

the Y-12 times

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

Inside ...

Power surge

(page 2) Developing fuel for next-generation nuclear reactors, with backing from Microsoft's Bill Gates.

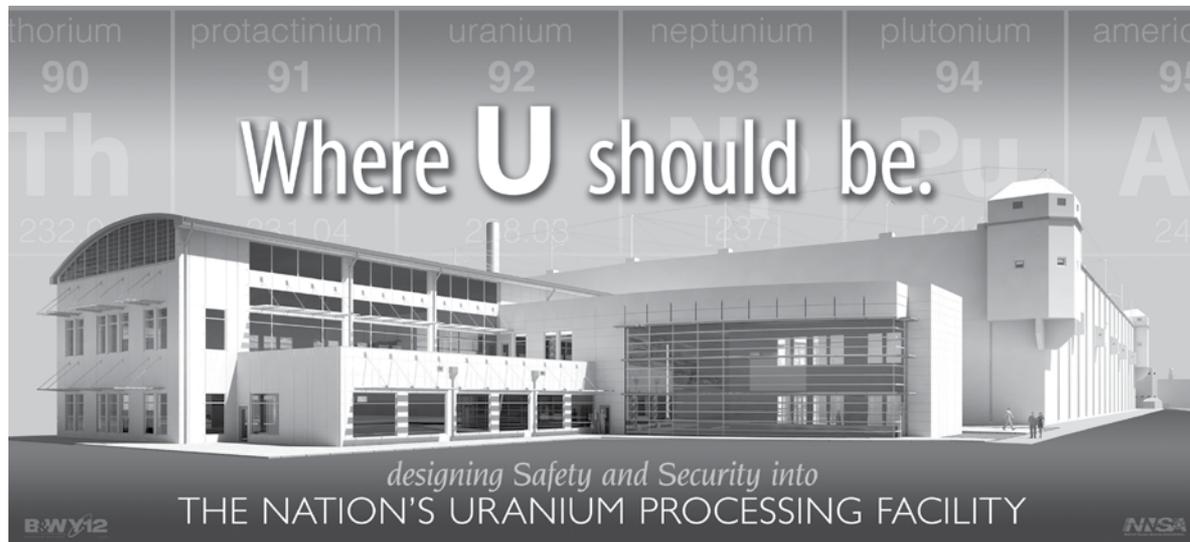
Summer fun

(pages 4-5) All aboard a bus or train and tour Y-12 and the Secret City.

Visit us!



August 2012



UPdate on UPF

Many phrases can be used to describe the Uranium Processing Facility. It is vital to our national security. It is the National Nuclear Security Administration's largest ever construction project and the U.S. Department of Energy's single largest capital investment in the state of Tennessee since World War II.

The enormity is astounding, but federal project director John Eschenberg said DOE has learned some things about large projects. They take larger projects and break out the separable parts as subprojects.

This approach, which Eschenberg referenced as "smart parsing," provides a couple of advantages. "It allows us to execute scope sooner, and it allows us to incrementally build confidence and credibility for the overall project," he said. Both of these factors go a long way toward maintaining the necessary support from Congressional appropriators.

There are currently four UPF subprojects as noted in the sidebar at right. The U.S. Army Corps of Engineers has been awarded two of these, Site Readiness and Site Preparation, which include relocation of Bear Creek Road, extension of the haul road and site grading. During this period, B&W Y-12 will also be demolishing Building 9107. Eschenberg expects work to begin this winter.

The West End Protected Area Reduction, often referenced as WEPAR, is currently in the B&W-led design phase of the project. The Site Preparation subproject is 100-percent design complete, and Eschenberg hopes to begin that work scope later in 2013.

While looking forward to showing physical progress on the project, Eschenberg is more keenly focused on continuing to drive the maturity of the facility's design. He stated, "It's essential to deliver a high-confidence cost and schedule baseline by September 2013." In promoting that goal, he noted that being deliberate in this phase of the project will yield "big dividends during construction."

