

From: Waggoner, Larry O
Sent: Thursday, March 24, 2005 11:12 AM
Subject: ALARA Center Activities for Week of March 21, 2005

Attachments: Person Rem Values at Hanford.doc
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1. Taught Basic Containment Installation/Certification to six personnel that included 2 Field Work Supervisors, an RCT and 3 operators. CH2M borrowed our classroom to teach their personnel about work planning and the ALARA Management Worksheet. Provided copies of the Lanc's catalog to a U plant D&D Supervisor and a PFP Project Manager.
2. The Nilfisk Sales Rep was on Site and met with Site personnel. Soon the ALARA Center will receive one of their latest models that has a disposable bottom. Once the vacuum cleaner is full, the bottom can be disconnected and disposed of. The top section contains the motor and HEPA filter. The vacuum cleaner is designed so there should be no radioactive particles present on the newly exposed surfaces when the two sections are separated. See www.pa.nilfisk-advance.com or call Mark Ramos at (425) 349-1224, ext 107. It appears this vacuum cleaner could be filled, the bottom replaced, and work could continue without stopping to have Vent & Balance perform an aerosol leak test. In Pu facilities, this might be cheaper than buying a vacuum cleaner and discarding the whole unit when it's full. Using this model, you would keep the motor and HEPA filter and throw away the section filled with debris.
3. Briefed CH2M personnel on what fixatives are available for spraying a 20' long pipe being withdrawn from an underground opening. Plan is to spray it with a fixative using a garden sprayer as it exits the ground and then lower a sleeve to encapsulate the pipe. Recommended they use a glycerin-based product they already had in a store room. Groundwater stopped by with the same question. They are removing highly contaminated external well casing and they wanted info on a fixative that would provide a tough coating until they could get a sleeve installed. Recommended they spray Polymeric Barrier System (PBS), which is sold by Bartlett at www.bartlettinc.com.
4. The minutes from last weeks meeting on alternative controls to reduce airborne contamination within K Basin were issued. Graphs developed by Radcon were distributed to show the airborne radioactivity levels during basin work. Cost estimates revealed that SNF was paying over \$42,000 per week to wear respiratory protection in the basins. Lessons learned from Maine Yankee were reviewed and pictures were shown of a large ventilation system they installed. Ops is looking into replacing two overhead roof fans that no longer work. Three HEPA Exhauster fans that weren't being used have been started to help circulate the air. Another 1600 CFM unit is being shipped to K-East to add more air movement. Discussions with Spot Coolers is in progress to obtain a cooling unit to lower the temperature in the buildings during summer. See www.spot-coolers.com. An expert from NFS/RPS is scheduled to visit the week of March 28 and assess what it would take to get 2 air changes per hour in the basins. They will then provide a bid. Engineering will work with the expert and provide necessary info on temperatures and relative humidity. The Donaldson Company, which made the equipment used at Maine Yankee, has been contacted and asked to provide info on what portable ventilation equipment could be fabricated to solve the problems at K Basin. See www.donaldson.com/index.html Personnel are looking at another unit that was used at Building 233-S for D&D. Recommended that if testing of the air flow patterns within the basin is performed they consider using helium bubble technology instead of a smoke generator. The helium bubbles are easier to see than smoke and can be videotaped to show what's happening. See www.sageaction.com.
5. A consultant planning the handling of K Basin sludge stopped by and discussed a glove bag design that would incorporate a lead cave. Recommended he contact Lanc's Industries as they can fabricate both the cave and the glovebag. See www.lancsind.com Containers removed from the glove bag will be placed inside drums and filled with concrete. Dose rates on the outside of the waste drum will be very high. Forwarded information on Gamma-Guard shielding which are leaded-glass products that are added

to the concrete to increase its shielding effectiveness. The products are in powder or slurry form and can be added to concrete, coatings, plastics, foams, etc. The company claims that Duretec modeled these products and confirmed they can provide up to 43% additional shielding capabilities in uniform mixed cement grouting applications. They also sell Neutron-Guard shielding products. For information about these products contact Dan Grinstead of tri-E Technologies at (513) 383-8181. The company also claims that highly radioactive objects can be sprayed with a coating that contains these products. This will reduce the dose rates so the object can be handled with less dose to the worker.

