From: Eby, Jerald L
Sent: Friday, August 05, 2005 2:00 PM
Subject: FH ALARA Center Activity Report for the Week of Aug 1, 2005

Attachments: DSCF0031.JPG; DSCF0034.JPG
See our web site at a new address: http://www.hanford.gov/alara/index.cfm

1. The ALARA Center held the meeting of the Hanford Site ALARA Chairpersons. The monthly meeting is held on the first Thursday of each month at the Center, at 2:00 and is open for all facilities at Hanford. The ALARA Center has a chance to show new items/products at the ALARA Center and other information that has been forwarded to the Center from the previous month here at Hanford and other nuclear sites. A round table discussion takes place of the attendees which usually promotes some interesting discussions.

2. Received call from BHI concerning the need to calibrate some of their Radiac equipment. The PNNL calibration facility is unable to do the calibrations due to a leaking source. Recommended he contact the calibration facility at Puget Sound Naval Shipyard and provided him the phone number.

Received call from BHI concerning methods about determining the presence of liquids in piping without hot tapping. Recommended they use ultrasonic equipment sold by Krautkramer-Branson. This company has just been purchased by GE Inspection Technologies and their website is www.geinspectiontechnologies.com. Called their point of contact and they referred me to Rick Gallagher at (253) 472-8418 who is their expert on UT Inspection. UT testing is done by placing a transducer that is coated with a gel on the outside of the piping. Sound waves penetrate the piping and if there is a liquid level, the instrument readout changes when the transducer is in the exact location of the waterline.

3. Received call from an engineer at a commercial power reactor plant concerning our opinion of the CS Unitec tools. He has a stuck door in a fuel pool and needs to trim some metal 15' below the water line. Our experience to date is that these are high quality tools that should work well as long as he uses the special blades for cutting stainless steel. Discussed our experience at attaching clamps to the item and then installing the tool on the clamp. They intend to hold a pneumatic saw with an underwater manipulator. See www.csunitec.com

4. PFP personnel used the ALARA Center to accomplish mockup training on "hot tapping" piping. Hot taps are used to drain and depressurize piping prior to work on the system. Plan is to tap a drain line from the McCluskey room and install a HEPA filter. Equipment used was a "saddle" bought from the Ford Meter Box Company at http://www.fordmeterbox.com/pages/isadip.htm, a hot tap from Expansion Seal Technologies (www.expansionseal.com), and a Nuc-Fil filter. Workers practiced with the hot tap and came up with several suggestions on how to improve the work practices. See attached photo.

Received call from PFP concerning their need for a lighted video probe or bore scope they can lower 40' down a pipe and record on videotape what they see. Recommended they contact Nick Clyma at Everest VIT at www.everestvit.com.

VENDOR CORNER

1. 3M, website: www.mmm.com , PAPR Development Team visited the ALARA Center. Two member had not been at the Center previously and were give a short tour of heat stress and respiratory equipment on display at the Center.

2. Reminder that next week, August 9, 10, and 11, Tri-Tool, web site: www.tritool.com , will be here at the Center giving a four class on cutting metal. Larry is the POC for the class and can be contacted at 376-0818.

LESSONS LEARNED

The Sellafield's Pile Fuel Cladding Silo in England was filled with intermediate low-level radioactive waste until 1965 and then was shut down. Just prior to completely filling the Silo there was a problem with some deflector plates that prevented moving the waste into storage compartments. The waste filled the transfer tunnel at the top of the silo (20.85 meters above the ground). A safety audit in 1984 revealed the silo needed to be emptied and decommissioned.

Prior to removing the stored waste, British Nuclear Group Ltd had to upgrade the safety performance of the silo. This involved installing new fire protection systems, improving structural integrity, clearing waste from the transfer tunnel, and improving overall seismic performance. It was determined that disturbing the waste could proceed safely if the contents of the silo were maintained under a blanket of inert gas to prevent a risk of fire in the silo. In 2001, the silo and transfer tunnel were inerted with argon gas to a level of <2% oxygen.

The next step in preparation was to seal six charge holes in the transfer tunnel that had been used for placing the waste into the silo compartments during operation. Modifications to the facility were completed and these included new ventilation openings in the roof of each waste compartment to vent the argon. An antechamber connected to the transfer tunnel was refurbished to include new oxygen monitoring equipment and a new interlocked pressure-retaining door was installed. Workers developed a "Pokey Stick" to shove the waste back into the storage compartments. Later they developed a pole with a hydraulic cutter to chop up scaffolding and steel covers.

The installation of the charge hole sealing equipment required workers to enter the transfer tunnel where the were exposed to high radiation doses, the potential for falling into the storage compartments, and asphyxiation from the argon. Workers were dressed in supplied-air suits to accomplish this work. Mockup training was used to develop and refine procedures and emergency plans. During initial entry, workers discovered the floor was in poor condition and it was eventually painted with an epoxy paint. All holes were plugged to improve the sealing of the compartments and prevent the entry of oxygen. This allowed the transfer tunnel to be demolished and this improved the seismic conditions, which had predicted the tunnel could collapse.

Plugging the charge holes was a complex, difficult job and required all-hands support. After the plugging was complete, workers removed redundant monitoring systems, ventilation, and mechanical equipment. When prep work was complete, workers removed the tunnel roof and antechamber using a diamond drill to create openings in the roof. This allowed hydraulic crunchers to break up and remove large concrete sections of the tunnel roof. All demolition waste had to be bagged and winched down to ground level. Work on this project continues and the next problem to be solved is finding the best method to retrieve the waste.

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