

Report Number 003  
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Year 2003

**SRS Radiological Operations Support Center (ROSC)  
Radiological Technology Center (RTC)**

This is the 3rd activity report from the ROSC-RTC. This report is very late in being published and it covers an extended period of time due to the movement of Kent Rosenberger to Radiological Engineering. The activities listed are through 3/31/2003.

**Assistance, Demonstrations, Research and Tours**

The RTC sponsored a presentation of the Shonka Surface Contamination Monitor and Information Management System by Millenium Services. The presentation consisted of a talk on the technical aspects of the equipment, uses, and sample report results. Following the talk, there was a demonstration of the physical use of the equipment.

The RTC sponsored a presentation by New Millennium Nuclear Technologies (NMNT) on TruProSM Technology. When used in conjunction with portable radiometric instruments, the unique and patented sampling/characterization technology equipment produces a profile of radiological or chemical contamination through the material being studied. The bulk material samples are continuously retrieved by use of a specially designed vacuumed sample retrieval unit that prevents cross contamination of the clean retrieved samples. No circulation medium is required with this profiling process; therefore, the only by-product from drilling is the sample.

The RTC demonstrated the operation of the Marcris Concrete Shaver on a pad near building 319-M. The shaver uses diamond impregnated blades to remove concrete to a depth of 0.79 inches. The blades can cut through imbedded rebar. The resulting surface is smoothing compared to conventional scabbing. Along with the shaver, a Nilfisk vacuum systems for dust collection and elimination of airborne activity was demonstrated.

The RTC sponsored a presentation by TMR Associates on their patented VAC TRAX hydrolasing technology. The hydrolaser uses high-pressure water to remove concrete. Representatives from DTGS were also present to share information on water filtration systems used with TMR products.

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

The RTC continues to be involved with modifying the way in which personal protective equipment is being used. One, lab coats with zippered closures is being piloted in CLAB. The intent is to replace lab coats with deteriorating Velcro closures all across the site. Two, lab coats in HB Line 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.

On the recommendation of the RTC, the 772-F Laboratory used Poxo Coat II paint as a fixative applied to a lab concrete floor to prevent seepage of contamination from under a metal track. Poxo 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 the Defense Waste Processing Facility with Poxo Coat II, one-part epoxy paint used to fix contamination. A Contamination Area underneath a leaky valve was successfully rolled back to a "Fixed" Contamination Area with the application of Poxo Coat II.

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.

The RTC provided assistance to the SRS Nuclear Materials Transport Department (NMTD) with regard to the Stagecoach low-level waste container. A strong tight container to enclose a pallet of four 55-gallon drums was needed. While the Stagecoach was not large enough, the Containment Fabrication Facility personnel manufactured an acceptable 20-mil PVC container. The NMTD anticipates a need of several hundred of the containers.

The staff is providing a recommendation to relocate at least part of the containment and glovebag installation and removal training currently given in building 766-H. The ROSC in building 315-M currently has the subject matter experts on containments and glovebags used across the site. Also being considered is relocating some of ALARA Coordinator training.

The RTC provided FB-Line with a Nilfisk GM80 HEPA Vacuum to use for glove bag air filtration. The RTC floor display was used to expedite work and a replacement was ordered.

The RTC provided Z-Area Saltstone Facility with a sample of Radishield for possible shielding application on the top of a metal floor grading.

The RTC provided SAI Helium Bubble Generator training to personnel for an air migration study in Tritium Facility. Since the size of the room was so large (118,800 ft<sup>3</sup>) a double output generator would have worked better than the single output generator owned by the RTC.

A representative from the RTC meet with personnel from Central Laboratory in F-Area concerning possible deactivation of six laboratory modules in 772-F. The use of cerium nitrate was shared with the group as a plutonium decontamination agent.

The RTC provided the Savannah River Technology Center with a Sonatol Decontamination System for special project. The use of this system saved \$114,000, which would have been spent to procure a comparable system.

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

The RTC purchased an Encapsulation Technology Passive Aerosol Generator (PAG), that is now available for site use. The PAG creates and slowly introduces an aerosol of organic material into an area (such as a room, glove box, or a ventilation duct). The aerosol encapsulates contamination and prevents resuspension of contaminants. Training has been provided to a select population of SRS personnel.

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. Ventilation accessories include a MAC-21D Explosion Proof 400 CFM HEPA filtration unit and GU11 Drum Hood for a 55 gallon drum.

The RTC evaluated the requirement for use of the FM41 MAC21D explosion proof 400 CFM HEPA filtration unit designed for SRS. It was 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.

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.

The RTC has received a Small Articles Monitor, SAM11LE. The low-level gamma monitor for Am241, Pu and HEU measures fixed and transferable, internal and external contamination simultaneously. Six detectors give virtually 4-pi coverage. Terry Moore with Thermo-Electron Corporation will be providing future assistance.

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.

A remote monitoring system was received from Industrial Video Systems Incorporated for display. The camera features a high-resolution, high fidelity color and a precision high-speed auto focus zoom lens for improved low light performance.

The RTC received a five-gallon pail of 3M Fire Dam Spray that can be used as a contamination fixative. Samples painted on concrete and inside metal pipe are on display. The spray is a flexible, water-based coating designed to control the transmission of fire, heat, and smoke before, during, and after exposure to fire.

Representatives from Defense Waste Processing Facility and the RTC met with Edwards Technical Sales to discuss process cooling water filtration needs. DWPF will have SRTC perform water sample analysis before a filtration system is determined.

### **Useful Information**

The DOE Operating Experience Weekly Summary is a useful tool for DOE Complex Lessons Learned. The final weekly summary for 2002 is attached and provides an index of specific articles.

The 2001 DOE and NRC Annual Dose Reports have been issued. 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>.

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