

the Y-12 times

A newsletter for employees and friends of the Y-12 National Security Complex

Inside ...

Anatomy of a weapon

(pg. 2) New technology reveals what's inside without destroying weapon components.

LINKS to a new generation

(pg. 5) Atlanta STEM students visit Y-12, ORNL and ORAU.

Visit us!



July 2012



A Star shines on Y-12

Y-12 is currently one of 28 U.S. Department of Energy Voluntary Protection Program Star sites nationwide.

Y-12's Safety for Life journey is now lighted by the U.S. Department of Energy Voluntary Protection Program Star. The flag was presented to Y-12 June 5 by the then Acting Manager of the Y-12 Site Office Dan Hoag.

"Achieving the DOE VPP Star Status is a significant achievement for B&W Y-12," Hoag said. "It is a symbol of excellence in the pursuit of health and safety. VPP represents a strong commitment by Y-12 employees, the unions and management to continually strive for a safe workplace."

"It's only the beginning of this Safety for Life journey we are on," said Mike Thompson, Atomic Trades and Labor Council vice president.

Senior Vice President and Deputy General Manager of Operations Bill Klemm said, "The objective isn't the star. The objective is everyone's safety. I give credit to everyone at the plant for us receiving the VPP Star level status."

Congressman Chuck Fleischmann who represents the third congressional district of Tennessee was one of several local dignitaries at the ceremony. "To be recognized as a DOE VPP site shows you and your employees promote safety and health excellence. It shows that there is a team atmosphere among workers," he said. "The work Y-12 provides our nation is important. By becoming a DOE-VPP site, you are showing your dedication to the safety and security of our nation."

New technology reveals weapon characteristics without destroying part

Often in our everyday life we want to know about the inside of something without opening it. Were these eggs fully boiled? What's this pain in my left side? Do I need to read this e-mail, or is it junk mail?

Similarly, the National Nuclear Security Administration is tasked with knowing certain characteristics inside nuclear weapons parts. To make the task of sampling gas within a weapon less destructive, a new system has been qualified for use at Y-12.

Developed in collaboration with other NNSA sites, the nondestructive laser gas sampling (or NDLGS) process is an automated system that combines the latest in laser processing and gas-sampling technologies. A component's internal gases can be sampled, and the part can be resealed and reused.

"The team worked very hard and took seven months out of the original schedule to meet NNSA's earlier need date," explained the NDLGS Code Blue manager. "There are very few project teams inserting new technology into a nuclear facility that can negotiate that type of schedule loss. This is a tribute to the great technical and operations people assigned to this project — they did an amazing job."

The NDLGS system demonstrated first use on a W76 Retrofit Evaluation Systems Test, or REST, unit in early May — approximately one month ahead of the compressed schedule. When a weapon system is part of a Life Extension Program, a set number of assembled units are randomly selected before being shipped to the U.S. Department of Defense. These REST units are returned to the production sites, where



New technology at Y-12 samples gases within a weapon unit without requiring the unit's destruction.

they are evaluated for their assembly and build quality. NDLGS offers a nondestructive means of evaluating the REST unit and allows the potential to reuse rather than rebuild.

NDLGS is anticipated to save several million dollars per year and to be used also for surveillance activities on systems in the active stockpile.

WWII gun barrel restyled as first press

During World War II, Americans grew accustomed to conserving resources — gasoline was rationed and materials such as metal were salvaged. Those "reuse and make-do" habits spilled over into the post-war years and at times touched Y-12.

A notable example is a gun barrel that saw duty on a WWII battleship. After some modification, it became the first pressure vessel in Building 9204-2. "Isostatic presses, which exert equal pressure from all sides, are typically considered gun barrel technology, so this was a natural fit," said the manager of Special Materials Production.

The adaptation seems to be near-perfect repurposing of a metal cylinder designed to withstand very high pressures. On one end was the magazine plug assembly, which swung up and out, creating a nice opening to insert the material to be pressed. The former "business end" of the gun barrel was sealed, and hydraulic fittings were installed to pump oil inside the vessel and create the desired pressure.

