

REACH

A publication of the U.S. Department of Energy for all Hanford Site employees



BACKPACK BASICS: Miriam Steffan, left, and Diana Taylor were among the 29 Fluor Community Involvement Team volunteers who gathered on an “off” Friday to sort school supplies. Employees donated more than 22,300 items to a community-wide drive. The Fluor donations included pencils, pens, erasers, glue and spiral notebooks in addition to more than \$725 in cash. The Fluor Foundation donated 250 backpacks that were distributed with the school supplies. This is the first year that Fluor has partnered with S.H.A.K.E. (Seniors Helping All Kids’ Education) in collecting and distributing school supplies donated for local children.

Pollution Prevention Award winners honored by DOE

Ten Environmental Restoration Contractor team members received 23 nationally recognized 2001 Pollution Prevention Awards for waste minimization practices by the Department of Energy in a recent ceremony at the Federal Building in Richland.

Pictured are: (left to right) Grant Ceffalo of Bechtel Hanford, Inc.; presenter of the awards, Bob Rosselli of the Department of Energy Richland Operations Office (front); Doug DuVon of BHI; Kevin Bergstrom of CH2M HILL Hanford, Inc.; John April of BHI; Tom Mitchell of CHI; Steve Parikh of BHI; and Jamie Zeisloft of DOE-RL. Not pictured are: Randall Price and Russ Randall, both of Three Rivers Scientific; Timothy Snider of BHI; and Raymond Swenson, formerly with BHI.



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The ERC team members' accolades came on the heels of technology deployment that saved Hanford Site cleanup an estimated \$20 million in operational costs during FY 2000. A Small Diameter Geophysical Logging System used by the Bechtel-led ERC team performed in-situ characterization using a geoprobe for soil testing in the 100 F Area. Use of the technology helped identify nearly 195,000 cubic yards where soil remediation wasn't necessary. The effort saved time and money that was used to accelerate Columbia River corridor cleanup work in FY 2001. ♦

		<p>Distribution questions: call the Mailroom, 375-5170</p> <p>See the <i>Hanford Reach</i> on the Web at: www.Hanford.gov/reach/index.html</p>
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Final 24 tanks removed from watch list

Tri-Party Agreement milestone completed one month early

The Department of Energy Office of River Protection has resolved significant safety issues resulting in the removal of the final 24 Hanford high-level waste tanks from the Wyden congressional safety watch list. Closure of the final safety issue completes a Tri-Party Agreement milestone that is due Sept. 30.

“Getting these tanks off the watch list is the result of years of effort to improve safe storage and to understand the nature of the waste in the tanks,” said ORP Manager Harry Boston. “We have confirmed the controls are in place to safely maintain the waste until it is retrieved and treated. This important milestone brings us one step closer to closing the tanks for good. We will continue to monitor the tanks to ensure safe storage of the waste until we can send it to the Waste Treatment Plant.”



ORP's Harry Boston, left, joined Congressman Doc Hastings and Sen. Ron Wyden to announce the closure of the watch list.

There are 177 underground tanks in central Hanford that store approximately 53 million gallons of waste from decades of plutonium production. Twenty-eight of the tanks are newer double-shell tanks that can hold more than a million gallons of waste, and the remaining 149 are older single-shell tanks with capacities ranging from 500,000 to a million gallons.

Sen. Ron Wyden of Oregon authored a law in the early 1990s requiring DOE to watchdog the most dangerous underground radioactive waste tanks at the Hanford Site. The law required identification of tanks having the potential for release of high-level waste from uncontrolled increases of temperature and pressure.

Based on these criteria, DOE identified four problem areas that could result in releases of high-level waste: generation of flammable gases; presence of flammable organic chemicals; presence of potentially explosive ferrocyanide; and high heat levels generated by certain types of wastes.

“A decade ago, I responded to the dangerous threat posed by certain nuclear waste storage tanks at Hanford by passing a law to protect the people of the Northwest from possible radioactive tank explosions,” Sen. Wyden said at an event in Richland marking the closure of the watch list. “Today, I’m proud to see the watch list become extinct. The hard work of the Department of Energy and many others has helped protect the people of Hanford and communities downstream from the potentially devastating effects of a radioactive explosion.”

“I am pleased to join Senator Wyden in celebrating the removal of the last tanks from the watch list,” said Congressman Doc Hastings. “Successful removal of all the tanks from the watch list eliminates one of the major risks to the citizens of the Northwest and is another example of the excellent progress the Office of River Protection is making.”

Sixty tanks had been added to the watch list since 1991, and 56 was the highest number of tanks on the list at any one time, in May of 1994. DOE resolved the ferrocyanide issue in 1996, the organic chemical issue in 1999 and the high-heat issue in 2000.

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Final 24 tanks removed from watch list, cont.

The resolution last January of the flammable gas safety issue removed tank SY-101 — nicknamed Hanford's "burping" tank in the early 1990s. Removal of the remaining 24 tanks was based on analysis of the waste, monitoring of tank conditions and identification of potential hazards.

Ventilation and monitoring of tank conditions and ignition source controls will remain in place on all Hanford tanks until the waste is retrieved and delivered to the Waste Treatment Plant, scheduled to begin hot operations in 2007.

"Our employees have worked hard to improve the conditions in these tanks, not only to remove them from the watch list, but also to make them available for normal operations," said Fran DeLozier, president and general manager of CH2M HILL Hanford Group, ORP's tank-farm contractor. "We're proud of this accomplishment and of our efforts to improve safe storage of waste in the Hanford tanks."

The Tanks Advisory Panel assisted DOE in reviewing the documentation that concluded the safety issues were closed and that the tanks could be removed from the watch list. The panel includes experts in hazardous waste, radioactive materials and waste management. The panel is chaired by Dr. Mujid Kazimi, chairman of the Nuclear Engineering Department at Massachusetts Institute of Technology. ♦

ERC aids in halting Columbia River corridor contaminants

George Rangel, BHI

Earlier this month, the Environmental Restoration Contractor team capped off one of its 2001 groundwater cleanup challenges by decommissioning 90 wells in the Columbia River corridor.

The effort was led by Bechtel Hanford and its subcontractor, Jensen Drilling Company. The work spanned nearly nine months and was safely completed a month ahead of schedule.

The well sites included different types of wells, from former groundwater-monitoring wells to seismic-data collection wells drilled from 10 to 500 feet into the ground. The majority of the wells decommissioned were in the 600 Area between the Hanford townsite and the 300 Area, with most surrounding Energy Northwest. For historical preservation purposes, the project bypassed the old Hanford townsite.

Five wells were decommissioned between the Vernita Bridge and the 100 B/C Area. Completion of those wells also marks the cleanup of the first section of the Columbia River corridor land, a 14-square-mile parcel known as Phase 1A.

Although the ERC team has decommissioned 252 wells at Hanford since 1997, the wells completed in fiscal year 2001 represent a fraction of more than 6,800 wells drilled at Hanford.

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After crews section off the work site, they fill the well with sand to the top of the water table. A three-person crew uses a diesel-driven drilling rig, and a 2,000-gallon water truck is on the site to wet down vegetation and provide fire protection. INSET: A typical abandoned well at Hanford before decommissioning.



Crews cut rectangular-shaped holes in the sides of the well casing with a perforator bit. The perforation sequence allows wet cement to seep through the holes and solidify the well and casing inside concrete.



ERC project aids in halting Columbia River corridor contaminants, cont.

Stewardship is key

“Decommissioning wells along the Columbia River is part of being a good steward of the land,” said Greg Mitchem, Bechtel’s senior project lead for groundwater operations. “We can’t remove the wells, but we can decommission them in a manner that protects the environment and maintains the scenic beauty of the Hanford Reach.”

“The well decommissioning project is part of the cleanup vision that includes restoring the Columbia River corridor,” said Marv Furman, DOE’s project coordinator for groundwater monitoring. “The no-longer-used wells provided a potential pathway for surface contamination to reach groundwater. By decommissioning the wells near the river we have eliminated the wells as a pathway for contaminants to reach groundwater.”