6. Attended meeting with Groundwater personnel concerning contamination controls for removing highly contaminated well-casings from wells near PFP. These wells are being grouted after the casings are removed as part of the decommissioning process. Discussed the possibility of installing a containment shaped like an open-top cylinder and connecting HEPA filtered ventilation to the containment. At least three sets of gloves would permit workers to remove excess dirt and decon/surveys it was removed. The ventilation system could have a wye installed so another trunk could be used above the containment to provide localized ventilation with an intake scoop when the sections of casing were disconnected. The exhaust of the ventilation will have to be routed to a carbon-tet scrubber per IH personnel. An AJHA meeting is set up for Monday and plans will be finalized.

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FOR YOUR INFORMATION

W. Geyer, the RCT Division Head from Puget Sound Naval Shipyard visited the ALARA Center and was provided a tour of the Center and a road tour of the Site. He was especially interested in the Reactor Disposal Trench and the shrouded scabblers, nibblers, and HEPA filtered vacuum cleaners at the ALARA Center.

Received copy of a magazine called "Concrete Openings", which is published monthly by the Concrete Sawing & Drilling Association. One of the articles concerned sawing with diamond wires to cut a 14' wide tapered hole through concrete. The vendor that did the work was Cutting Edge Technologies at <http://www.cuttingedgeservices.com/> Another article describes how diamond wire is made and how it's used. Since so much of D&D work involves cutting and/or demolishing concrete, this looks like a good magazine for personnel planning D&D work. Contact the ALARA Center for a copy of the Reader Service Card to apply for a free subscription.

Each contractor doing radiological work uses a dollar-value when calculating which, of several potential approaches offers the best option to accomplish work. Often called Cost-Benefit analysis, it is a process that is used to determine the option with the minimum total cost where total cost is the sum of the monetary cost of the option and the monetary value of the collective dose. The current values used by the Hanford Contractors for a Person-Rem are attached for your information.

The latest issue of the Health Physics Journal has an article on page 297 on "Radiation Shielding Technology" written by J. Kenneth Shultis and Richard E. Faw. This 22 page report provides a historical review of the development of shielding techniques for indirectly ionizing radiation along with a summary of techniques for shielding design and analysis. This is a good read and should become a good resource document for rad engineers and health physicists. Contact any member of the Health Physics Society or the ALARA Center for a copy.

Vent & Balance personnel have told the ALARA Center that some facilities are starting to purchase HEPA filtered Vacuum cleaners made by Tiger-Vac. In the opinion of Vent & Balance, these units are well constructed and are easy to aerosol test. The ALARA Center has a model B-4 unit on display, which

draws 120 CFM. The Tiger-Vac website is <http://www.tiger-vac.com/> In reviewing this website they have lots of wet/dry, dry, explosion-proof, and nuclear grade units. If you're interested in purchasing a Tiger-Vac, call John McDonnell at (503) 363-6199 or contact NFS/RPS at www.nfsrps.com.

VENDOR DEMONSTRATIONS

Next week Intelagard Air Compressed Foam will be used to clean up a parking area near Bechtel Road in Richland. The foam can apparently be sprayed on to a surface and then recovered. Once we know the correct day, time and place we will send out a message. As we recall, this foam is fire retardant and may have future use in D&D work as a fixative.

Last week's report said that Everist Visual Inspection Technologies would be here in April. The visit has been moved up and N. Clyma will be at the ALARA Center on March 29 and 30 from 9:00 to 3:00 each day. He will be bringing the latest video scopes and tractor devices that can be used to see into underground tanks, piping and other components.

On April 4th, a wall-walking remote-controlled robot made by International Climbing Machines will be demonstrated on a concrete wall outside the ALARA Center. Tool packages are attached to the platform for scabbling, non-destructive testing, video inspections, decontamination, and surveys of walls. PFP is interested in this tool for use during D&D. See www.icmachines.com or call Sam Maggio at (607) 288-4001

LESSON LEARNED

D&D of an old decontamination facility near Kadlec hospital has been in progress and part of the work involved cutting piping up to 36" in diameter. A small contractor was awarded the bid for the work to cut the potentially contaminated piping. Small contractors typically don't have a large variety of cutting tools so accommodations may have to be made to allow them to complete the job using their tools. 4" diameter holes were cut in the top of each pipe and RCTs surveyed the internal cut areas through the open hole. Fortunately, the cut areas had no loose contamination. The contractor then used a saws-all and lots of blades to cut the piping.