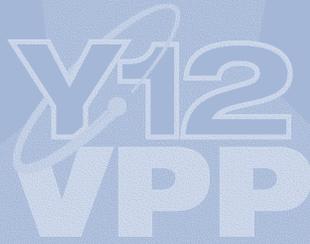
The resulting 16-inch-diameter, 10-foot-deep pressure vessel was the first to compact lithium hydride powder into a solid in the mid-1950s. "The gun barrel PV was probably a quick and dirty way to get into the isostatic press business," said the SMP manager. A few years later, two higher capability vessels (PV-3 and PV-4) were purchased, and PV-1 was retired.

Although inactive for decades, PV-1 remains an example of the minimum technology for an isostatic press. "It's still a good way for



Operators get acquainted with press operations through Pressure Vessel-1.

our new operators and nuclear nonproliferation folks to see and understand the process," the SMP manager said.



Safety for life

A Star shines on **Y-12**

star, cont'd from page 1

The strong commitment from management, the ATLC, the Knoxville Building and Construction Trades Council, United Steelworkers, and all members of the Y-12 family made the star achievement possible.

“Now we have this renewed focus with everyone participating; I will be watching closely to see that we have established a new safety culture — Safety for Life. I’m not going to let *you* get hurt at *our* facility,” President and General Manager Darrel Kohlhorst said.

No one should think the journey is over because the star flag is flying at the New Hope Center. VPP facilitator Sam Lariviere said, “The attainment of the flag is a milestone. We have to work to continuously improve.”



We can achieve Safety for Life with everyone working together to make every day a safe day.



Top left: Darrel Kohlhorst gives pipefitter Gordon Adkisson (right) an ice cream at the VPP Star celebration. Top right: Sabrina Hampton of Production enjoys a cold treat. Bottom from left: Atomic Trades and Labor Council President Steve Jones, ATLC Vice President Mike Thompson, Y-12 President and General Manager Darrel Kohlhorst, the then Y-12 Site Office Acting Manager Dan Hoag and Senior Vice President and Deputy General Manager of Operations Bill Klemm congratulate employees on receiving the VPP Star.

Ergonomist minimizes workers' pain

er-gon o-mist (ûr-gân ə-mîst) *n.*

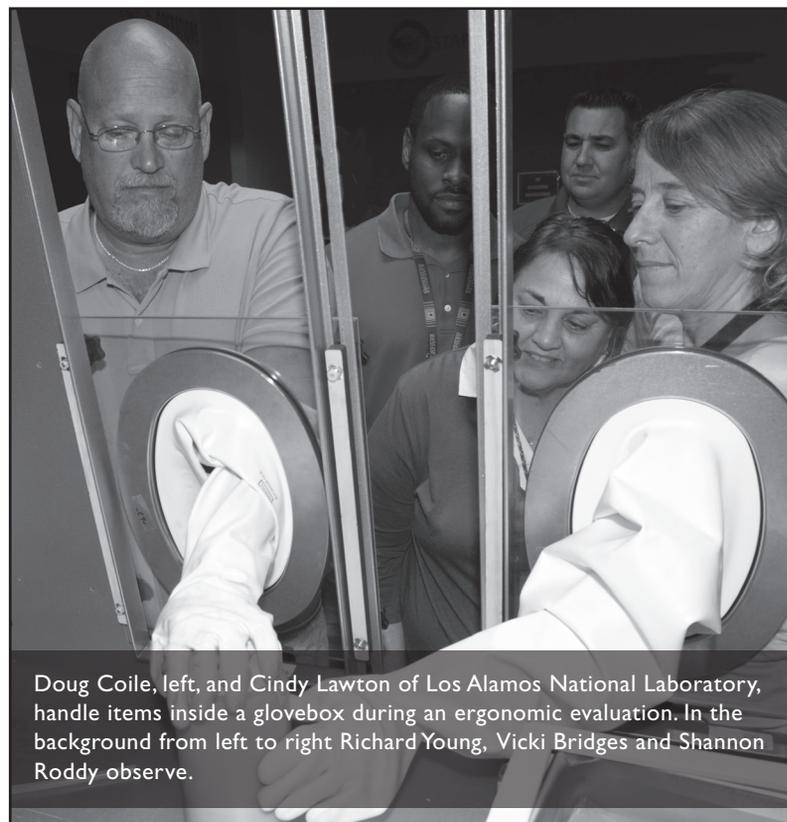
One who applies the science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort.