Weather a challenge

This summer’s temperatures and Hanford’s dry vegetation provided the ERC team with additional challenges, according to Ron Jackson, Bechtel task lead for well decommissioning. “We took a little different approach on this job,” Jackson said. “With fire being a real threat, we used diesel-engine equipment instead of gasoline-run equipment with catalytic converters that might spark a fire.

“In addition, we stationed a 2,000-gallon water tanker at every work site. We also kept in mind all of the Washington State Department of Ecology regulatory standards in bringing the project to completion.”

Bechtel’s environmental technologies well coordinator, Dick Biggerstaff, agreed. “The Department of Ecology played a key role in completing the project a month early,” he said. “In working with Ecology, they were very responsive in approving new field modifications.”

Although each decommissioned well is eventually buried three feet below the surface, every well is clearly identified, according to Chris Wright, technical lead for CH2M HILL Hanford, Inc.



After the well is perforated, crews begin the grouting process. The well is filled with cement to three feet below ground level. Once the well is encased, the top portion of the well is removed and capped with a brass survey marker. The concrete enclosure ensures that potential contaminants will not migrate along the well casing, contaminating groundwater or soil.



“Each well is capped with a brass disk labeling the well identification, the position of the well and the day it was decommissioned,” Wright said. “The caps provide a reference for anyone who may run across the wells in the future.” ♦

With the well encased and capped, crews replace the excavated soil and level the ground.

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ERC team member discovers pre-Hanford well

Bob Jones picked up a stone and tossed it into a pile of frostbitten sagebrush resting at the bottom of a shallow dune. The rock knifed through the dry vegetation, knocked repeatedly against a wooden frame before a final *plunk* echoed from what seemed a mile below.

“I knew there was something down there,” said Jones, a Bechtel Hanford field technical representative for well decommissioning. “From the surface it didn’t seem like much was there, but then I realized what it was.”

Jones had discovered a hand-dug well constructed sometime between 1900 and 1943 before development of the Hanford Site. Jones found the well in the 600 Area behind Energy Northwest in early spring, while he was surveying land for the Environmental Restoration Contractor team’s upcoming well decommissioning project along the Columbia River corridor.

In fact, the pre-Hanford well found by Jones reached more than 60 feet below the surface, deeper than most old homestead wells discovered at Hanford.

“Most of the wells that we have found have not been deeper than 45 feet, which is what makes Bob’s discovery unusual,” said Jim Sharpe, a CH2M HILL Hanford cultural resource specialist. “Right now, based on our findings, we’re not sure what the well was used for.”

The majority of pre-Hanford wells, used for homestead or irrigation purposes, have been found near the Hanford Irrigation Canal, Cold Creek and the White Bluffs area. The wells discovered in these places were dug or drilled by hand. Water was pumped to the surface using wind, electricity, gas or diesel engines.

Aside from the discovery of a potential historic relic, Jones’ discovery is a reminder that risks still remain at the site.

“I’m glad I found the well before anyone stumbled into it,” Jones explained. “If someone would have fallen into the well, they could have been seriously hurt with nobody around to help. Not even a cell phone would work that far down. It just goes to show that there are still some hazards to be aware of when you’re working on this land.”

“We occasionally run across pre-Hanford wells and suspect others remain undiscovered,” said Sharpe. “Those we find are documented with a Global Positioning System reading, logged into a site-wide database and evaluated for historical significance.”

For now, the well has been roped off and entered into the ERC team’s database until a plan is developed for the well. ♦



An old well concealed, above, and uncovered by the ERC team, below.



PNNL captures fish passage with acoustic camera

Staci Maloof, PNNL

If a picture is worth a thousand words, then how valuable is a high-resolution image of fish seen through murky water? Very valuable, according to scientists seeking to understand fish movement near hydro-power dams. Recently, fisheries biologists at the Department of Energy's Pacific Northwest National Laboratory deployed an acoustic camera originally designed for the U.S. Navy at a dam in the Northwest to study and illuminate their understanding of fish behavior.



An acoustic camera originally developed for the Navy may provide a new method of viewing fish and their behavior.

In its first fisheries application, the camera provided PNNL researchers with some of the best images yet taken of juvenile salmon movement near a dam. The images showed an individual fish's undulating movements, and its head and tail were visible, even at distances of 30 feet. Evaluations were done at the U.S. Army Corps of Engineers' The Dalles Dam, a 2,089-foot-wide structure straddling the Columbia River between Washington and Oregon.

Scientists at the University of Washington's Applied Physics Laboratory in Seattle initially developed the camera for the Navy's Space and Naval Warfare Systems Center. The Corps' biologists agreed with the value of such detailed images, purchased the UW's latest version and funded PNNL to assess the system's effectiveness in evaluating fish bypass measures. PNNL and the Corps worked together to develop the camera's use for fisheries-related work and the first application is currently under way at the dam.

"We recognized the potential of this instrument and are stretching the limits of what it was designed for," said Russ Moursund, PNNL project leader. "We are the first to apply the acoustic camera to fisheries issues. So far, it has captured images with greater detail and at greater distances than any other methods we've used. We'll continue to conduct tests to further evaluate its effectiveness in studying fish behavior."

Other techniques have greater limitations than the acoustic camera. Traditional sonar techniques have sufficient range for fish studies but can't determine the size or shape of fish. Optical systems such as video cameras provide clear pictures of fish, but are hampered by low light or turbid water, seldom capturing images more than three feet away.

The acoustic camera, however, can capture near-video-quality grayscale images from up to 30 feet away, regardless of visibility, and without the use of electronic tracking tags. Images also can be taken of fish located in confined spaces and near bubbles, which can deflect traditional sonar methods and interfere with data collection.

The UW began developing the technology in the mid-1990s for Navy divers to use in underwater surveillance to detect limpet mines attached to hulls of ships. In 1999, Moursund recognized the potential application for fisheries issues and, with the system's designer, Ed Belcher, tested the acoustic camera at PNNL's aquatic research center in Richland.

Earlier this spring, PNNL researchers used it to study the fish bypass system of J-occlusion plates at The Dalles Dam. The Corps of Engineers installed the plates, which are so named because of their similarity in shape to the letter J, in front of seven turbine units to help guide fish away from turbines.

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PNNL captures fish passage with acoustic camera, cont.

Using the acoustic camera, PNNL researchers collected data on fish activity in these areas when the plates were and weren't present. The Corps will consider this and other information to determine whether significant numbers of smolts are lost to gaps between adjacent plates.

This fall, PNNL fisheries biologists expect to deploy the camera at The Dalles and Bonneville dams. Additional tests will help quantify how well the acoustic camera can provide estimates of fish size and shape.

“With this system, we'll be able to observe how juvenile fish respond to structures added to dams, such as trash racks or turbine intake screens,” said Gene Ploskey, PNNL project co-lead and senior research scientist. “We also could study adult fish responses to conditions in fish ladders. Each of these studies would help expand our understanding of how fish are reacting to these structures and provide new information that could be used to mitigate the impact of dam operations on fish survival.”

The camera system, called the Dual-Frequency Identification Sonar, or DIDSON, uses an acoustic lens and can operate on two frequencies. By using up to 96 different sonar beams, the system flushes out more background noise and allows better image processing. More information is available at <http://www.apl.washington.edu/programs/DIDSON/DIDSON.html>.

The UW's Applied Physics Laboratory originally was formed in 1943 to conduct research for the Navy's World War II needs. It's now a part of the College of Ocean and Fishery Sciences. ♦

Mann named PNNL deputy laboratory director

Reinhold Mann, currently director of life sciences at the Department of Energy's Oak Ridge National Laboratory in Tennessee, has been named deputy laboratory director for science and technology at DOE's Pacific Northwest National Laboratory in Richland. Both laboratories are operated by Battelle, based in Columbus, Ohio. Battelle and the University of Tennessee, through UT-Battelle, have operated ORNL since April 2000.

