

From: Waggoner, Larry O
Sent: Thursday, April 20, 2006 1:18 PM
Subject: ALARA Center Activities for Week of April 17, 2006

Attachments: ESB-2001-03.pdf

Visit our Website at <http://www.hanford.gov/rl/?page=974&parent=973>

1. Two personnel from the Vit Plant visited the ALARA Center looking for assistance. They wanted a few sets of protective clothing they could use if they found any radioactivity around the Vit Plant. Gave them some disposable clothing, overshoes, hoods and a step-off pad. The PFP Plastic Shop provided a tour of their facility in case they needed anything fabricated in the future for the Vit Plant. CH2M personnel stopped and looked at the stanchions we have on display. They are looking at upgrading the stanchions and radcon rope/chain/webbing they use to establish controlled area boundaries. Sent message to INEEL, LANL and SRS to find out what they use. Forwarded this info to J. Gonzales at CH2M.

2. Forwarded info received from H. Dukes @ (803) 541-7656 on Heat Stress and Body Cooling Systems to W. Smoot of CH2M who is working on a project to improve working conditions in Tank Farms during the summer. H. Dukes and E. Hewitt from Fluor Hanford will be giving presentations on Preventing Heat Stress at the ALARA Workshop on July 18 and 19 at the Clarion Hotel. Myra Long from ORNL contacted the ALARA Center to see if any containment manufacturer sold a standard glovebag made for changing the lids on waste drums to a new vented lid. We know of no one that makes a standard glove bag but suggested she could get any commercial vendor, such as Lanc's Industries (www.lancsindustries.com) to fabricate one. Also suggested they consider using a MAC-21 HEPA filtered exhauster with a drum inspection hood attached. The flow rate across the top of the drum is ~350 fpm which will prevent any airborne contamination from getting into the worker's breathing zone. The old drum lid could be slid into a bag taped to the drum top.

The unit is sold by NFS/RPS. The drum inspection hood can be mounted directly to the MAC-21 or a separate hood connected to any HEPA filtered vent unit. They have hoods for 55 or 85 gallon drums. See www.nfsrps.com.

3. Attended the Respiratory Committee meeting. The Hanford fire department has two new air compressors for filling air bottles. The air station is now one of the largest operational units in the United States, with the primary customer being CH2M for tank farm entries. There was some discussion on the issue identified at Y-12 in SRS, with the use of two way radios at higher frequencies ~ 410 MHz that affect Bullard PAPRs equipped with a Field Effect Transistor (FET). Apparently, the higher frequency radios may cause a reduced air flow from the PAPR units. Further investigation is continuing at SRS and Hanford.

4. Received call from F. Steen at PNNL looking for breathable disposable protective clothing they could wear this summer. They have a job to recover radioactive pharmaceuticals at the University of Chicago this summer. Recommended they contact Unitech at www.unitech.ws and/or Orex at www.orex.com. Briefed salesperson from Grainger and technician from M.K.Morse Co on the tools on display at the ALARA Center. Morse has a high quality line of saws and grinders. They sell a circular saw with a cutting blade that has teeth tipped with a combination of tungsten carbide and titanium carbide. It apparently cuts different kinds of metals with ease. See www.mkmorse.com Requested they offer a saws-all blade that will cut stainless steel. He will talk to his company. Forwarded the brochures to PFP D&D personnel. Contact Grainger at 545-5065 (Tom Sassman) to obtain a brochure. Grainger will have these tools in their booth at the Health & Safety Expo on May 23 and 24 at TRAC.

5. Received call from the ALARA Coordinator at 222-S labs who was looking for a company that sells lead impregnated vinyl or rubber. They need to handle some highly radioactive Co60 liquid samples and want to reduce the chemists extremity dose. Recommended they contact Shielding International from Madras, OR who sell lead vinyl in pouches similar to the hot pads used to handle hot pans during

cooking. They could pick up the pads when they needed to handle the sample and not have to wear leaded vinyl gloves throughout the analysis. See <http://www.shieldingintl.com/> The ALARA Coordinator visited the ALARA Center and liked our display of Radishield flexible lead shielding. Gave him a small piece to try out. It will take 1/2" lead to get a half-value layer for Co60 so the Radishield may be the best choice.

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VENDOR DEMONSTRATIONS

Imaging Sensing Technology (IST) will demonstrate their line of radiation tolerant cameras and remotely operated vehicles at the Red Lion Inn in Richland on Thursday, April 27 from 11:00 to 6:00 PM. Jon Quartly, chief engineer and Mark Moeser, Account Rep will be in town all week and can meet with anyone to share ideas. See www.istimaging.com or call (509) 844-4848

FOR YOUR INFORMATION

1. Last week's ALARA Activity report discussed wiring problems with the Euroclean UZ-948 HEPA filtered vacuum cleaner. The report did not include the Electrical Safety Bulletin. It is attached to this week's report.