Cindy Lawton, an ergonomist from Los Alamos National Laboratory, doesn't want to feel your pain — she wants to eliminate it. She recently spent a week at Y-12 working with engineers and operators to evaluate the many glovebox designs for the Uranium Processing Facility.

Gloveboxes — more than 2,000 linear feet of them — are an important part of designing safety into UPF. According to Rodney Smith of UPF, the goal is to enable operators to work in their street clothes. Smith knows the operators play an integral role in glovebox design. He said, “We have to learn how the operators actually perform work in a glovebox.”

However, the ways in which operators work in gloveboxes may not always involve the best ergonomic position. That's where Lawton's expertise helps. She actually had a career as a physical therapist where she was treating many operators' shoulder, elbow and hand injuries.

So Lawton, in effect, transitioned from treating to preventing injuries as an ergonomist. She has specific expertise with gloveboxes and even wrote the American Glovebox Society's “Guideline for Glovebox Ergonomics.”



Doug Coile, left, and Cindy Lawton of Los Alamos National Laboratory, handle items inside a glovebox during an ergonomic evaluation. In the background from left to right Richard Young, Vicki Bridges and Shannon Roddy observe.

At UPF, Lawton reviewed glovebox designs for approximately 75 different processes to determine where the designers might need further assistance. Her cursory review, discussions and observations with the designers and operators will assist in evaluating the maturity of each design, thus facilitating the prioritization of further design work.

Rewriting procedures: another step in strengthening CONOPS

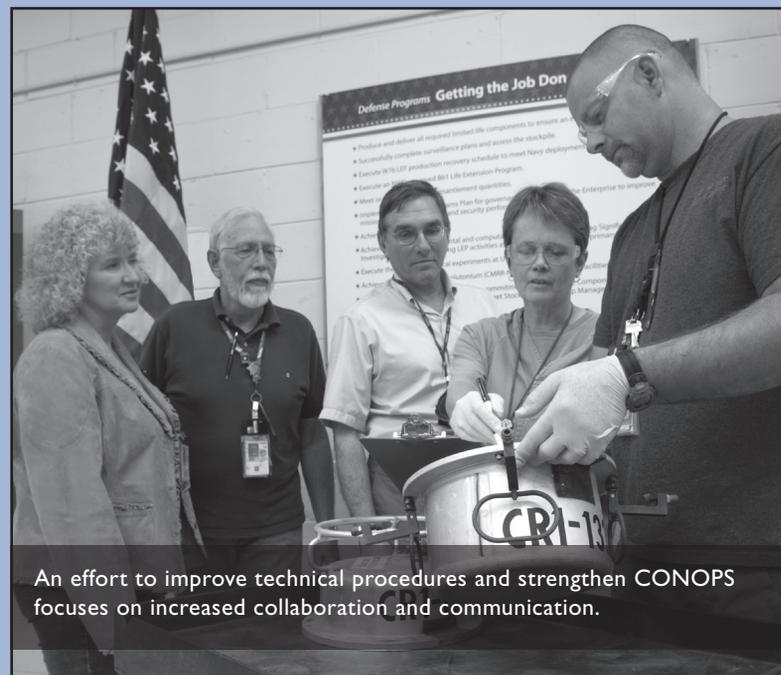
One area targeted for improvement in the Y-12 Conduct of Operations Performance Improvement Plan issued last September was technical procedures.

Engineering's Mike McEahern said, “Over time, procedures had been revised extensively. Wording and controls had become layered and repetitive, and the document's ability to support the user in the field was lost. In some cases, the addition of material had caused procedures to become unwieldy from the perspective of the user.”

In January, a pilot effort began to rewrite system operating procedures for dismantlement operations. The first improvement area, development, emphasized re-engaging operators and supervisors in procedure development to ensure all executable tasks were clearly defined and the document accurately reflected the work performed. The revisions required process engineers, assemblypersons, supervisors and procedure writers to work closely.

“When the pilot project began, we were working the dismantlement using the old, cumbersome procedure,” said a process engineer. “As the operation was performed, we watched and rewrote the procedure, then verified it with those performing the work.”

Some procedures were consolidated. The number of precautions and limitations were reduced because the information is covered in other trainings or briefings. The next step, review and comment, included an extensive review process involving many departments.



An effort to improve technical procedures and strengthen CONOPS focuses on increased collaboration and communication.

The final step, validation, involved multiple organizations evaluating the procedure as the assemblyperson performed the operation and then reaching a consensus.