Mann will begin his new assignment at PNNL on Oct. 1. His duties will include assuring that key scientific initiatives at the lab — including systems biology, computational science and engineering, nanoscience and nanotechnology — will be integrated with PNNL's other research activities.

In making the announcement, PNNL Director Lura Powell said Mann's outstanding research career and extensive management experience will help strengthen the science and technology programs at the laboratory and better link it with ORNL.

"Reinhold is highly thought-of by DOE and others for his ability to integrate large programs and lead large research teams," Powell said. "He will play a key role in seeing that PNNL is well positioned to meet critical needs across all DOE mission areas."

Mann has more than 20 years of experience as a researcher and leader in life, physical, computational and engineering sciences. He joined ORNL as a visiting scientist in 1981 and, during the next two decades, built successful programs in robotics and intelligent systems, bioinformatics and computational biology.

In 1997, Mann led the formation of ORNL's Life Sciences Division, where he serves as director. In 1999, he received the ORNL Leader of the Year Award in recognition of his strong management skills. He earned a master's degree in mathematics and a doctorate in physics from Johannes Gutenberg University in Mainz, Germany. ♦



Mann

CHG, WSU team up on internships through Business Links

Tri-Cities YMCA general director Jeri Strange was reluctant to let Washington State University student Brian Rector go at the end of the summer. While interning through the WSU Tri-Cities Business LINKS program, Rector created a Web site for the social service agency in Richland.

“We’re thrilled with the work Brian has done for us and for our clients,” said Strange. “It’s important for the community to recognize the value of his contribution and the efforts of WSU Tri-Cities to place highly qualified interns.”

Rector’s challenge was to develop a Web site that serves a wide audience, including businesses, parents looking for YMCA childcare or sports activities for their children, potential donors and the children the agency serves.

“I really wish we could keep him,” said YMCA’s childcare director Beckie Hildman. “We provided some raw materials, concepts and ideas, and Brian was able to create a great-looking Web site.”

While Rector is returning to WSU’s Pullman campus as a senior majoring in business, the Web site will continue to serve clients in the region. To help YMCA’s marketing director Deanna Smith and the rest of the staff maintain the new service, Rector developed a guide to editing the Web site.

“They have my pager number in case they need to track me down,” joked Rector. “Seriously, it’s been a great experience working with this agency, and I’ve learned some valuable skills in Web development that I’ll be able to use no matter what profession I choose.”

“The internship program sets a high standard on matching qualified interns with area businesses,” said LINKS internship coordinator Debbie Bone-Harris, working for WSU as a loaned employee of CH2M HILL Hanford Group. “The projects the students manage are substantive and focus primarily on information technology and business systems.”

Bone-Harris interviews all of the students and the business owners or managers before assigning students to internships. She wants to ensure that personalities, student goals and business projects match up well.

Business LINKS is part of WSU Tri-Cities’ business development service. This summer, 21 interns were placed with Tri-City businesses, including for-profit companies, non-profit organizations and municipalities.

The internships are supported by grants from the DOE Office of River Protection tank-farm contractor CH2M HILL Hanford Group. The grants pay the interns’ salaries, about \$2,500 for each undergraduate intern. Businesses that have interns assigned to them contribute a relatively small fee to cover other costs.

The new Tri-Cities YMCA Web site can be found at <http://www.tcymca.org>. ♦



WSU student Brian Rector talks with Tri-Cities YMCA general director Jeri Strange about the Web site he created for the social service agency in Richland during his summer internship.

Picture Pages



END-OF-SUMMER TOUR: Fluor Hanford interns are treated to a tour of the Volpentest HAMMER Training and Education Center as a close-out activity to the summer intern program. The students were able to see the Tyvek uniforms (left) used in environmental cleanup activities. They were able to inspect a

dismantled scud missile (center) used for training purposes. And they entered the Self-Contained Breathing Apparatus Building (right) where firefighters train. In the photo at right, Scott Jones of Fluor Hanford demonstrates the use of monitors used for a variety of scenarios in firefighter training.

PNNL captures bird's-eye view of Puget Sound pollution

Dawn White, PNNL

Launching what will be the first sky-based study of Puget Sound's air quality, scientists from the Department of Energy's Pacific Northwest National Laboratory, are flying Seattle's periodically hazy skies this month in search of answers about regional ozone and other pollutants.

The study, called Pacific Northwest 2001, is designed to gather first-of-its-kind air chemistry data essential to effectively address regional air quality problems such as ozone and microscopic atmospheric particles, called particulates. Levels of ozone in the greater Seattle area periodically exceed regulatory limits. Particulates, which aggravate asthma sufferers and have been linked to other serious health problems and air-pollution-related deaths, are nearing peak recommended levels.

"Despite increased concern about air pollution in our region, no one has captured the atmospheric data needed to understand how pollutants form, travel and interact within the Puget Sound area," said Leonard Barrie, PNNL chief atmospheric scientist and co-coordinator for the study. "We expect this study to fill that information gap and hopefully lead to improvements in models used to forecast pollution levels."



Sophisticated analytical equipment for measuring atmospheric phenomena is located inside the Grumman Gulfstream-1 aircraft operated by PNNL as a DOE research aircraft.

Multi-agency effort

PNNL formed and is leading the multi-organization study, which is being coordinated with the Environmental Protection Agency's Region 10 Office and includes collaborators at Washington State University, the University of Washington, the Puget Sound Clean Air Agency, the Washington state Department of Ecology and Environment Canada.

PNNL is conducting research flights in a Gulfstream-1 research aircraft between Seattle and Bellingham, tracking the flow of pollutants within the greater Puget Sound basin. Scientists hope to gain a better understanding of the distribution, transport and formation of ozone, particulates and the chemicals that form these pollutants in the atmosphere. Of particular interest is the fate of Seattle pollution as it is trapped in the foothills of Mt. Rainier and the Cascade Mountain Range. Scientists also hope to better document contributions made to ozone formation by forested areas along the Cascades.

"The Puget Sound area has a wide range of natural and manmade sources of pollution that contribute to ozone and particle formation and whose emissions we can sample with our aircraft," said Richard Barchet of PNNL, another of the study co-coordinators.

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PNNL captures bird's-eye view of Puget Sound pollution, cont.

Above-ground data

The atmospheric measurements will enable the first comprehensive testing of regional air quality forecast models with above-ground data. Current evaluations of regional air quality models are based solely on data gathered at ground level. Data from PNW-2001 is expected to greatly enhance the models' capabilities, leading to more accurate predictions for people who rely on them for health and recreational purposes. Also, data from the study eventually may be used to broaden the scope of certain models to include particulates such as those from diesel exhaust, which are of keen interest to people suffering from respiratory problems.

