@srs.gov  
Pager #12977