One assemblyperson said, “With less complicated procedures, we have more confidence in performing each step.”

Oak Ridge visit LINKS STEM students to past, present and future

Students today have no trouble connecting with each other through social media. But, how do they make the necessary connections for rewarding and successful careers? For some metro-Atlanta high school students who recently visited Y-12, LINKS is the answer.

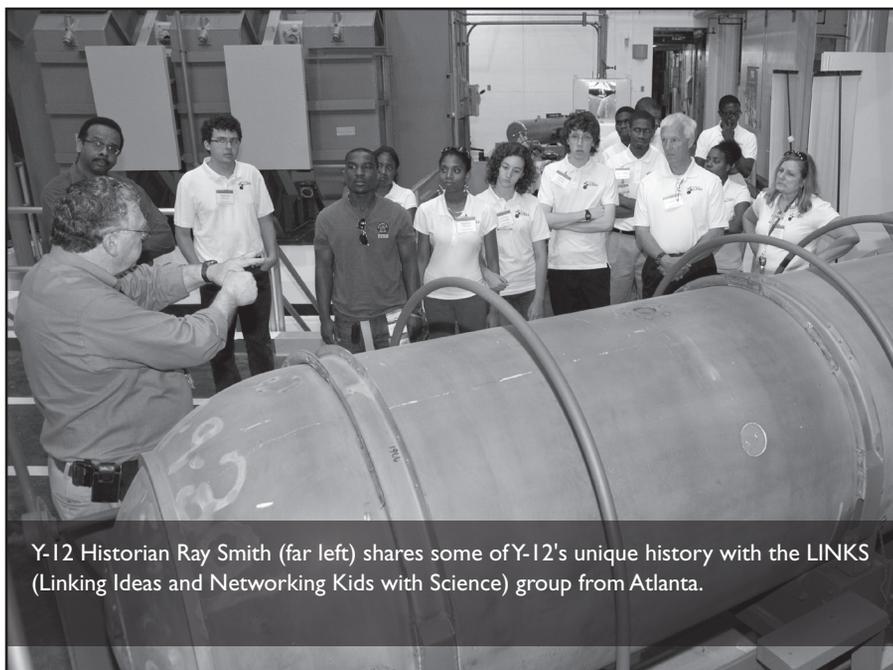
LINKS — Linking Ideas and Networking Kids with Science — is an Atlanta-based educational program created in 2002 by Fernbank Science Center to further inspire students in science, technology, engineering and mathematics. Affiliated with the Georgia Institute of Technology, LINKS collaborated with Y-12, Oak Ridge National Laboratory and Oak Ridge Associated Universities to offer LINKS students a unique opportunity to explore the nuclear industry in Oak Ridge May 29–June 1.

Eleven students visited the Y-12 History Center, toured the Manhattan Project calutron magnets in Building 9731, viewed the Highly Enriched Uranium Materials Facility from Bear Creek Road and surveyed the 811-acre site from atop Chestnut Ridge. Their trip also included excursions to Oak Ridge National Laboratory to learn about current research from top scientists and engineers and Oak Ridge Associated Universities to discover future internship opportunities.

By giving the students a chance to experience Oak Ridge, they gained a better understanding of the tremendous effort required to develop our nation's nuclear resources and ensure national security. As these students consider different STEM careers, this trip will be an important link in helping them decide their career paths.

LINKS —

Linking Ideas and Networking Kids with Science



Y-12 Historian Ray Smith (far left) shares some of Y-12's unique history with the LINKS (Linking Ideas and Networking Kids with Science) group from Atlanta.

STAYING on target

Completing the Voluntary Protection Program roadmap was something about 4,500 of us did to support becoming a U.S. Department of Energy VPP Star site. One employee wanted his co-workers to know just how serious he is about maintaining safety.

Ronnie Barbra, a United Steelworkers steward and member of the Oak Ridge Reservation Power Operations group that works the Elza Yard, had undergone major surgery and was in the hospital. Barbra was concerned about completing his roadmap with the rest of his team. It wasn't surprising to his supervisor, Karla Wright, that he showed this kind of dedication.

"Ronnie strives to set a good example in all things, especially safety related," Wright said.

So Wright visited Barbra in the hospital, and together, they completed the roadmap that was validated April 25.