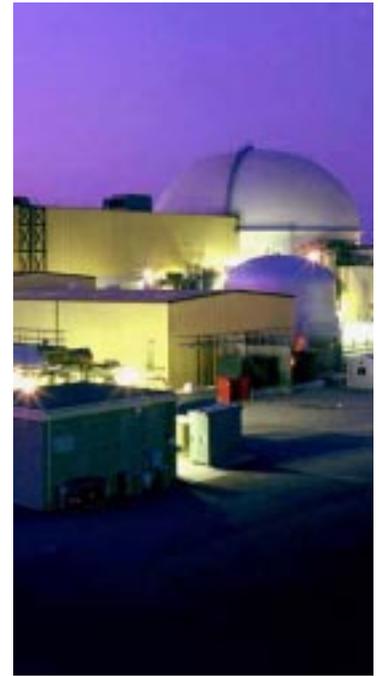
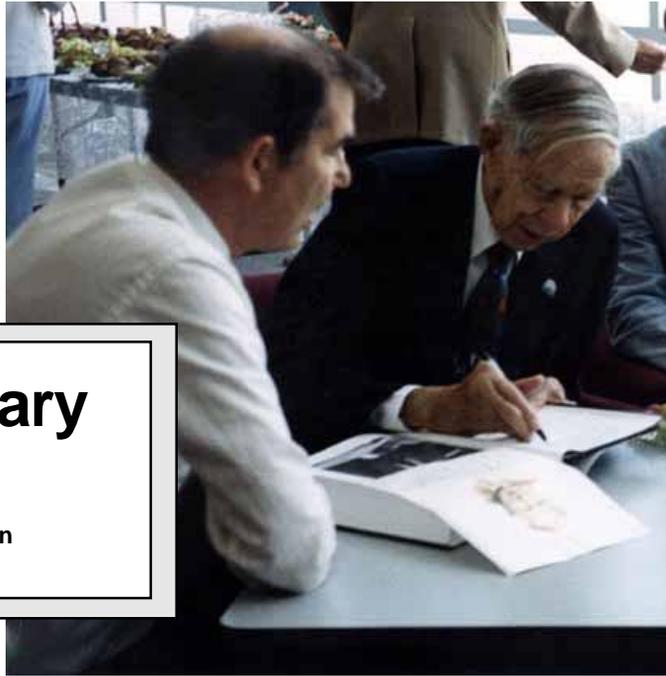
PNNL scientists chose late summer for the study to capture the region's peak pollution period, during which stagnant conditions with an inversion aloft and weak northwesterly winds trap pollution against the Cascades. Also, ozone levels peak in summer months due to the increased sunlight and high temperatures needed for its formation.

Linking with B.C.

The study's timing also enables the team to coordinate with a simultaneous Canadian air quality study called, Pacific 2001, of particulates and ozone in the Vancouver, B.C., area. In addition, PNNL is working with regional universities and government agencies to coordinate aircraft measurements with other regional air quality measurement and modeling activities.

Data from PNW-2001 and Pacific 2001 will be combined, resulting in the first comprehensive regional air quality and meteorological database for use in improving predictive air quality models used by regulatory agencies. While preliminary results will be available in a few months, full analysis will take place in 2002.

PNW-2001 is funded by DOE and EPA under the auspices of the North American Research Strategy for Tropospheric Ozone, or NARSTO. For more information, see the PNW-2001 Web site at: <http://www.pnl.gov/pnw2001/>. ♦



Commentary

by

Bob Schenter
National Association
of Cancer Patients

Fellow scientists Bob Schenter, left, and Glenn Seaborg

The Fast Flux Test Facility

FFTF and Seaborg: two national treasures

In writing about a truly national treasure, the Fast Flux Test Facility, I also want to tell some very related anecdotes about another national treasure, the late Professor Glenn T. Seaborg.

Both Glenn Seaborg and the FFTF have had very important connections with medical isotope production and applications — especially during the late 1990s. Seaborg was one of the co-signers of the Nuclear Medicine Research Council's letter of Nov. 27, 1997, to (then) Secretary of Energy Federico Peña. I believe the closing paragraphs of the letter express his thinking very well:

Much work remains to be done to enhance health care through nuclear medicine techniques. The medical community is doing its share, despite the shortage of existing isotope supplies for clinical trials and the uncertainties that are faced in the future supplies of isotopes for medical research and therapeutic applications. To that end, it is critically important that the Department make available its unique resources, such as the FFTF, to sustain and enhance its partnership with the nuclear medicine community — a partnership that can do so much to save lives and improve the quality of life for critically ill patients.

We strongly encourage the Department to maintain its long-term commitment to the production of medical isotopes and continue its consideration of restarting the FFTF. — (signed) Glenn T. Seaborg

Seaborg chaired the U.S. Atomic Energy Commission under Presidents Kennedy, Johnson and Nixon. More than that, he was among the founding fathers of modern nuclear medicine — the most prolific discoverer of radioisotopes that are widely used today in diagnosis and treatment. In 1951, he was awarded the Nobel Prize in chemistry for his work.

Seaborg also was chairman of the Lawrence Hall of Science (which he founded), associate director of the Lawrence Berkeley Laboratory and a professor at the University of California at Berkeley.

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Comentary: FFTF and Seaborg: two national treasures, cont.

FFTF can save lives

The FFTF had an excellent performance record in producing a number of medical isotopes during the late 1980s, and many words have already been written over the years about some of the very exciting applications of these isotopes. ("FFTF produces up to 60 medical isotopes," *Hanford Reach*, May 18, 1992).

One of our proudest accomplishments was being able to send FFTF-produced osmium-191 to Children's Hospital in Boston for adult and infant blood-flow studies. In evaluating heart function, doctors have had to rely on heart catheterization, a procedure with significant risk when used on a premature infant's fragile circulatory system. But researchers at Children's Hospital in Boston have found that using a radioisotope of osmium allows non-invasive imaging of the soft tissues of the heart and blood vessels. This can be done at a dramatically lower radiation dose than is possible with currently available radiopharmaceuticals.

Even when that *Hanford Reach* article was written in 1992, there was a long list of isotopes and potential applications related to brain imaging and the treatment and diagnosis of several forms of cancer, heart disease and osteoporosis. The potential medical applications have more than doubled since then.

Seaborg, FFTF linked

Seaborg's most important discovery was probably technetium-99m. In his words, "My role in the discovery of technetium-99m and cesium-137 involved collaboration with other colleagues, Emilio Segre and Margaret Melhase. At the time, we had no expectations concerning the work's ultimately beneficial applications in medicine. But today, technetium-99m is the most widely used radioisotope in 'in vivo' diagnostic medicine and has become one of the mainstays of nuclear medicine. More than 40,000 nuclear medicine procedures a day in the U.S. use Tc-99m."

Glenn Seaborg and the FFTF are outstanding "national treasures." Seaborg should be honored and remembered, and the FFTF should be restarted. Seaborg's accomplishments clearly show he was the United States' most distinguished scientist.

His continuing support for medical isotopes and the FFTF was shown best to me when he autographed some of his written works for me with the words, "To Bob Schenter, a collaborator in the use of radioisotopes in nuclear medicine," and "To Bob Schenter, a fellow cancer fighter." ♦

PNNL studies may lead to improvements in cyber defenses, flight safety, radiation health effects

The Department of Energy's Pacific Northwest Laboratory scientists are using simulation and analysis to help computer systems administrators. Simulation and analysis will help defend against cyber attack, allow the public to interact with priceless museum artifacts, assist the airline industry to improve flight safety, and determine the effects of low doses of radiation on human health in the former Soviet Union.

Cyber defense

Just as flight simulators provide real-world experience to pilots without jeopardizing lives, a new cyber security training capability under development at PNNL will give computer systems administrators experience defending against cyber attacks without compromising their networks.

PNNL scientists have created a prototype Systems Administrator Simulation Trainer, or SAST. The prototype will rapidly develop the cyber security experience of systems administrators in any type of organization to identify, circumvent or recover from hacker activity. The program consists of a network of training tools that simulate the cyber environment and are launched through an automated system. When fully developed, students with broadband Internet access would use these tools remotely, reducing training costs and allowing continual access.

SAST was developed for the Department of Defense's Technical Support Working Group, at the PNNL-based Critical Infrastructure Protection and Analysis Laboratory, a dedicated cyber research and development laboratory created specifically to counter cyber threats. TSWG's mission is to conduct the national interagency research and development program for combating terrorism through rapid research, development and prototyping.

Safer flight

Some airline travelers may think safety is just a question of odds. Travelers do not realize the enormous efforts government and industry exert to make flying one of the safest forms of travel. For example, statistical science is playing a larger role in ensuring flight safety.

PNNL and Battelle, which operates the lab for the DOE, are developing a suite of tools called the Aviation Performance Measuring System, or APMS, that extracts crucial safety information from digital flight data. While some of APMS's tools detect and display well-known problems, PNNL statisticians have created statistical algorithms to recognize atypical flights by first studying thousands of hours of flight data to understand how normal flights look, then searching the database for flights that don't fit those patterns.

