From: Eby, Jerald L
Sent: Thursday, May 19, 2005 2:45 PM
Subject: ALARA Center Activities for Week of May 16, 2005

Attachments: Ergo Carrier.JPG
The Fluor Hanford ALARA Center's Web Address is: www.hanford.gov/alara/ Our thanks to Savannah River for putting on their recent ALARA Workshop. It was a great learning experience and we met with 24 vendors that sell to the nuclear industry.

1. Provided a training class on Basic Containment Installation/Certification to 3 RCTs and 3 Nuclear Process Operators from Ground Water and SWSD. The Center presently has classes, each week, scheduled through the second week of June. If any Fluor Hanford organization has a need for this class (#020729, Basic Radiological Containments), please contact Larry or Jerry at the Center. Energy Northwest returned the Bartlett Master-Pump we loaned them for their mockup training in preparation for their current outage. This peristaltic pump runs on 460 v and will lift liquid 29' and will push it another 67' vertically. It will also pump dirt, debris, sludge and rocks up to 3/4" diameter. It has an adjustable flow rate up to 132 gpm. See www.bartlettinc.com. Engineers who looked at this pump say it's better than the diaphragm pumps recently purchased and is $1,500 cheaper.

2. Forwarded the website for old Hanford photos and documents to the SWSD Radcon manager and F. Roddy of DOE. This website provides a location for information on the history of Hanford and how many of the Site buildings were constructed. Besides photos, other documents describe what happened in these buildings in the 1940-1960's. See http://www2.hanford.gov/DDRS/index.cfm/ Click on "Simple Search" and type in what info you want. For Example: type in "PUREX Tunnel" and you will see how the tunnel North of PUREX was constructed. This will also work with building numbers. This site can be a good resource during D&D to see how things were built or determine the history of buildings scheduled for D&D.

3. PFP Engineering visited the Center looking for information on a walk climbing machine. They had attended the Demo at the Center a month ago and now have interest in possibly purchasing a unit. The machine company is ICM (International Climbing Machines) web site: www.icmachines.com . The intent is to use the unit for D&D in one building at PFP and then move the machine to another, until the wheels fall off, getting maximum use of the machine. PFP OPs called and discussed a job they have size-reducing small diameter stainless steel tubing in a glove box. Original plan was to cut and cap the tubing

but they felt that if the tubing could be crimped and then cut, much time would be saved. Recommended using bolt cutters with dulled blades to crimp the tubing and then using bolt cutters with sharp blades to cut in between the crimps. Another option would be to braze metal on each side of the bolt cutter so it collapses the tubing on each side as the tubing is cut. Based on prior experience in cutting stainless steel, bolt cutters with long handles offer enough of a mechanical advantage to collapse the tubing and reduce the possibility that internal contamination will spread. It's not a perfect closure, but it may be all that's necessary. Ops will find some new tubing and try the bolt cutters.

4. INEEL ALARA Manager requested a copy of a report done by D. Mantooth and W. Knight on Document #CP-16804, Radiological Analysis of Demolition Techniques that was prepared for Building 233-S. Obtained the document from the RMIS database and emailed it to INEEL. SWSD ALARA Chairperson called wanting the latest revision of the NOC that covers the use of HEPA filtered vacuum cleaners outside radiological work facilities. Recovered DOE/RL-97-50, Rev 2 from the RMIS Database and emailed it.

5. Jerry attended a meeting on a possible revision to the NOC (Notice of Construction) for the Hanford Site Radiological Controlled Guzzler. This was the first of a couple meetings to be held by Fluor Hanford Environmental Group to address operational issues in the field and to determine a need for a revision to the existing NOC. More to come.

Larry Waggoner / Jerry Eby
Fluor Hanford ALARA Center
(509) 376-0818 / 372-8961

FOR YOUR INFORMATION

1. Provided suggestions to SWSD on use of a collector drum to collect debris without filling the HEPA filtered vacuum cleaner. The collector drum lid has two connections - one for the suction hose and the other for the hose between the vacuum cleaner and the collection drum. The system is designed so that

debris being vacuumed falls into the collector drum and the air continues to the vacuum cleaner where it passes through the HEPA filter before discharge. SWSD was concerned that if they vacuumed up some light, flighty powder it would enter the drum lid and flow directly to the other sleeve instead of falling to the bottom. On the drawing below, filter media, steel wool, or angel hair could be wrapped around the lower end of the outlet sleeve (on the right). Any powder remaining in the air stream would hit the filter media, which would strip it out of the air and it would fall to the bottom of the drum. Commercial made collector drum lids are often designed with a foam roughing filter to reduce the carry-over of material. The foam lets the air pass through but strips the particulate from the air stream.

