Fluor Hanford ALARA Center

Weekly Activity Report for October 15, 2007

Assistance, Demonstrations, Research, and Tours Provided by the Center

1. Provided a list of the websites we use to WCH Engineering. This list grows each time we discover a new source of information. See Attachment (2). CH2M personnel stopped by looking for a HEPA filter that was rated at a higher flow rate than the normal 40 CFM filters purchased from Lanc's Industries. Some CH2M glovebags are not very large and there is very little room to install multiple sleeves so they could have more than 40 CFM of makeup air. Showed them the HEPA filter used in Nilfisk vacuums that has a flow rate of at least 99 CFM. They borrowed a spare filter to show to their Rad Engineers.

2. Frham Safety will visit the ALARA Center on November 7 and display their latest safety equipment, including new protective clothing for CH2M. **Visit them between 9:00 and 3:00**. Read about Frham's equipment at www.frhamsafety.com. K Basins personnel will be demonstrating a remote RF Control Monitor in Benton City at 1:30 on October 23 at 1301 Dale Street. This is intended to be used at K Basin during demolition of the fuel pool to allow workers to spray fixative and remotely adjust the spray without exposing themselves. It is commonly used by Fire Departments to spray water on a fire. Attachment (1) is a photo of the unit used by WCH in the 300 Area to spray fixatives during demolition.

3. Met with two CH2M managers and discussed tools that would cut hydraulic hose without creating chips. They have several hoses that are inside a High Contamination area that need to be sized-reduced. Recommended several choices they could try out in a mockup. These included: hand-operated bolt cutters, rebar cutters, or chipless cutters sold by Tri-Tool. They will contact Tri-Tool and determine whether their chipless cutter that is made for cutting pipe will work on the steel reinforced hydraulic hose. The cutter has a wheel that rotates and cuts similar to a can opener. See Attachment (5) for a picture of a chipless cutter. Recommended the cutting be done in a glovebag or over a drape.

4. Taught the final class to FH and CH2M RCTs on glovebags as part of the RCT Refresher Training. WCH contacted the Center for ideas to help stabilize the 116C tank at 100 BC in place so the tank can demolished. The current plan is to add powered grout through openings at the top of the tank so that it will mix with fluid already in the tank and set. The fluid in the tank and the inside of the tank itself are contaminated. The challenge is the ensure no contamination escapes the tank while mixing the grout and tank fluid. A dust cloud is likely to occur when adding the grout. Some of the ideas being evaluated are to fog with a fixative first so you would have confidence any dust cloud would be free of contamination, mist water above the grout to avoid a dust cloud, and use ventilation to direct the dust cloud through HEPA filters.

5. Received call from the Energy Northwest Power Reactor. They are going to coil a contaminated crane cable into a waste drum and asked for advice on the best design for a ventilation scoop to hold near the cable as it is lowered into the drum. Recommended building a scoop using a box similar to a pizza box and cutting between two opposite corners in a circular motion so that it is shaped like a half-moon. Then use tape to create a narrow slit on the circular portion of the box. At the 90 degree corner, attach a funnel that has a large enough diameter to fit the vacuum cleaner or ventilation hose. Airborne radioactive material will be captured in the airstream if the velocity is ~125 fpm or greater and having a narrow slit creates greater velocity than a wider opening.

6. Received call from Columbia Basin College concerning work they intend to do using Technicium 99M in a glovebag. Recommended they contact Lanc's Industries at www.lancsindustries.com to obtain a glovebag and frame. Forwarded additional information on glovebag design.

New Process, Tools, or General ALARA Information

1. Attachment (3) is a test report done at Sandia Labs on the effectiveness of a decontamination agent manufactured by Cellular Bio-Engineering. Decon 1101 Gel was tested on Concrete, Plexiglas, Carbon Steel and Stainless Steel to see how effective it would be at removing Am241, Pu239 and Cs137.

2. Found a reportwritten by INEEL personnel that compares the performance of underwatercoatings. Read the report athttp://www.inl.gov/technicalpublications/Documents/3169797.pdf.

3. Received call fromINEL concerning tools used at Hanford to size-reduce 4-6" diameter componentsunderwater. They are interested in tooling that doesn't create bubbles and arecurrently using an arc saw. Recommended contactingChampion Rescue Tools atwww.championrescuetools.comand discussing their blade plunging cutter or scissortool.Recommended theyensure that ifhydraulic fluid leaks into their pool thefluidwill be compatible with their ion exchangers. Another possibility ismodifying their tools to make them longer so the hydraulic flud lines are notimmersed. Sent them another link to Underwater ConstructionCorpfor advice ontooling. Seehttp://www.uccdive.com/

4. Revised the list offixatives used at Hanford. Added new fixatives and a section on websites thatconcern the use of fixatives.See Attachment(6).

Decommissioning and Deactivation Activities and Information

1. DOE HQ called and wanted information on D&D work they could add to a change they were preparing to the Guide for ALARA Training for Technical Support Personnel. Provided them Attachment (4) which describes D&D work, what new skills are needed and some of the lessons we have learned.

2. Continued to work on preparations for the D&D Hotline and a D&D Website that is currently scheduled to be operational by early 2008. DOE HQ EM-23, EFCOG D&D Work Group, Florida Intl. University, DOE RL, Hanford ALARA Center and the D&D personnel from Fluor will conduct a video conference next week to update everyone and work out the details to make the Hotline and website a valuable tool.

3. The UK Nuclear Decommissioning Authority has a website that provides a great deal of information on the status of the D&D work in the United Kingdom. See http://www.nda.gov.uk/documents/search-results.cfm?c7153f6=0&c7153f4=0&c7153f5=0&c7153f3=0,90&c7153f2=0&c7153f1=0
If you are considering using explosives as a way to demolish buildings, recommend watching he Chapelcross Cooling Tower video clip. Be patient, it may take a minute for the report to

come up after clicking on the title. If you're managing a D&D Project you may get value by reading some of the other UK reports.

4. FYI At Hanford, most of the dirt and debris generated during D&Dgets disposed at the Environmental Restoration Disposal Facility (ERDF) in the 200 West Area. ERDF is a long trench about 70' deep and 1000' wide. Each day a fixative is applied over the new material that was added during the day to lock it down so that it won't be disturbed during the night and weekends by wind and rain. The fixative used is Posi-Shell, which is a cement-mortor mixture similar to stucco. It has to be applied with special equipment. It would be too expensive to use as a fixative during building demolition but works well in a landfill. If you're interested in a high-tech fixative, check http://www.landfill.com/technicalinfo.htm

Contacts

Come visit us at the Fluor Hanford ALARA Center; we are located on the Hanford site at 2101M/200E/226. We will do our best to help you with your radiological engineering, ALARA, and D&D challenges. You can also send us questions, comments, and your lessons learned via e-mail or you can contact us by phone. Contact information is below.

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ALARA Center Website: www.hanford.gov/rl/?page=974&parent=973

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