Aviation experts analyze these atypical flights for evidence of previously unrecognized operational or equipment problems. Airlines soon will use APMS to monitor internal flight data. Battelle has led this research since 1993 for the National Aeronautics and Space Administration Ames Research Center.

Low-dose exposure

An epidemiological study to evaluate radiation exposure to residents of a former Soviet Union community is offering researchers a unique opportunity similar to survivor studies of Hiroshima and Nagasaki, Japan. Researchers are analyzing data to determine if radiation delivered at low dose rates is equally responsible for causing cancer and other adverse health effects as the same doses delivered at high rates.

PNNL scientists are working with other national and international institutions to evaluate radiation exposures in communities located in the Techa River basin, near the southern Ural Mountains. Scientists will study potential human health impacts to more than 30,000 people from past plutonium production efforts. Accidents and poor waste disposal practices from 1949 to 1956 exposed individuals living in 39 villages along the Techa River basin to elevated radiation doses. ♦

Russian, PNNL scientists advance seed production, oil remediation

Staci Maloof, PNNL

While searching for a better way to grow turf grass in light of stricter government regulations, a Washington state seed company found help from an unlikely source. Former Soviet Union scientists who supported the production of weapons of mass destruction during the Cold War are now sharing their expertise through a U.S. nonproliferation program.

Dye Seed Ranch, a seed processing and production company based in Pomeroy, Wash., sought technical expertise for its turf grass seed operation from the Department of Energy's Pacific Northwest National Laboratory. PNNL scientists linked the company with Russian scientists who had developed a plant growth stimulator and an oil remediation biotechnology.

The Russian scientists work at Biochimash, a former Soviet weapons development center, the prestigious Lomonosov Moscow State University and the Russian State Institute for Gas and Oil.

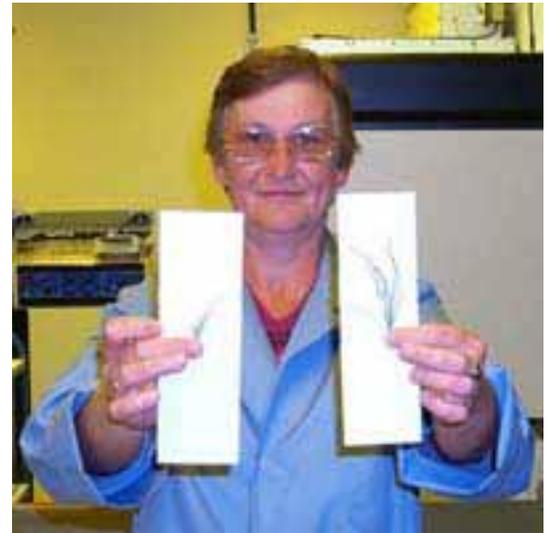
Testing begun

In August, Dye Seed and scientists from PNNL and the three Russian organizations began testing the plant growth stimulator and oil-eating microbes throughout the Northwest. The testing came after the signing of a Cooperative Research and Development Agreement in June that formalized Dye Seed's interest in pursuing commercial opportunities with PNNL and the Russians.

A DOE program called Initiatives for Proliferation Prevention, or IPP, funded the laboratory studies and subsequent verification tests that will be performed at PNNL. IPP was established in 1994 to create non-defense jobs for former Soviet weapons scientists by linking them with U.S. companies interested in commercializing their non-weapons technologies. (For more on IPP, go to Web site www.nn.doe.gov/ipp.shtml.)

"We couldn't do any of this without the laboratory and IPP," said Steve Stilson, Dye Seed general manager. "The preliminary lab results for these projects are very promising. If these field tests show potential, it would be beyond my wildest dreams."

The research addresses two issues faced by companies such as Dye Seed. First, a plant growth stimulator could shorten the current 18 months that seed producers wait after planting before harvesting their first crop. The wait has become more difficult in states such as Washington, where burning of turf grass fields — a traditionally effective method of increasing seed production yields — has been banned. Second, a microbe capable of remediating oil-contaminated fields also may hold promise for industries looking for new methods to clean up agrochemicals.



Natalia Nikishenkova, a scientist with Biochimash, shows how grass seed treated with the plant growth stimulator Symbiont is nearly three times the size of the control group's grass seed.

Continued on page 19.

Russian, PNNL scientists advance seed production, oil remediation, cont.

Biochimash's plant growth stimulator is a mixture of fungi and bacteria called Symbiont, so-called because of the symbiotic relationship between microbes and the plant root in soil. Initial studies showed the simulator increased the growth rate of grasses and many broad-leaf plants by 40 percent under controlled conditions.

"Rather than waiting 28 days for Kentucky Blue Grass seeds to germinate, that process may take only seven days with Symbiont," Stilson said. Dye Seed has processed and marketed seed — primarily Kentucky Blue Grass — for private and industrial customers since 1949. About 60 percent of the world's Kentucky Blue Grass is produced in the Pacific Northwest.

Scientists from PNNL and the Russian organizations are testing Symbiont in Stanfield, Ore., Pomeroy, Wash., and the Tri-Cities — each with different soil types and moisture status. At each site, scientists measure Symbiont's growth-enhancing abilities when applied to planted seeds and to an existing plant.

Cleaning up oil

Under the second project, Dye Seed is eyeing microbial strains developed at Biochimash and the Russian State Institute for Oil and Gas. The company anticipates it could either commercialize the oil remediation application or support further research into its potential for cleaning up agrochemicals. In this research, the microbes help break down the oil and restore the soil.

The scientists also expect to conduct field tests in Shelby and Roundup, Mont., this month to measure the effectiveness of five oil-eating microbes at varying combinations and concentrations in soil contaminated with oil. After the tests, Dye Seed can decide if it will pursue similar tests on agro-chemicals.

"We're addressing two issues with one new relationship — the need to ensure Russian scientists with biological, chemical and nuclear weapons knowledge stay employed in non-defense jobs and the desire to share the latest scientific advances," said Debbie Dickman, PNNL manager of nonproliferation product lines.

If either technology proves effective, Dye Seed could patent the product in the United States, and the Russians would control patents in Russia and the other newly independent states of the former Soviet Union. ♦



The days are growing shorter; do a safety check on your car

The beginning of school and the upcoming Labor Day holiday are signs that summer is rapidly drawing to a close. Sept. 23, the autumnal equinox, will make it official — summer will be over and the days of autumn will be growing shorter and shorter.

Late summer and early fall are good times to check out your vehicle to make sure it is safe to operate. You probably have not used your headlights and wiper blades very much lately. Are they still working well? How about the rest of the vehicle?

Here are some tips to get ready for shorter and perhaps wetter days as winter approaches. These tips are valuable for your personal vehicles, and they also apply to government vehicles:

- Make sure wiper blades are in good condition.
- Check all lights including brake lights.
- Check fluid levels: oil, coolant and windshield washer fluid. Use caution when checking coolant. It is best to just do a visual check of the expansion tank.
- Do a quick visual inspection of the engine compartment looking for leaks or obvious signs of wear on belts and hoses.
- Check tires for wear and proper inflation.
- Be ready for changing conditions. Make sure you are equipped for conditions you may encounter.

Should you have a problem or concern with a government vehicle, the Fleet Maintenance Shops encourage you to stop by and check with them. ♦

Six Hanford employees win prizes for badge 'tips'

Three weeks ago, the Security Education office of Day & Zimmermann Protection Technology Hanford asked for the tricks or mental processes you use to remember your Hanford badge each workday.

A large number of you responded, and the names were entered in a drawing for prizes. The six winners of the drawing held Aug. 15 were Michelle Doty, Brian Baumann and Gail Hoobler of Fluor Hanford, Kim Leonard of Lockheed Martin Services, Orman Arnold of Qwest and Linda Yorgensen of the Department of Energy Richland Operations Office.