2. At a recent visit to Oak Ridge Waggoner noticed they were transporting samples around the lab in heavy lead carriers. He described what 222-S lab had done to improve conditions at the Lab and the Oak Ridge personnel were interested in learning more. Contacted N. Kirner and V. Massie at 222-S Labs concerning the ergonomic sample holders developed by Lab personnel a few years ago. These sample holders were made from a Tungsten/plastic compound called Ecomass that has an equivalent density to lead. 12 pound Tee-handle carriers were replaced with 7 pound carriers made from Ecomass and the carriers were handled using a support bar to improve ergonomics. See attached photo. Lower dose rates to personnel resulted and the weight reduction eliminated numerous complaints from chem techs over the years concerning sore wrists after using the heavier Tee-handle carriers. Read about Ecomass at www.ecomass.com. Info on the sample holders has been forwarded to Oak Ridge.

3. Delta Protection is sending one of their "Self Fed" sets of pressurized ventilated protective suits to the ALARA Center for display. This suit has a positive air pressure that keeps it inflated so there is no path for contamination to penetrate the suit during work in highly contaminated environments. They claim a protection factor of between 20,000 to 50,000. The suit is ventilated by a pump with four HEPA filters located on the back of the suit. The vent unit can be reused; the suit is designed for "single use". Read about this at http://www.frhamsafety.com/nuclear.htm. Click on "Anti-C Encapsulating Suit" and scroll down the page.

4. The PFP plastic shop is moving into Building 2101-M down the hall from the ALARA Center on Monday. It will take a short while to get into operation but this should make it a lot easier for workers and job planners to obtain containments and other plastic products. When the shop was at PFP, personnel without security couldn't enter without a security clearance. You will now be able to take your containment sketch to the plastic shop and discuss the design with them. The shop is at least four times larger than the space they occupied at PFP and they have the latest state-of-the-art heat sealers. Plans are for an "Open House" as soon as they get completely moved in. Debit Abramson is the Plastic Shop manager (373-5508).

VENDOR DEMONSTRATIONS

Ty Finley from G/O Corp will be at the ALARA Center from 9:00 to 3:00 on ***Tuesday, May 24*** to discuss his product line. Web site: www.gocorp.com . G/O sells protective clothing, decontamination equipment, plastic sheeting, signs, tags, labels, contamination control equipment and many other products. He will be distributing a new catalog. Please pass this info to your procurement personnel.

3-M will be at the ALARA Center with several of their experts on May 31 from 9:00 to 3:00 to show the 3-M product line. This has been our most popular demo in the past and we have learned many things from these experts. For example: The 3-M rep discussed how their sanding discs were used to refurbish the canopies of jet air craft. Larry Brist, from PFP wondered whether this would work to improve visibility of old fume hood and glove box windows. After testing revealed it would work, PFP operators used the 3-M products and significantly improved their ability to see inside. This saved many thousands of dollars that it would have cost to replace these windows. So, recommend you drop by and talk to these folks. They will have samples to give away so you can test their products at your project. To get some idea on what 3-M has to offer, look at http://www.3m.com/product/index.htm Please invite others in your facility to attend this demo.

LESSONS LEARNED FROM ROCKY FLATS

Read the 2004 annual report for Rocky Flats and they have a lot to brag about. They are supposed to have the Site shutdown by the end of 2006 but are on track to complete the work by October, 2005; 15 months early. Waste shipping records revealed a waste shipment was sent off site on an average of one every seven minutes in 2004. Much of the Rad waste was shipped by railroad to the Envirocare Site in Utah. Using the railroad saved 3,000 shipments by truck. There was a great deal of asbestos in the old facilities that required special handling. They had great success in demolishing Pu facilities and some of the articles in the report described the tools they used. The following is a partial "grocery" list of the tools and ALARA Protective Measures:

- Controlled use of explosives eliminated hundreds of hours of manual demolition on buildings and smoke stacks.
- They monitored, in real-time, airborne radionuclide concentrations inside worker's supplied air-breathing suits
- Large tanks were removed through holes cut into buildings to save many hours of high hazard size-reduction work. These were shipped as low-level surface contaminated object (SCO) waste
- Thousands of square feet of concrete surface area were decontaminated using concrete shaving equipment, a BROKK remote-controlled demolition machine to knock down walls and diamond wire technology to cut thick, reinforced concrete walls. NOTE: Info on this technology can be obtained on DOE's Innovative Technology Website. See http://apps.em.doe.gov/ost/ Click on "Reports" and select the 3rd category on Innovative Technology Reports. Scroll down the list of 180 reports and read about concrete shaving, the BROKK and diamond wire cutting.
- Workers designed extension tools to remove inaccessible tracks, a forklift to peel off stainless steel flooring, and a complex metal box used to hoist heavy equipment.
- Fixatives were used to seal contamination and strict contamination controls were used during demolition.
- Implemented Radio Frequency Identification (RFID) tags at the weight scales to expedite identification and information processing of waste shipments.
- Used hydrolasing technology to decontaminate large floor and wall areas.