UPF subprojects

Site readiness — relocating Bear Creek Road, extending haul road, and installing potable water lines and wet spoils

West End Protected Area Reduction — physical barrier, sensors and portal to reduce the size of the perimeter intrusion detection assessment system

Site preparation — demolishing building and electrical systems, grading, and engineered soil erosion control

Facility and 9212 capabilities — building construction, installation and startup of initial high-priority enriched uranium capabilities and supporting utilities

Power Surge: Uranium alloy fuel for TerraPower

TerraPower, a private company backed by Microsoft founder Bill Gates, is developing next-generation nuclear reactor technology. And Y-12, armed with its expertise in uranium, is providing TerraPower with technical support.

Y-12's role is to investigate different approaches to making metallic uranium-zirconium slugs, the fuel for the traveling wave reactor.

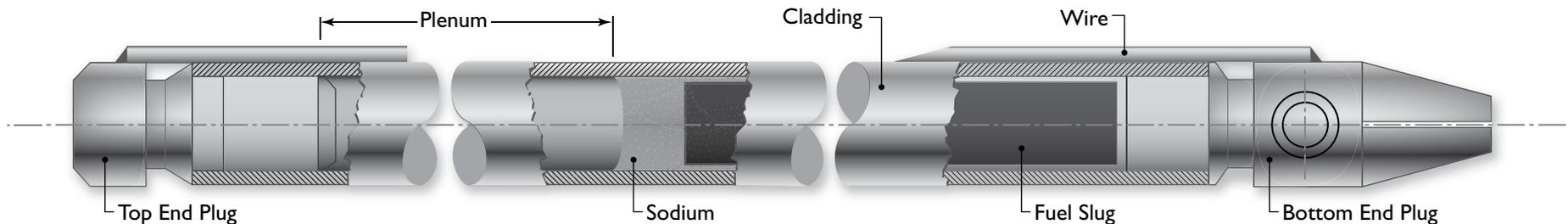
The TWR requires a small amount of enriched uranium in metallic form to start a chain wave reaction that slowly burns depleted uranium to maintain power levels. Y-12's decades of experience in working with enriched uranium and metallic uranium alloys make the site one of only a handful in the nation that can support this work.

"We cast, machine, microwave and perform many other operations with metallic uranium, so we have the facilities, infrastructure and skills needed to create the test fuel," said John Creasy, Y-12's advanced reactor and materials design expert.

Moreover, as the nation's storehouse for enriched uranium, Y-12 has access to the special nuclear material needed for the TWR. The reactor requires metallic uranium that is on average 10 to 12 percent enriched; however, the commercial nuclear power industry is licensed to operate using uranium that is less than 5 percent enriched.

"The feed material TerraPower needs has to come from down-blended weapons-grade uranium or must be obtained elsewhere and worked at Y-12. In either case, working with enriched uranium alloys is our specialty, so we're a perfect match for the job," said Chris Robinson, director of Y-12's Nuclear Materials Initiatives.

Fuel slugs, each about the diameter of a pencil, can be made several ways. Using different methods, Y-12 will create sample slugs and then "down select" the best-performing, most cost-effective approach.



For TerraPower, Y-12 will fabricate test fuel pins for irradiation within a research sodium fast reactor.

Y-12 gets gold

It might be a coincidence, but it's pretty nifty that Y-12 received notification of its gold medal in time for the 2012 Summer Olympic Games.

You might remember last fall the Sustainability and Stewardship Program held a personal electronics recycle event as part of achieving gold level in the Federal Electronics Challenge. Thanks to completing that task along with many others, Y-12 will receive the 2012 FEC Gold Level Award in September.

Durand Carmany, director of Projects, Sustainability, and Facilities, said, "This award is a little more personal. Last year's recycle event allowed employees and the company to partner together for something that will ultimately provide needy families with computers they may not otherwise be able to afford. I think that's something we can all feel good about."

The Sustainability and Stewardship Program knows employees appreciated the personal electronics recycle event — more than 6,100 pounds of materials were collected. "We are planning another electronic recycling event," said Jan Jackson of Sustainability and Stewardship. "We're in the beginning stages, so watch YSource [Y-12's intranet] for details."