Barbra, who is recovering, said he is committed to VPP because he recognizes the importance of health and safety. His recent illness has made him re-evaluate his priorities.

Being safe isn't something to take lightly no matter what you're doing, but it's especially important when you work on the 161,000-volt electrical system that energizes Y-12. For the USW crew, the Target Zero goal has been maintained since June 2001.

When VPP was introduced at Y-12, it was a no brainer to this group. "VPP is another valuable contributor to a very serious conduct of operations that we all follow," member Maury Anderson said. He and his team all completed their VPP roadmaps early in the process.

There's one thing every one can do to practice safety; member Patrick Hubbard said, "Watch out for your fellow workers and watch out for all the dangers and hazards that might be there."



Left to right: Patrick Hubbard, Karla Wright, Joe Williams, Billy Hyde and Wayne Russell. Not pictured: Maury Anderson, Ronnie Barbra and Mike Hitson.

Cancer Support Group launches **new buddy program**

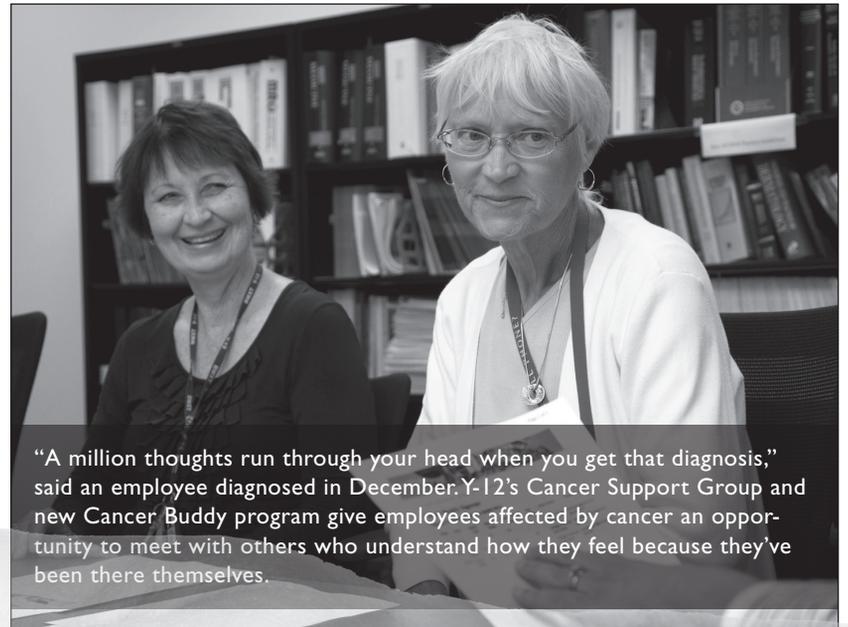
“I remember watching hot air balloons from my hospital bed during the World’s Fair,” said a Cancer Support Group member as she recalled her cancer diagnosis and treatment in 1982. In 1999, she confronted a recurrence and fought back again with various treatments. Today, she “feels good.”

“When it strikes, you feel scared and distraught,” she said, “but having someone who’s also been through it can help calm you down.”

As patients, caregivers and survivors, Y-12’s Cancer Support Group members have personally experienced how having a strong support system can help another individual confront the disease and overcome it. That’s why the group, formed less than a year ago, created a new program called “Cancer Buddy.” The program pairs Y-12 employees affected by cancer with those who have been through similar experiences.

“The idea for the Cancer Buddy program came from some of our group members,” said Rhonda Bogard, group lead. “Although local and national cancer support groups offer buddy programs, our program is unique because it connects people in our own community at Y-12.”

One group member knows firsthand the value of a buddy. When his wife was diagnosed with cancer, he began researching the disease and talking to others at Y-12. Through those connections, he



“A million thoughts run through your head when you get that diagnosis,” said an employee diagnosed in December. Y-12’s Cancer Support Group and new Cancer Buddy program give employees affected by cancer an opportunity to meet with others who understand how they feel because they’ve been there themselves.

met a Y-12 employee whose cancer diagnosis, stage and treatments were exactly the same as his wife’s. The group member said, “It was awesome how much information he shared, and he was in remission, which gave us hope. I’m hoping that the Cancer Buddy program will help others at Y-12 make that same kind of connection.”