Most suggestions centered around the need to associate your badge with your daily routine. "Hang your badge on the inside doorknob of the door you exit in the morning to go to work," wrote Baumann. He also suggested the badge not be left where a small child could have access to it, or it might end up in a hard-to-find place.

Arnold wrote that he hangs his badge on the same hook where he keeps his vehicle keys. "I make it a habit, every time I drive anywhere, to put the key back in the same place," he wrote. Hoobler reported that she hangs hers on the wall-mounted switch for the garage-door opener.

"I hide my badge in my car so I always have it as I drive through the barricade," Doty wrote. "I park my car in my garage, so I feel comfortable about leaving the badge hidden inside."

Leonard and her husband have both worked at Hanford for many years, and they say they never forget their badges that hang on hooks along with their car keys in the laundry room. "We seldom get too far from the house when we forget our car keys," she wrote. "Thus the badges aren't forgotten either."

A woman's purse never seems to get left behind either, so some female employees suggested keeping the badge there. "I place my badge in my purse the moment I take it off," said Yorgensen. "It goes everywhere I go."

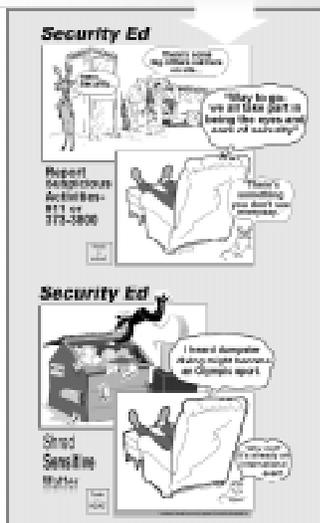
Other employees said they put their badges in their safety shoes, with their wallets, looped around key rings, on the bathroom mirror or in lunch boxes. And some employees apparently post reminders for themselves.

Joe Bombino of PTH wrote: "Years ago, whenever I borrowed my dad's car, the first thing I would notice was a round green fluorescent sticker on the horn button of his steering wheel, which asked 'Got your badge?'" ♦

Security Ed

Create a Security Ed Cartoon and win a prize!

Here's a couple of past cartoons



Security Ed

Write or draw what Ed observes. (Work or home related.)

What does Ed think about it?

What action is to be taken?

Comment?

Your name

Submit your ideas to Security Education L4-09

Learn the symptoms of heat stress; you could save a life

Although the temperatures have moderated since the beginning of August, summer is not over yet and we may still experience some hot weather. During the high-temperature days, those of you who work outside or in hot environments might suffer some heat-related illnesses or discomfort brought about by heat stress.

Heat stress occurs when the body's core temperature gets too high for the body to cool off quickly enough. The body's two major sources of heat loss are sweating and shifting more blood circulation from the body core to the skin. Sweat must evaporate, not just drip, for cooling to take place. Environmental conditions such as high relative humidity and low air movement can result in excessive sweating that doesn't provide cooling. Additional factors that can make an individual more susceptible to heat stress are poor physical condition, heart disease, diabetes and excess weight.

Preventing heat stress is a matter of controlling the six factors that cause it:

- Temperature
- Humidity
- Air movement
- Radiant temperature of surroundings
- Clothing
- Physical activity.

Heat stress injuries, ranging in severity from non-serious physical discomfort to life-threatening situations, are described below. It is important for us to recognize heat-stress symptoms, especially when the victims of the more serious conditions may become disoriented and unaware of the severity of their own condition.

Heat rash

This bumpy, itchy red rash is caused by a hot, humid environment and plugged sweat glands. Heat rash is annoying but not life-threatening. Dry clothes that help sweat evaporate will reduce the chance of heat rash. Washing regularly and keeping the skin clean and dry will help prevent it.

Heat cramps

Heat cramps often occur in the legs and abdomen when a person is sweating heavily and replacing water but not salt. The skin is hot and moist, and the pulse is normal. Moving into the shade and loosening clothing can help relieve heat cramps. Drinking lightly salted fluids can also help. Seek medical help if the cramps persist. Keep the victim sitting or lying down.

Heat exhaustion

Heat exhaustion occurs when the body's heat control system is overtaxed, and the core body temperature is increasing. Symptoms of heat exhaustion include heavy sweating; intense thirst; cool and moist skin; weak and fast pulse; and feelings of fatigue, weakness or dizziness. Get the victim to a cooler shaded area. Loosen clothing, and begin cooling the victim quickly — by fanning and pouring cool water on him or her. Have the victim drink water, salted if available.

Heat stroke

Heat stroke is a life-threatening condition that requires immediate medical attention. Heat stroke occurs when the body rapidly uses up its supplies of water and salt. Sweating stops and the body, including the brain, begins to overheat rapidly and body temperature climbs to fatal levels. Symptoms include hot, dry, flushed skin, rapid pulse, difficulty breathing, headache, confusion, weakness and nausea. Heat stroke can rapidly progress to seizure and convulsions, unconsciousness and loss of pulse.

Call an ambulance immediately, and begin cooling the victim as quickly as possible. Spray or sponge him or her with cool water or immerse the victim in cool water. Do not give liquids to an unconscious person. ♦

Continued on page 23.

Think safety

When the heat is on, it may be harder to work safely. Not only can excessive heat make you sick; it can also make you short-tempered, inattentive, dizzy and slow — all of which are threats to working safely. Sweat can make your hands slippery and run into your eyes or eyewear and obscure your vision.

In the work place, the following controls and practices can be implemented to reduce the possibility of heat stress and help employees work safely:

- Use insulation and reflective barriers to control the heat source.
- Exhaust hot air or steam away from the work area.
- Use air-conditioning.
- Use air-conditioned rest areas.
- Use fans to circulate the air.
- Reduce the physical demands of the work by using mechanical equipment.
- Increase the frequency and duration of rest breaks.
- Schedule tasks to avoid heavy physical activity during the hottest parts of the day.
- Provide cool drinking water or an electrolyte-replacement drink and encourage its consumption.
- Use additional workers for the job or slow down the pace of the work.
- Make sure everyone understands the signs and symptoms of heat stress. ♦

Drink water, dress and eat lightly, stay cool

Here are some tips for avoiding heat stress:

- Follow work and rest routines that keep you from becoming exhausted in the heat.
- Alternate heavy work with lighter work, or move from a hot location to a cooler one periodically. Take advantage of scheduled breaks to rest and cool off.
- Drink water frequently. One of the main causes of heat stress is dehydration, so keep up your intake of water or fluid replacement drinks. Don't wait until you are thirsty to drink.
- Avoid beverages containing alcohol or caffeine; they actually deplete the body of fluids.
- Eat regular, light meals. Save the hot dinner until after work, and have something cool such as salad for lunch. If you are sweating a lot, lightly salt your foods to replace salt. But if you are on a salt-restricted diet, seek medical advice before adding salt to foods to prevent heat stress. Salt tablets are not recommended.
- Take time to get accustomed to the temperature, and slow down when moving from a cool area to a hot one, such as leaving an air-conditioned workplace and stepping out into the late afternoon heat and into a hot car. Use the ventilation to cool down the car.
- Dress in loose, comfortable clothing made of light fabrics and in light colors. Layer your clothing so you can add or take off items of clothing as the temperature changes. ♦

Regular Features



LETTERS

Employees are invited to write letters of general interest on work-related topics. Anonymous letters will not be printed. We reserve the right to edit letters or not to accept letters for publication. Send your letters to the *Reach*, B3-30, or to *Hanford Reach on e-mail. Letters are limited to 300 words, and must include your name, company, work group and location. Opinions expressed are those of the author and not of DOE-RL, ORP or their contractors.

Thank you!

On behalf of the Nez Perce Tribal Environmental Restoration and Waste Management Program, and the Preparing for Academic Excellence students and staff, we would like to thank the Department of Energy Richland Operations Office personnel and the Pacific Northwest National Laboratory staff for allowing us to schedule this year's PACE camp trip to their facilities.

