

**From:** Waggoner, Larry O  
**Sent:** Thursday, July 28, 2005 12:02 PM  
**Subject:** ALARA Center Activities for Week of July 25, 2005

**Attachments:** Picture 007.jpg; Picture 017.jpg  
Visit our website at [www.hanford.gov/alara](http://www.hanford.gov/alara)

1. Provided tour of the ALARA Center to several labor officials who work for British Nuclear Group at the Sellafield Site doing D&D. Group was very interested in the tools at the ALARA Center and how we interacted with the Hanford workforce. Received call from engineer working for FFTF concerning the need for a crusher that will flatten piping up to 4" in diameter. Referred him to Mega-Tech Inc who sell the Champion Rescue Tools and have made pipe crushers in the past. Plan is to size-reduce piping from FFTF before sending to the ERDF trench for burial. Mega-tech reported they had built a 6" crusher for one company and after a weeks operation the company had saved enough money on burial costs to pay for the crusher. For info, call Jon Stouky at Mega-Tech at (336) 316-0707 or look at [www.championrescuetools.com](http://www.championrescuetools.com).

2. One facility called wanting a 4' high roll-around rack that can be used to hang temporary shielding. Recommended they contact the 327 facility which is in stand-by status or purchase one from Lanc's Industries. If you have a rack that isn't being used, contact Ed Dos Ramos at 373-5297.

3. Two PFP Engineers stopped by and discussed options for drilling multiple holes for Hilti bolts in contaminated outside walls. The contamination had been painted over. Original plan had been to accomplish the drilling in a glovebag. Showed them three options: 1) Install catch basin under the drill location and accomplish drilling while holding a HEPA filtered vacuum cleaner hose underneath the drill. Workers could operate the drill on slow speed and wear a face shield. 2) Tape a clear PVC sleeve over the drill location and tape the sleeve to the drill. The drill bit and chuck will rotate freely inside the sleeve and all debris will collect inside the sleeve. 3) Obtain a shrouded drill fixture (~\$400 from Nilfisk) that can be mounted to a drill motor and connect a HEPA filtered vacuum cleaner. Provided a sleeve that can be taped to a wall and a brochure on shrouded tools. They will present options to PFP Rad Engineering.

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

#### FOR YOUR INFORMATION

1. Received request for info on sludge stabilization from Fluor Government Services. One of the websites I gave them was <http://www.sludgestabilization.com/>, which seems to have a lot of info, Case Histories and Lessons Learned. Chapter 8 of the DOE Decommissioning Handbook is on Waste Treatment and can be found at <http://www.osti.gov/bridge/servlets/purl/10157678-yUQL4E/webviewable/10157678.pdf>.

2. The new point of contact for issues about the laundering of protective clothing is Clint Donley at 373-6560. He replaces Steve Albin who has moved to a new assignment. CH2M called wanting info on "water resistant" Tyvek protective clothing. Referred him to Jack Brown, who is the DuPont Protective Apparel expert at (360) 325-0011. DuPont makes the Tyvek material that vendors use to make protective clothing.

3. Received call from INEEL Cleanup ALARA Manager concerning deteriorating seams on containment tents erected outside. Discussed our experiences with containments that have been installed for over a year. The UV rays from the sun and wind eventually cause damage to the containments. We teach

workers to erect the tents so they hang loosely on the frame and use bungee cord. This lets them flex during windy conditions. Operators are taught to patch the containment in order to keep it certified for radiological work. Typically, we specify the containment has to last a year but we often use them for up to three years. After three years, it becomes more difficult to keep the tent in a certifiable condition.

4. PFP Ops will be practicing using Hot Taps to drain piping at the ALARA Center on the morning of August 4. They will be using the D-Series Tapping Specialty tools from Expansion Seal Technologies. See [www.expansionseal.com](http://www.expansionseal.com). Darryl Nelson from PFP stopped and discussed the upcoming work he had to strip everything from the Scrubber Cell. He wanted info on a circular saw that has two reciprocating blades. Recommended he talk to B. Lueck and read report at <http://www.osti.gov/bridge/servlets/purl/792082-CF5tb0/native/792082.pdf>. Also recommended he read about a metal cutting circulating saw at <http://www.osti.gov/bridge/servlets/purl/792085-kNrV1u/native/792085.pdf>

5. Greg Gibbons from BHI provided a copy of his power point presentation given at the HPS Annual Meeting on the Demolition of the 1304N Emergency Dump Tank and the 1300 Emergency Dump Basin at 100N. The presentation shows how misters, water hoses, foggers and a product named Rust Doctor were used to control contamination spread during the demolition of these facilities that were located along the Columbia River shoreline. Read about Rust Doctor at [www.therustdoctor.com](http://www.therustdoctor.com). When this product converted the rust to black magnetite, the loose surface contamination on the rust became fixed in the magnetite.

6. T-Plant has seven PCM-1B Portal Monitors to give away. Please contact Dave Andrews at 373-0815 if you have an interest.