Life-saving equipment

Y-12 first responders began facilitating the Advanced Medical Life Support program in May. With this new technology, they have the capability to begin tests like an EKG while in transit and relay the results, allowing hospital personnel to have the right team assembled and begin treatment as soon as they arrive.

“Our citizens here deserve this service,” said Fire Chief Scott Vowell.

Y-12 paramedics were trained in advanced cardiac life support, advanced medical life support and pre-hospital trauma life support by instructors of the Roane State Community College Paramedic Program.

“Our goal is to provide the best possible patient care to the people of Y-12,” said Ambulance Director Ralph Honeycutt. From allergic reactions and car accidents to heart attacks and falls, Y-12’s response units are fully equipped and ready to assist employees.

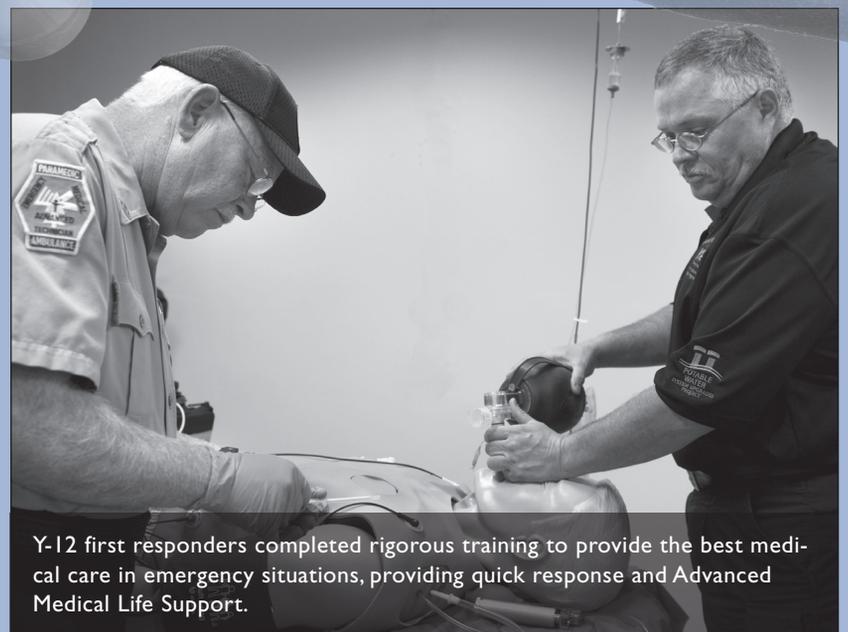
These first responders already have a fast response to calls, but they’re excited about having this new capability. When a 911 call is made on-site, it is announced over their building’s public address system, allowing responders to hear the call as it is made. This notification gets them rolling before the call is even dispatched through their radios.

Honeycutt stresses the importance of calling 911 at the first moment of distress. “When something happens, call 911 immediately to give yourself an opportunity to be a success story. If there’s any doubt, call 911,” he said.

Have an Emergency?



at the first moment of distress



Y-12 first responders completed rigorous training to provide the best medical care in emergency situations, providing quick response and Advanced Medical Life Support.

Around Y-12 ...