The Glovebox Society is meeting in San Antonio TX July 17-19. See www.gloveboxsociety.org

2. The Environmental Health section of DOE has a Document Notification Website that you can subscribe to. You will be notified when any new documents are issued in the areas of Safety, Operating Summaries, DOE Enforcement Actions, and several other subjects. You get to choose what documents you're interested in. Look at <http://www.eh.doe.gov/dns/ehdns.html> and scroll down the list of things they offer. This will provide you an email notification whenever documents in one of these categories are issued.

3. Underwriter's Laboratories has a website that can be used to search for info on whether a tool is UL listed or classified, verify a UL product use, or a product safety standard. See <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm> Underwriters is one of the Nationally Recognized Testing Labs that meet OSHA's listing requirements. See <http://www.osha.gov/dts/otpca/nrtl/index.html>

Recommendation: Below is an early announcement for the 2007 Health Physics Society Mid-Year Meeting in Knoxville, TN. The topic is on D&D and Environmental Cleanup. There is a lot to be learned at a four-day meeting like this and the presentations should provide a wealth of knowledge about tools, equipment, work practices and lessons learned. Tours of the Oak Ridge facilities are included. The vendors that specialize in D&D should be there in-mass. We encourage managers to add money in the 07 budget so their staff can attend. Anyone that goes should do at least one presentation. DOE has had a lot of success in D&D and we have learned a lot here at Hanford. This meeting is not about the scientific or medical use of radioactive material. It's about the stuff you folks do in the field everyday to clean up Hanford. The Health Physics Society wants to recognize the field Health Physicists, Rad Engineers, RCTs and Operations personnel. Here's your chance to show how Hanford is one of the leaders in getting work done. The call for papers will occur this summer for those of you that want to make a presentation. We will forward that information via this weekly activity report. Should you want to join the local Columbia Chapter of the Health Physics Society go to <http://www.hpschapters.org/columbia/> If you want to join the International Health Physics Society, contact a member or the ALARA Center. If you intend to become an active member, some companies will reimburse you for the dues.

2007 Midyear Topical Meeting - Decontamination, Decommissioning and Environmental Cleanup

January 21 - 24, 2007, Knoxville, TN

Host: [East Tennessee Chapter of the Health Physics Society](#)

Program Chair: [Jeff Chapman](#) Local Arrangement Co-Chairs: [Paul Rohwer](#) & [John Frazier](#)

LESSONS LEARNED

We have had a few calls recently concerning types of shielding materials. It reminded me that everyone might not know about the "Process Shielding" used at 222-S Labs and other Hanford facilities. Here is a description of what the Labs did to lower their dose.

Some facilities, such as 222-S labs, work with highly radioactive samples on a frequent basis. The work operations needed to analyze samples are well known and many of the analysis must be completed within a short time period. The normal installation of temporary shielding requires completing a document and obtaining approvals by several personnel, including an engineering evaluation of the weight. This takes too long to complete the paperwork to install temporary shielding so the chemists and technicians did not use temporary shielding. They used remote tools, leaded gloves or tried to reduce the time it took to handle the sample.

In order to promote the use of shielding, 222-S ALARA Coordinator created a different category called "process shielding". Process shielding was defined as the use of materials for a short time (<16 hours) to cover radioactive materials or hot spots that could result in unnecessary radiation exposure to workers. Workers at the Labs were trained to install the shielding so that the sample was not damaged during the handling and analysis of the sample. The training also included guidelines on ensuring Bremsstrahlung radiation was not created, restrictions on handling bare lead, proper installation techniques, fire protection, and the need for common sense. The amount of shielding was restricted to 50 pounds. If more than 50 pounds of shielding was required, they were required to follow the normal procedures to document the installation. The use of process shielding was restricted to work in fume hoods and on bench tops. If radioactive piping was being replaced during construction projects, process shielding was not authorized.

As a result, there was a significant reduction in dose at 222-S Labs over the first two years that process shielding was being used. Total dose dropped from about 15 Rem in 1998 to 9.3 Rem in 1999 to about 6.7 Rem in 2000. Extremity dose dropped from about 93 Rem in 1998 to 70.3 Rem in 1999 to 52 Rem in 2000. No damage occurred to any samples as a result of using the process shielding. Once personnel found how easy it was to use, they used it and reduced their radiation exposure. The ALARA Chairperson at the Lab during this period was Owen Berglund at (509) 376-9035. Since 2000, the Lab workers have continued to use process shielding to keep their dose low. In 2005, the whole body dose at the Lab was only 1.6 Rem and the extremity dose was 32.6 Rem.