In the past, PNNL scientists and staff traveled to Lewis-Clark State College in Lewiston, Idaho, to share their information with our students, and we appreciate the commitment they have made to us. This year, it was nice for us to make the trip to Richland, to visit the Federal Building, the Hanford Site (PNNL) and Gable Mountain. The students really enjoyed the presentations and the time they spent in Richland.

We want to thank all presenters and speakers (Mike Talbot, Ernest Antonio, Dan Tano, Scott Abernethy, Corey Duberstein, Kevin Simmons and Nat Saenz) for the time and information they shared with us.

We would like to send a special thank-you to Andrea Powell for the time, energy and effort she dedicated to make this trip possible.

Patrick Sobotta

ERWM Director, Nez Perce Tribe

Remember sacrifice

I agree with Ms. Donahoe ("Different memorial," *Hanford Reach*, Aug. 20) that monuments to peace and not disrespectful warheads should be lining the roads to Hanford. Instead, we should be using images such as "Fat Man" or "Little Boy" that brought peace to the world and saved millions of lives by ending World War II.

We could have them guarded by Kamiakin Braves bearing peaceful tomahawks or ranks of Eisenhower Cadets with rifles in hand. I'm sure you wouldn't be offended by their gaudy school colors.

However, if these conjure up fearful images for you perhaps you should return to your Happy Valley where you can enjoy the freedoms paid for with our forefathers' blood without being disrespectful to the victims of war. Unfortunately history isn't always viewed through rose-colored glasses. When it is, the facts have been rewritten.

I applaud the local schools for keeping mascots linked to Hanford's historical significance and hope we always remember how our freedom was earned.

Fen Simmons

Fluor Hanford

Not disrespectful

I do not feel that the bomb is disrespectful.

My grandfathers and parents all worked at Hanford in the 1940s. They were very proud of the fact that the "bomb" is part of Hanford's history. They were very honored to be part of this history. The bomb was the cessation of World War II.

I am very proud of Richland's history, and I am not ashamed of the "bomb" as a symbol of peace.

Jeanette Yarger

Fluor Hanford

Proud of bomb

I, for one, am very proud of Hanford's role in the production of the atomic bomb.

I see the atomic bomb as a weapon of peace because it stopped the slaughter of people throughout the world, not just Americans.

I know that some people see the bomb as an object of destruction but others see it as a symbol of peace.

I was happy to see the bomb on Stevens Drive in Richland. It is a beautiful object and not at all gaudy to me. I guess that beauty really is in the eye of the beholder.

Steve Browning

Fluor Hanford

Seeking witnesses

I am looking for witnesses and information relating to a road rage incident involving a car and a motorcycle. The event occurred at approximately 6:30 a.m. on Friday, June 22, at the intersection near Talgo LRC (the lo-

Continued on page 25.

Regular Features

comotive and rail car repair facility) and Western Sintering on Stevens Drive.

I am especially interested in getting in touch with the driver of the vehicle following the blue Geo Metro.

Please call me as soon as possible at 786-1272.

Miguel Pineda

Pacific Northwest

National Laboratory

Safety attire?

Why are the three electricians in the front-page photo of the Aug. 20 *Hanford Reach* ("Tug O' Wire") without hard hats and hard-toed footgear?

Why is one of the three electricians not wearing safety glasses? Isn't the Waste Encapsulation and Storage Facility an industrial site?

I don't understand. Even the local contractor's employees who did similar work at my home last year appeared to be more aware of the importance of proper safety attire.

Steve Clark

CH2M HILL Hanford, Inc

📌 **Editors' note:** According to Ron Wight, WESF safety professional, the job being performed in the front-page photograph of the Aug. 20 *Hanford Reach* was a job that falls under the Occupational Safety and Health Administration construction standards (29 CFR 1926), not the industrial regulations.

The construction standards that require "Protective equipment shall be provided wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact." (29 CFR 1926.95).

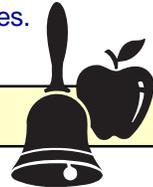
OSHA requires appropriate foot protection to be worn when there are foot hazards present. Since there were no risks of heavy items being dropped or any other foot hazard such as nails in boards or chemical hazards present, and the footing was level and dry, the footwear being worn was adequate. As there was no possibility of objects falling from overhead, hard hats were not required.

The two individuals with glasses are wearing their own personal corrective lens glasses. As there was no potential hazard from flying objects or debris during the job,

safety glasses were not required.

Each aspect of the job was reviewed during the automated job hazard analysis process, with workers, supervisors and safety professionals, and appropriate controls were specified. Personnel followed the AJHA (2C-591) controls and the job was completed safely with no injuries.

CLASSES



Hazards analysis to be taught Sept.17-21

The Process Safety Institute, sponsored by the Department of Energy Richland Operations Office, will be teaching the course Hazard Analysis: Consequence Analysis Methods on Sept.17-21. Several spots are available for contractor employees. The cost for this course is \$1,198.

This course will teach the methods used throughout the industry for quantitatively assessing the consequences of hazardous material releases (toxic and flammable). In addition, students will study practical consequence models and the assumptions behind the models (as well as their limitations). The role of the consequence assessment in performing quantitative risk assessments and in estimating risk will be discussed. The course provides the theory and practical applications of consequence assessment methods. Students will participate in several workshops to gain experience in practical hands-on application of consequence analysis methods.

For more information, visit PSI's Web page located at <http://www.abs-jbfa.com/psi.html>. Visit the Parallax Web page at <http://www.parallax-engr.com> and then visit the DOE-RL Office of Training Services where you will find instructions for registration for this course. For additional information, call Marcy George at 376-8284.

Study CAD at CBC

Columbia Basin College will offer Computer Aided Drafting courses at this fall. Courses begin September 17 and end December 5.

- **AutoCAD I**, Tuesdays, 6-10 p.m.
- **AutoCAD I**, Fridays, 8 a.m.-12 p.m.

Continued on page 26.

Regular Features



CLASSES

- **AutoCAD II**, Thursdays, 6-10 p.m.
- **3-D**, Mondays, 6-10 p.m.
- **Drawing Production**, Wednesdays, 6-10 p.m.

Tuition is approximately \$200 per 3-credit course. AutoCAD I and AutoCAD II are prerequisites for the other courses. It is possible to test out of AutoCAD I. CAD certificate is available for students who fulfill all course requirements. For more information or assistance in enrolling, contact Steve Jette at sjette@cbc2.org or at 547-0511, ext. 2274.

Continuing Training Offered at HAMMER

The Volpentest HAMMER Training and Education Center offers Continuing Training Offering Plan sessions regularly. There is no charge for participation in the sessions, but students must register in advance. Register online at <http://www.rl.gov/trs/ctop/ctop.htm>. Click on the selected session and complete the registration form, or send an e-mail message to Vikki Ballew with student name, Hanford identification number, organization name (not code), company name, session date and session title. Upcoming sessions include:

- **Integrated Training Electronic Matrix (ITEM)** – Aug. 21 and Dec. 5, 7:30 a.m. in room 16. ITEM is the site-wide program for tracking training requirements. This session includes a general overview of ITEM, discusses how to access various reports and provides an explanation of the role instructional staff members may play in providing input that feeds into the system.
- **Dealing with Training Disrupters** – Sept. 5, 7:30 a.m. in room 12. This session covers types of classroom distractions, student motives, what actions are allowed, prevention methods and class-solicited recommendations.
- **S/RIDs: What They Are and How They Apply to Training Activities** – Sept. 12, 7:30 a.m. in rooms 18 and 19. This session will provide a history and overview of standards/requirements identification documents as they apply to the Project Hanford Management Contract.

- **A Hands-on Approach to Procedure Process Training** – Oct. 17, 7:30 a.m. in room 11. This interactive session provides an example of how one organization used a novel approach to provide procedure compliance expectations training.