- On June 12, nearly 130 children of employees visited Y-12 as part of the 2012 Bring Our Children to Work Day. Children entering grades 8–12 in the fall were eligible to attend, and their visit included touring the Central Training Facility, Building 9731 and the south ridge; riding the train at East Tennessee Technology Park and going to the American Museum of Science and Energy.
- Representatives from the U.K. Atomic Weapons Establishment, Ministry of Defense and National Nuclear Security Administration Headquarters visited Y-12 in June to discuss new technologies and production processes.
- From June 11–14, employees were invited to preview the new Y-12 History Center facility — which includes a history research library and video viewing area — and the new Media Center in the New Hope Center. Museum exhibits installed in upcoming months will be tied to Y-12's award-winning documentary miniseries *A Nuclear Family*. The refurbished Y-12 History Center with interactive and primarily video-based exhibits will celebrate a grand opening in fall 2012.
- During the month of June, 93 employees accepted a LiveWise challenge to include 30 minutes of physical activity daily. Physical activity not only increases chances of living longer, but it also reduces the risk of high blood pressure, heart disease and some types of cancer.
- Dr. Lisa A. Maier, chief of the Division of Environmental and Occupational Health Sciences at National Jewish Health, recently spoke at the Beryllium Support Group of Oak Ridge meeting in the New Hope Center. Maier is one of the world's leading medical researchers in chronic beryllium disease and shared information about beryllium toxicity, how it is diagnosed, treatment, management, current research and trends.
- Y-12 makes sure old utility poles aren't sent to the landfill by donating them to outside agencies. Lone Mountain State Forest in Morgan County picked up more than 100 poles, cut in smaller sections, to use in fencing borders around parking areas and will use some as structure posts for a pavilion to protect firefighting equipment. The U.S. Department of Energy used old Y-12 poles at a training facility and to build a bunker façade on a live firing range. Between 50 and 100 poles are still available, and other area establishments, including the Knoxville Zoo, have expressed interest.
- Janet Murrill from Safeguards, Security and Emergency Services received an Excellence in Emergency Management Award, which is presented annually to one U.S. Department of Energy contractor employee for outstanding contribution to the emergency management profession. Murrill received the award at the annual DOE Emergency Management Issues Special Interest Group meeting held in Seattle in May.
- Y-12's Environmental Management System earned a near perfect score of 99.2 percent at its external assessment conducted in April. The assessment team from the University of Tennessee Center for Industrial Services identified no nonconformances and concluded Y-12's EMS fully meets ISO standards.
- The Communications Services group received nine "V" Awards from the Volunteer Chapter of the Public Relations Society of America and 12 awards from the East Tennessee Chapter of the Society for Technical Communication's Technical Publications Competition. The awards were for communications produced in the previous year.



JULY

47 years

Production: Harvey L. Stevens

44 years

Quality Assurance: Ronald P. Allen

43 years

Resource Management: Victoria Steward

42 years

Engineering: Gary W. Eckert

Material Management: Charles H. Neal

Resource Management: Amos R. Chandler and Erby L. Harris

Utilities Management: David Vann

40 years

Quality Assurance: Thomas W. Dews

Production: Robert L. Runkles and

Robert L. White

35 years

Engineering: Harold M. Johnson and

Robert B. Richmond

Information Technology: Tate J. Brown

Labor and Employee Relations: Samuel S. Long

Maintenance Support: Glen E. Hill

Nuclear Materials Control and Accountability:

Edward A. Tyl

Production: Mattie D. Gallaher and

Steven H. Jackson

Resource Management: Curtis D. Anderson and

Johnny R. Diden

Technical Integration: Charles T. Caruthers

30 years

Analytical Chemistry: Jerry B. Wilson

Nuclear Materials Control and Accountability:

Janet L. Plemmons

Plant Services: George A. Renfroe

Resource Management: Terry L. Bowers

Utilities Management: Roscoe G. Wilson Jr.

