

From: Waggoner, Larry O
Sent: Friday, March 31, 2006 2:22 PM
Subject: ALARA Center Activities for Week of March 20, 2006

Attachments: Revised Handout on Heat Stress March 28, 06.doc; D8 Tank Interior 3-30-06.jpg
Visit our Website at <http://www.hanford.gov/rl/?page=974&parent=973> NOTE: The ALARA Workshop will be July 18 and 19 at the Clarion Hotel in Richland. The deadline for submitting abstracts for presentations has been extended until April 15. Contact Lee Livesey at 373-1975, Owen Berglund at 376-9035 or the ALARA Center for info on the Workshop.

1. Met with W. Smoot from CH2M concerning actions that could be taken to improve working conditions in Tank Farms during the warm summer months. Showed him the technology we have on hand and he took our Camelback backpack water reservoir and samples of OREX breathable clothing. Provided copies of several documents including a new lessons learned issued by G. Ceffalo of Bechtel-Jacobs at Oak Ridge. This Lesson Learned was added to the ALARA Center Handout on Prevention of Heat Stress during Radiological Work as an Appendix. See the attachment, which is the entire handout. Forwarded additional links on Heat Stress information. See <http://apps.em.doe.gov/OST/pubs/itsrs/itsr1953.pdf>, <http://www.pp.okstate.edu/ehs/links/heat.htm>, and <http://www.osti.gov/bridge/servlets/purl/274911-DcW0Zt/webviewable/274911.pdf> Forwarded info on expandable foams and fixatives to ARES engineer, who needs a product to fill the inside of a videoprobe that will be lowered into an underground tank so that tank waste won't get inside the videoprobe.
2. WCH Radcon requested info on an asbestos encapsulant. They are considering using A-B-C Asbestos Binding Compound as a fixative for radioactive contamination. Found the product on the MSDS Database (#064434) and talked to Art Stubbs at PFP. They tried it out on concrete and it did a very good job of coating the concrete. In comparison with a mixture of Elmer's Glue and water, the Elmer's Glue mixture washed off, the A-B-C did not. A-B-C can be mixed with water at a ratio of up to 4 parts water to one part A-B-C. PFP offered to give some to WCH to try out. Forwarded report to Groundwater Radcon on Resonant Sonic Drilling. <http://www.osti.gov/bridge/servlets/purl/10109181-7jt82E/native/10109181.pdf> This technique is being used at a well site near PFP to drill under a highly contaminated crib. It is safer for the workers and creates less material that has to be disposed.
3. Taught Basic Containment Training class to two RCTs from T Plant. Met with Lancs Industries personnel and discussed containment devices they're fabricating for the burial grounds to recover corroded drums. Received call from FFTF concerning their need to reduce the size of a boundary around a Californium source they have in storage. The source container is similar to a 5-gallon bucket. They prefer not using any shielding with water. Recommend they place the source inside a 55 or 85 gallon drum and pour borated poly pellets around the source. Recommended they call either Ray-Bar or Thermo Electron and determine how effective the shielding will be. If they decide that the borated pellets are too expensive they can contact Central Premix about purchase of 2' X 2' X 6' stackable concrete "Ecology" blocks or revisit the water issue. NFS/RPS sells interlocking plastic blocks that could be filled with water, water/anti-freeze, sand, dirt, or grout. Note: later they decided they no longer needed the source so will ship it out.
4. Attended planning meeting for the ALARA Workshop on July 18 and 19. There have been 16 abstracts submitted so far and the deadline for abstracts was extended to April 15.