7. Two photos are attached showing a new device placed on higher dose reading drums to make them obvious to workers. Using these small traffic cones has reduced the WRAP facility total dose because workers now avoid these drums. Before, they would have to read the small writing on the tag to know the dose.

8. Forwarded report on a device used to repackage TRU waste to SWSD, WRAPO, and BHI. See <http://www.osti.gov/bridge/servlets/purl/792081-n5x1TK/native/792081.pdf>

9. Visited the Washington State University/Hanford Technical Library and copied articles from Nuclear News, Nuclear Future, and Rad Waste Solutions magazines. Copies of these articles will be forwarded to Radcon Managers, ALARA Chairpersons and Key personnel in Operations. NOTE: These magazines are a great source of information about lessons learned and the work practices used throughout the nuclear industry. Subscriptions to Nuclear News and Radwaste Solutions can be obtained at <http://www.ans.org/pubs/magazines/rs/>. The subscription to Radwaste Solutions gives you the most "bang for your buck".

One of the articles was "The D&D Challenge: Reducing Risks While Producing Results. The ALARA "highlights" from this article are:

- a. Clean up at the Rocky Mountain Arsenal had a "zero dust" policy, which turned out to be a good risk-based approach to the work.
- b. Policy: "Spend your money upfront" if you're going to control your risk. "If you're going to manage risk, make sure your contractors know what they are supposed to do". Award contracts on "best value", not the low bid.
- c. At Rancho Seco, steam generators were removed and were too large to ship intact. They will be segmented into top and bottom sections using a diamond wire saw to cut the tubes and flame cutting for the shell.
- d. At Saxton, a test and training facility, D&D work is going very slow. One problem was their license prohibited any D&D activities while the plant was operating. Other reasons for their delays included soil

contamination in areas that were supposed to be clean, concrete contamination where none was expected, and contaminated equipment where it wasn't supposed to be. Under lessons learned:

- 1) Cost estimates are only as good as your assumptions,
- 2) Things will change,
- 3) An Historical site assessment should be a living document during plant operation,
- 4) Characterization should be a priority. "You can't do enough characterization",
- 5) The final status survey team should be part of cost development and review, and
- 6) "Bad news" costs more near the end of the project.

In England, they have established a Nuclear Decommissioning Authority, based on DOE's model because past projects have "run up huge bills and not achieved much".

In Canada at the Chalk River Plant, 25% of the work force is eligible to retire in the next four years. D&D of the older buildings is going to be done while these folks are still employed. A government decision on what to do with nuclear waste is due and the words "long-term management" are being used.

A second article was ["Like a Box of Chocolates, At the Hanford Burial Grounds, You Never Know What You're Gonna Get"](#). The article describes the experiences that Federal Engineers and Constructors, a sub-contractor working for Bechtel Hanford, are having uncovering old burial grounds at Hanford. The following paraphrases the major points of the article.

The bulk of the job hazards are radiological and chemical wastes created by the production processes used at Hanford. In the 1940s, plutonium production was a brand new industry that created weapons materials. Workers ran the plants around the clock and they were taught enough information to do their job and nothing more - everything they did was secret. Many materials were buried in order to keep the processes and waste streams operating.

BHI has conducted site characterization to determine the contents of the burial grounds, but it is impossible to identify everything. Known hazardous materials encountered to date are elemental mercury, lead, barium, PCBs, cadmium, lithium-aluminum alloy, aluminum cladding, palladium, cobalt, strontium, asbestos, process soils and tritium - both as a solid and as a high-activity liquid. More unknown materials are expected as more work is accomplished.

Each waste substance must be dispositioned in its own particular way, with some waste requiring segregation and/or encapsulation. Some waste sites contain colored glass, rusted paint cans, assorted scrap metal, auto parts, metal boxes (as large as 10' long X 4' wide), railroad ties, chunks of concrete and steel and other miscellaneous construction/demolition debris. Much of this material has to be size-reduced to fit standard burial containers.

Workers can expect to find waste drums filled with reactor hardware and unknown liquids, that include unknown solvents, unknown containerized solids or things characterized as uncontainerized, unknown media. There is always a chance of uncovering discolored process soil, undocumented pipelines, debris and structures.

Workers have found that each burial ground is a world to itself. Vertical concrete pipes measuring 18' long by 6' wide have been found that were filled with waste material and capped. Others are pits or vaults made from metal tanks or a simple pile of debris.

All these different materials and site configurations require different levels of protective clothing and equipment. In anticipation of encountering toxic metals, lead bricks, asbestos, or drums containing liquids. The proactive approach taken is to assume the worst possible scenario until proven "less than". Workers have encountered at least two objects that had dose rates >100 Rem/h, which were later confirmed to be pieces of nuclear fuel.

It's not to say the nuclear pioneers were careless, they simply didn't know the consequences of their work. The early workers should be commended for the cutting-edge technologies that led the world into the nuclear industry - setting standards for everyone else to follow.