25 years

Budgets: Kimberly R. Johnson

Information Technology: Rhonda L. MacIntyre and Michael P. Muir

Nuclear Nonproliferation and Global Security

Programs: Kenneth J. Maddux

Office of the President: Lois M. Passmore

Radiological Control: Laurie L. Crutchfield

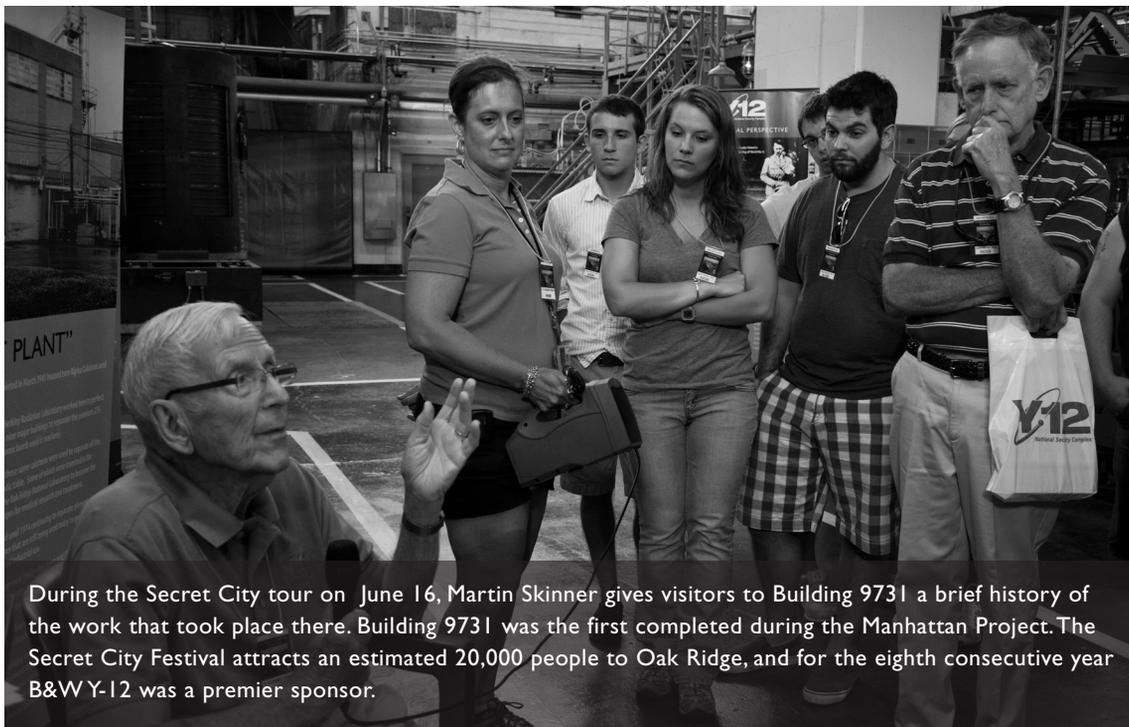
20 years

Financial Performance Assessment:

Renee B. Pierce

Production: Daniel R. Butler

Radiological Control: Lisa M. Snapp



During the Secret City tour on June 16, Martin Skinner gives visitors to Building 9731 a brief history of the work that took place there. Building 9731 was the first completed during the Manhattan Project. The Secret City Festival attracts an estimated 20,000 people to Oak Ridge, and for the eighth consecutive year B&W Y-12 was a premier sponsor.

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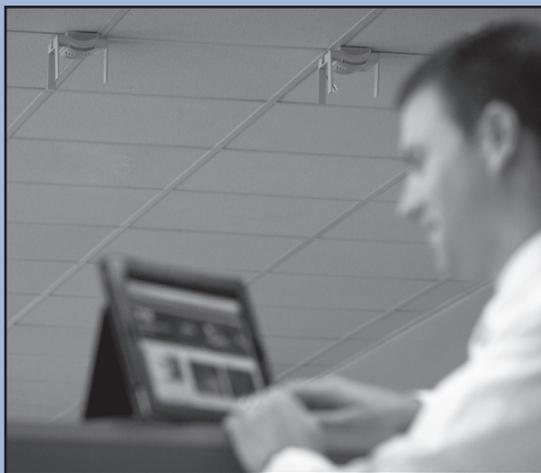
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Wireless restrictions

- Do NOT use a personal device to connect to Y-12's USN.
- Even if you're using government-furnished equipment (GFE), do NOT connect to both the USN and the visitor wireless network at the same time.
- Do NOT connect your personal device to any GFE device.
- Do NOT store Y-12 data on your personal device.
- Do NOT use any Bluetooth device (most notably, hands-free headsets).

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Going wireless in JCC

Wireless is spreading into the Y-12 site. It started in New Hope Center and Uranium Processing Facility team offices, and its most recent takeover is parts of Jack Case Center. Inhabitants of that building have only to look to the ceiling for evidence. Wireless access points provide connectivity to two networks — Y-12's familiar internal unclassified sensitive network (or USN) and the external internet (or visitor wireless network).

“This is still Y-12, but accessing the visitor network is a lot like using Wi-Fi at Starbucks,” said Kim Cobb of Information Technology.

Cobb cautioned that the devices permitted on-site have not changed. People need to pay attention to signs and remember they must comply with wireless restrictions as well. For now, wireless has “gone live” in JCC's north wing, cafeteria and conference center (E2.C01 through E2.C10).

“Wireless is particularly useful for meetings where people need information away from their offices,” said Craig Thomas of IT. “This is true mobility,” added Cheu Moua, also of IT.

There's no need to place network drops, workers can be productive without being tied to their offices, and visitors can make use of downtime. Those benefits save time and money.

Wireless capability is expected soon in Building 9737, the Analytical Chemistry Laboratory at Union Valley and certain outdoor areas of the Y-12 site.

“ You have access when and where you need it. ”

Cheu Moua,
Information Technology