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FOR YOUR INFORMATION

1. At 8:00 on [April 4](#) there will be a presentation on new products that can be used to remove arsenic and mercury contamination from the soil. It's at MO-259 at HAMMER. There was supposed to be another demonstration of the spray sealant NuCap at HAMMER on April 5. It has been delayed until the end of April.
2. WCH has decided to improve their ability to capture airborne contamination generated during D&D and provide a slight negative ventilation in larger older buildings undergoing D&D by purchasing larger portable ventilation units. They are purchasing a 20,000 cfm unit made by Ionex and four 1000 cfm and six 1600 cfm units made by NFS/RPS. See <http://www.ionexres.com/> or <http://www.nfsrps.com/>. The NFS/RPS Website is a very good source of all types of ventilation fittings, hoses, demisters, spark arrestors and other accessories needed to make ventilation systems work. If you're working with portable ventilation, recommend you make the website a "favorite". Point-of Contact for NFS/RPS is J. McDonnell at (860) 884-5521.
3. If you purchased electrical equipment that wasn't tested by a Nationally Recognized Testing Lab (an OSHA requirement) you can arrange to get an inspector from Underwriters Lab by contacting Steve Stecker at 373-7715. Steve has a contract in place - All you need is a charge code. Talked to the NFS/RPS sales rep about NRTL testing. They have several units that are NRTL approved and have more units being tested. One of the new features on the 1000 cfm unit is that it can be bought with a flow rate controller that allows you to precisely adjust the flow rather than positioning a damper. This controller can also be preset at a flow rate and it will automatically adjust the flow to maintain the setting as the filter starts to plug. The development of these new features was paid for by the Department of Homeland Security. Check these out at the NFS/RPS website listed above.
4. The Electrical Facilities Contractors Group (EFCOG) was formed in 1991 by a group of DOE contractors who decided to band together and share information on lessons learned, best management practices, and new ideas and practices. They have published several "Best Practices" and two that apply to Hanford work can be found on the EFCOG website at <http://www.efcog.org/bp/p/30.htm> on use of 360 Degree Photography Implements ALARA principle and <http://www.efcog.org/bp/p/38.htm> on Worker Protection from Carbon Monoxide during Plasma Arc Cutting of Stainless Steel in a Confined Space.
5. We were able to access a video showing CH2M's work to empty underground tank C-201. We found it at the [Tri-City Herald webpage](http://www.tri-cityherald.com/tch/local/story/7574307p-7485599c.html) at <http://www.tri-cityherald.com/tch/local/story/7574307p-7485599c.html>. The new salesrep for Nilfisk-Advance Vacuum Cleaners is Jim Brazil. He can be reached at (425) 743-7053 or cell (206) 683-7720 or email jbrazil@nilfisk-advance.com. The government has a GSA contract with Nilfisk that allows us to purchase their units directly from the sales person without going through an Industrial Tool Supplier. This saves about \$300-\$400 on each vacuum cleaner.

LESSONS LEARNED

Workers at PFP began cutting access holes in stainless steel tanks using Plasma Arc Cutting Torches. See attached photo. On Tank D8, all the cuts were completed with the exception of four one inch tabs that will be cut with a saws-all. The cutting was stopped shortly after the first panel was cut due to reaching the RWP action level for airborne contamination. Industrial Hygiene observed rising levels of nitrogen dioxide, carbon monoxide, and decreasing oxygen levels inside the tank as the cutting progressed. Nitrogen dioxide levels increased outside the tank after the first panel was removed, but did not reach action levels before the job was halted due to the Derived Air Concentration action level.

Both DAC and IH readings were directly attributable to the propagation of nitrogen particulates which resulted in significant plugging of the filters on the portable tank exhaust. There was also an increase in the d/p for the primary building HEPA filters. Plan is to hold a Post-Job debriefing next week to document lessons learned. Overall the operation was successful, the work was safely performed and the controls functioned as planned. Obvious improvements will be to increase the filtration capacity of the portable

exhauster, investigate alternative gases (e.g. argon) that could generate fewer particles, and evaluate efforts needed to cut 1" tabs with hand tools on future tanks. This would increase the time between plasma cuts and breaching the tank opening. Anyone with questions should contact Jerry Johnston at (509) 373-2849.