

From: Waggoner, Larry O

Sent: Thursday, February 22, 2007 1:42 PM

Subject: ALARA Center Activities for Week of February 19, 2007

Attachments: Nutrition.pdf; Drum Ring Installer1.JPG; fixative 8.doc; Stripcoat TLC.doc

Visit our website at www.hanford.gov/rl/?page=974&parent=973 With President's Day, this was a short week. Hopefully, there is enough value here in this report. Waggoner will be on travel next week and Jerry Eby intends to return from his shoulder operation.

1. Loaned a Trumpf N-1000 nibbler belonging to Fluor to D&D personnel so they could cut up some non-contaminated material at 212-N. Forwarded info to M.Negron at SRS on the drum ring tool invented by T-Plant. The tool makes easier to remove or install the ring that secures the lid to a waste drum. See attached photo. Contact Mark Rieb at Parsons Fabrication (509) 547-7724 for more info.

2. Visited the burial ground near the Sub Pit and looked at the large containment tent erected over the 12B Burial Ground. Plan is to uncover highly radioactive drums that are positioned on their side, inside the tent. These drums are reported to have dose rates up to 80 Rem/h. A misting system is set up in the tent to suppress dust and add humidity. Plan is to spray Soil Sement fixative if they find loose contamination. In addition, workers will have Hand-held Hurricane misters made by Dynafog to control contamination at the source. See www.dynafog.com These can be purchased from Encapsulation Technologies at www.fogging.com. Received a package of DE-RAD Swipes from Forward Chemical Co in the United Kingdom. The container has an opening in the lid and you can pull out one solvent impregnated wipe at a time. This container is similar to baby-wipes for children. NOTE: *We need a facility that has tools, lab ware, or other equipment that needs to be decontaminated to test this product. Let us know if you're interested in trying out this product.* Please check out their website at www.forwardchem.com and look under "products" and the letter "D". We have sent for their MSDS.

3. At the request of S. Lamson, visited the job site at Building 212-N and was briefed on the progress to date. Workers are removing deteriorated plywood crates of radioactive components that were stored there many years ago. Many of these crates are buried in fire retardant insulation pellets and several rattlesnakes have been uncovered so far. As the weather gets warmer, the snakes will become more active. Attended an ALARA Job Review meeting on repackaging the crates and went through the procedure, AJHA, AMW and RWP. So far several crates have been uncovered and the work is proceeding with caution. Apparently, there is no record of what's inside these crates, but some have measurable dose rates. Good ALARA practices include covering adjacent areas that could become contaminated, securing new plywood over the deteriorated sections, use of fixatives, use of a videoprobe to peek inside, and the use of HexArmor cut/puncture resistant gloves for handling. Recommended they consider longer gloves made for veterinarians for those workers who may have to reach into areas where snakes may be hiding.

4. Received request from J. Hembree at INEL concerning the fixatives used at Hanford. They have some contaminated waste containers and are considering fixing the contamination before overpacking the boxes. Forwarded a list of the fixatives used at Hanford. See attachment Gave sample of TLC Stripcoat to CH2M Radcon along with info on how to use it. See Attachment Gave two glue-on sleeves and two furnace filters to CH2M Radcon at 222-S Labs so they could get more make-up air into a containment.

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FOR YOUR INFORMATION

1. Heat Stress: The attached Lesson Learned on Nutrition concerns the liquids and food eaten by firefighters fighting a fire at the Nevada Test Site. While D&D workers are not normally required to work for as long or as hard as a firefighter, the lessons learned about what liquids to drink and what food to eat could prevent a heat stress situation from occurring.

2. HEPA Filter Info: See document written by Flanders Filters if you want to learn more about HEPA filters. http://www.flanders-csc.com/Downloads/nuclear_grade_hepa_pb2016.pdf
A Change has been recently issued to HNF-RD-11183 on Personal Protection. This change adds 5 models of the HexArmor gloves to the list of pre-approved gloves. These are models 4018, 3180, 5033, 7080, and AS0195. Safety has indicated they will approve other models of the HexArmor gloves if needed.

Blue - Mid Valley Fire - Proper Nutrition for Fire Fighters

Lesson ID: 2006-NV-NTS-036 (Source: User Submitted)

Originator: Dr. Robert Allen, Director, Operational/Tactical Medicine (702) 295-7212; Davida Matthews, Emergency Services and Operations Support Division Manager, Chief Fauerbach

Date: 2/7/2007 **Contact:** Doris Burnett (702) 295-5580

Classifier: Greg Spencer **Reviewer:** Greg Spencer

Statement: Wildland firefighting in desert conditions, with triple digit temperatures, requires special consideration for hydration and nutrition.

Discussion: Lightning strikes on July 4, 2006, caused a wildland fire in the Mid Valley area of the Nevada Test Site (NTS). Because of the rugged terrain and inaccessibility to areas of the fire, assistance in fighting the blaze was requested from the Bureau of Land Management (BLM), per an agreement between BLM and the National Nuclear Security Administration Nevada Site Office.

Ground assistance arrived on July 5, 2006, in the form of two 20-member Hot Shot crews. In addition, day shift NTS Fire and Rescue staff members were used to support aviation operations and off duty firefighters were recalled back to duty. In all, the efforts of approximately 70 fire professionals were brought to bear on the fire response, working in temperatures that ranged from 90-110 degrees.