Safety classes offered at HAMMER

D2000 Safety Solutions will offer the classes listed below at the Volpentest HAMMER Training and Education Center. All classes qualify for Continuing Education Units.

- **Trench Rescue** – Sept. 5-7. Cost is \$695. The course is designed for individuals or organizations that provide trench rescue services. Subjects include scene assessment and safety; team organization; emergency shoring using speed shores, screw jacks and lumber; patient packaging, ropes and related equipment; and mechanical advantage systems. Scenario-based exercises will measure student competency.
- **Confined Space Train the Trainer** – Oct. 2-5. Cost is \$695. The course covers the OSHA standard 29 CFR 1910.146. The course focuses on tunnels, sewers, boilers and other spaces adequate in size and configuration for employee entry, with limited means of egress and not designed for continuous employee occupancy. Hands-on scenarios are also included. Students will conduct actual confined-space entries.

To register for any of these courses, contact D2000 Safety Solutions at (800) 551-8763 or visit the Web site, www.d2000ss.com. ♦

Get timecards ready early

Employees of Fluor Hanford, Duratek, Numatec, Day & Zimmermann Protection Technology Hanford, DynCorp Tri-Cities Services and CH2M HILL Hanford Group are requested to have all timecards for the week ending Sept. 2 submitted and approved no later than 9 a.m. on Thursday, Aug. 30. The upcoming Labor Day holiday on Sept. 3 necessitates the early processing of payroll. Please estimate your time for the remainder of the work-week including anticipated overtime Aug. 31 through Sept. 2. Your cooperation with this schedule will enable Payroll to process and distribute paychecks as scheduled. For more information, contact Todd Beyers at 376-2815.



Regular Features

CALENDAR

Hanford bowling league meeting set for tonight

Join the Hanford employees and friends bowling league in its sixth year. The league will meet tonight at 6:30 at Celebrity Bowl in Kennewick to adopt league rules and set up a prize fund.

Last year the league had 10 teams, and would like to expand to 12 teams of four members each this year. The league is open to non-Hanford employees. This mixed league bowls on Monday evenings at 6:30 p.m. beginning Sept. 10 for 33 weeks at the Celebrity Bowl.

Potential new members should contact Alan Hill via e-mail or at 586-9271 after 6 p.m. for more information or to reserve a spot. Captains of returning teams should also call Hill to confirm their team spot in the league.

NAPM holds meeting on Sept. 6

The Sept. 6 meeting of the National Association of Purchasing Management will feature Bill Craven, the Northwest regional manager for Audit, Compliance and Business Ethics for Bechtel National, Inc. The meeting will be held at the WestCoast Hotel in Kennewick. The educational workshop begins at 5 p.m., the social at 6, and the dinner and program at 6:30. The cost is \$14.50. Call 372-7201 for reservations.

AQP meets Sept. 11

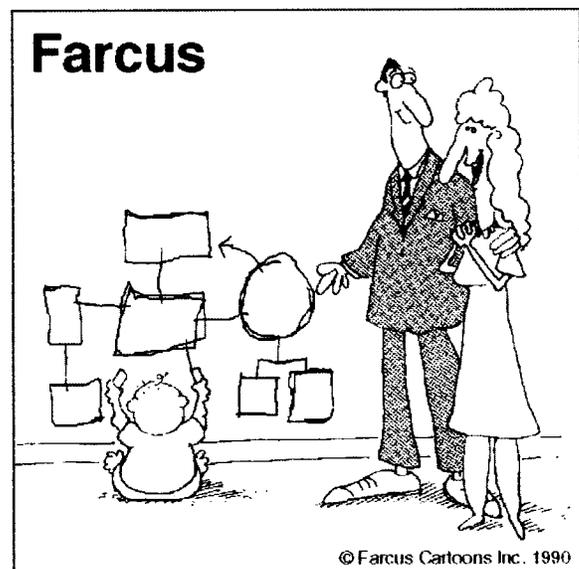
Jamie Cox, director of The Empowerment Group, will share strategies for coaching team members and creating "can do" attitudes at the Sept. 11 meeting of the local chapter of the Association for Quality and Participation at the Richland Shilo Inn. The networking and social hour begins at 5 p.m., the buffet dinner is at 6 and the presentation starts at 7. The cost is \$16 for AQP and the American Society for Quality members, \$19 for non-members, or \$5 for the presentation only. Call 547-6548 to make reservations or register through the chapter's Web site at <http://www.3-cities.com/~gates/AQPQuest.htm>.

NMA Golf Tournament set for Sept. 15

Get your four-person team ready and join the Hanford Chapter of the National Management Association at Horn Rapids Golf Course on Sept. 15 for a day of fun, food and prizes. This event is open to all Hanford employees and family members. All levels of ability are welcome. The method of play will be an 18-hole scrambler, with a shotgun start at 8 a.m. The cost is \$45 per person, which includes greens fees; cart; a coffee-and-donut breakfast; burgers, salad, chips and a beverage for lunch; and lots of prizes. Register by Sept. 11. Forms are available on the NMA Web page at www.nma1.org/chapters/395/. For more information, contact Don Layfield at 376-5584 or at donald_r_layfield@rl.gov.

Learning Landscape Child Care Center openings

The Department of Energy-sponsored Learning Landscape Child Care Center has openings for infants and pre-school children 3-5 years old. Contact Sharon or Suzanne at 946-4609 to enroll or obtain more information about the center. The center offers an educational curriculum for infants, toddlers and preschoolers. ♦



Oh look, Honey! She drew an org chart!

Regular Features



SHOEMOBILE

300 Area

along fence east of Wisconsin Street

Sept. 4 1 to 4 p.m. Sound Safety

100 K Area

parking lot south of MO-401

Aug. 28 7 to 10 a.m. BC Sales

200 East Area

northeast gravel parking lot of 2101-M

Aug. 28 11 a.m. to 1 p.m. BC Sales
 Sept. 5 7 a.m. to noon Sound Safety

200 West Area

parking lot east of MO-281

Aug. 28 2 to 5 p.m. BC Sales
 Sept. 5 1 to 4 p.m. Sound Safety



VAN POOLS

Day & Zimmermann Protection Technology Hanford reminds employees to wear their badges. Vanpool and carpool drivers are responsible for ensuring riders are badged. If a passenger forgets his or her badge, Patrol must be informed at the barricades. For more information, look on the Hanford Web in the Projects and Activities section, Safeguards and Security at <http://www.rl.gov:1050/sas/pg1v3htm>.

BENTON CITY

Rider looking for a carpool or vanpool to 100K, 8x9 schedule. Call **LuElla Morrison** at 373-9769.

KENNEWICK

Opening in vanpool from Richland Wye to 200W. 7 a.m. to 4:30 p.m. shift. Park your car at the Park 'n Ride and ride with us. Discount for drivers. Call **Fred Sargent** at 373-2106. 8/27

Looking for riders on a vanpool to PFP and West Tank Farms. 8x9 vanpool leaves Kennewick Albertson's on Edison and Clearwater and picks up at Columbia Basin Racquet Club. Contact **Abe Garza** at 373-2898. 8/27

RICHLAND

8x9 vanpool to 200E needs a rider. Leaves Hanford bus lot at 6:30 a.m. and drops off at 2750-E and MO-277 (behind 2750-E). Arrives back at bus lot at 5 p.m. Mondays through Thursdays and 4 p.m. Fridays worked. Contact **Dave Hedengren** at 373-5094. 8/27

Two riders to 200E needed for Vanpool No. 182, 8x9 schedule. Leaves 2440 Stevens Center at 6:20 a.m. and drops off at 2750-E and 2704-HV. Call **Rick Janecke** at 376-3677 or **Peggy Duvall** at 376-2622. 8/27

WEST RICHLAND

Vanpool No. 120 to 200E needs one 8x9 rider. Leaves Flat Top Park at 6:10 a.m. Drops off at 2750-E, WESF, 2727 and 2025-EA. Contact **Marion** at 372-0383. 8/20♦