The Occupational Medicine Department deployed a physician forward to the Incident Command Post to assist with performing medical baseline surveys and rehabilitation activities. Based on his observations, the following lessons learned were identified:

Analysis: Fighting fires in summer conditions will generally require that a working firefighter consume 1 to 1-1/2 liters of fluids per hour. With that amount of fluid intake, especially over several days, it is possible for serum sodium to be diluted, causing illness (dilutional hyponatremia). Consuming food with sufficient salt and using sports hydration drinks, such as Gatorade or Powerade, will help prevent dilutional hyponatremia. However, sport drinks should not be exclusively used to stay hydrated, as they contain many carbohydrates (sugars) to be absorbed rapidly. It was observed that most firefighters preferred to drink sports drinks rather than water, but a better plan would be to have the firefighters drink 1-liter of water for every 1-liter of sports drink they consume.

The doctor also noted problems with the food provided to the firefighters; it was inappropriate for high-activity situations.

Breakfasts were egg and sausage biscuits with milk and fruit juices. Lunches consisted of assorted meat sandwiches, containers of mayonnaise-based potato salad, fruit and chips. Dinners were fried chicken with mashed potatoes and gravy, chicken fingers with fries, or meat sandwiches.

A better choice for the conditions faced by the firefighters would have been food high in complex carbohydrates with some simple carbohydrates, and small amounts of fats and protein, such as peanut butter and jelly sandwiches on whole wheat bread.

Actions: The medical doctor is developing meal plans more suited to strenuous work in high temperature conditions and working with both NTS Fire and Rescue and Food Services staff

members on menu options. He is also investigating the possible use of electrolyte/carbohydrate replacement gels, the same type of sport gels used by long distance runners and bike riders, and other similar products such as nutritional/electrolytes supplements during these high-activity situations

Savings:

Keywords: NUTRITION, FIRE FIGHTERS, WILDLAND FIRES

Hazard(s): Fire / Smoke / NFPA, Natural Phenomena

ISM Code(s): Analyze Hazards, Develop / Implement Controls

Work Function(s): Fire Protection

References: N/A

Priority Descriptor: Blue / Information



Memo to Users of Stripcoat TLC

Stripcoat TLC is a great product for decontaminating spills. It is a simple, effective means of removing or preventing the spread of contamination. It can be applied with a paintbrush, roller, or paint sprayer. If you spray it, the painter usually has to put large diameter jets in the paint sprayer, as the product tends to clog, if smaller jets are used.

If your job involves work with fissile radioactive contamination you need to get approval from your Criticality Safety person before you use it. They will need to ensure that there is not enough contamination to get a critical mass. As it is stripped from the surface and placed in a waste bag, you need to make sure the waste bag will not “go critical”. Boron can be added to the Stripcoat TLC (1,000 ppm) and the Stripcoat TLC Free (1,500 ppm) to reduce criticality concerns.

Stripcoat TLC comes in two types. The original product has a small amount of ammonia in it to prolong its shelf life. Stripcoat TLC Free means that it is ammonia-free and some other chemical that doesn't smell as bad is used to prolong the shelf life.

The MSDS for Stripcoat TLC recommends that you wear a respirator with an ammonia cartridge if you're applying it in a confined space. The ammonia smell is irritating but it is not hazardous to your health. The Hanford numbers for the MSDS are 031937 (w/ammonia) or 035971 (ammonia-free)

QA has inspected the Stripcoat TLC and considers it hazardous material, due to the ammonia, in its liquid form. As soon as it's applied and the ammonia dissipates, it is no longer hazardous. The Stripcoat TLC Free is non-hazardous in both its liquid and dried forms. So neither of these products makes the waste material “mixed waste”.

There are chemicals in this product that are attracted to the radioactive contamination so the Stripcoat forms an ion-bond to capture the contaminated particles. Each coat bonds to the other coat so that when you strip it up, it comes up as one thick coat. It will also capture dirt particles and debris.

The manufacturer says that it will remove 50-100% of the loose surface contamination. Experience has shown that the decon factors will range from two to several hundreds.

Cost of this product is about \$85.00 per gallon. The manufacturer says one gallon will cover 40-50 square feet if applied at a thickness of about 40 mils.

This product will cure in 4-12+ hours depending on the temperature, relative humidity, ventilation, and the thickness. The company recommends applying several light coats instead of one heavy coat. If you apply it to concrete the first coat kind of disappears into the pores so you will usually need at least three coats. If you spray it on components that have a lot of crevices it may be difficult to remove. For example, armored electrical cables or components with louvers. Recommend trying it out on similar components

before applying it to the radioactive spill. The first coat of Stripcoat encapsulates the contamination. Additional coats just make it easier to remove.

If you spread it on the floor and then walk on it after it cures, you will eventually wear a path. Recommend covering the normal traffic paths on the floor with plastic, silver paper or the equivalent. Another product sold by the same vendor called Polymeric Barrier System can be applied over the Stripcoat in heavy traffic areas. This product bonds with the Stripcoat and is removed when the Stripcoat is removed.

If the Stripcoat is applied outside in sunlight, the UV rays will make it difficult to remove if it is left over two days.

This product is often applied in areas or rooms before work starts. The contamination is covered up so now work can proceed with significantly less risk of skin/clothing contaminations or airborne contamination. At the end of the job, the Stripcoat is stripped off to decontaminate the surface. RCTs should survey the waste bags to ensure they do not become a high radiation source. If it's applied to a wall, remove it by starting at the top and working downward.

Rule of Thumb: 1 cubic foot of low level waste will be generated for approximately 36 square yards (324 square feet) of surface area coated with the Stripcoat.

If a major spill occurs, the Stripcoat can be applied to fix the contamination and then managers can decide what the next steps are to decontaminate the area. Since the contamination is contained, the immediate concerns about spreading the contamination further are reduced.

The vendor has an engineering group that can provide a great deal of information about this product. Call Bartlett Nuclear Services @ (800) 225-0385, (508) 746-6464, extension 120 or 136, or fax (508) 830-3616. Their Website is www.bartlettinc.com.

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