Carmany said, "Having this event helped the site achieve gold-level status with the FEC, which shows our customer and the public we are continually improving our processes and mindsets to be a leaner, greener Y-12. The event gave us an opportunity to be good stewards of the environment by allowing our employees to recycle personally owned electronics that may have otherwise made it to the landfill."

FEC is an Environmental Protection Agency voluntary partnership program that helps federal facilities purchase make greener choices while reducing the environmental impacts.

Y-12 commitments help achieve gold status

- Y-12 establishes and maintains standard desktop configurations that are EPEAT registered and Energy Star® qualified products. Information Technology screens all procurements and challenges all proposed procurements that do not meet the Y-12 standard.
- Y-12's Environmental Management System, managed by Environmental Compliance, addresses electronics stewardship.
- Y-12's Information Technology has implemented power management tools to eligible CPUs, laptops, etc.
- The lifespan of the equipment used by Y-12 is expanded when possible through software upgrades and obsolete equipment is recycled. The equipment is used by Y-12 longer than the industry average due to the ability to complete upgrades.
- Y-12 is implementing paper reduction methods such as using duplex settings and expanding the use of electronic forms and digital signatures.

Visitors get a feel for Y-12

Y-12 welcomes thousands of visitors each year, for good reason. Engaging directly with government decision makers and the public is a great opportunity to showcase our people and our work. The more we highlight our successes, the more likely we are to secure funding and attract talented employees.

Senior Vice President and Deputy General Manager of Operations Bill Klemm explained the importance of visits

like the one earlier this year from Admiral James Winnefeld, vice commander of the U.S. Strategic Command, U.S. Department of Defense. "Since the DOD is the ultimate customer, they are also our advocate to Congress and the Administration," he said. "Admiral Winnefeld left Y-12 with a very good appreciation for the complexities of our work, the competencies of our work force and the success of our efforts."

As for sustaining a high-caliber work force, it's hard to overemphasize the importance of students. "We are a high-tech manufacturing facility, and we look for the best and the brightest," said Ken Keith, acting vice president, Engineering. "Having the opportunity to bring students of all ages to Y-12, even if only to introduce them to a few of the things we have accomplished and can perform, may interest them in science and technology careers. Down the road, we may have a larger pool of local talent to continue the Y-12 'can do' attitude."

In 2011, there were more than 8,500 visits — an impressive number, but relatively small compared with a banner year like 2009, which saw more than 13,000 visits. That was when the Highly Enriched Uranium Materials Facility came on line. Alice Brandon, acting director of Public and Governmental Affairs, said, "I expect another surge when the Uranium Processing Facility breaks ground."

Steven Wyatt, National Nuclear Security Administration Production Office Public Affairs manager, emphasized VIP visits are a key part of our overall communications strategy at Y-12. "Facility tours and briefings enable us to tell our story about the NPO mission and the continued need for transformation," he said. "These visitors leave Y-12 with a much deeper appreciation for our work and the unique role that Y-12 plays in national security."



During an April 2012 visit, Congressman Steve Womack of Arkansas (center) gets a feel for how materials are managed safely.

Typical visits

- **VIPs** (U.S. Strategic Command, Senate and House Armed Services Committees, Joint Chiefs of Staff, congressional staff, NNSA Headquarters staff, state officeholders)
- **Information exchanges/benchmarking** (nuclear facilities in England, South Africa, Russia and France)
- **Program funding reviews**
- **Oversight from regulatory agencies** (Nuclear Regulatory Commission, Defense Nuclear Facilities Safety Board)
- **Community outreach** (leadership teams, students)

Taking inventory of work processes

Sensitive property inventories must be done every year and account for things like CPUs, high-risk items and cameras. The latest inventory, conducted in May, was done in record time and saved the site an estimated \$309K. The difference came from newly adopted inventory techniques that originated as part of the Governance Transformation initiative to streamline work processes.

Historically, sensitive property inventories chew up time and resources. According to Lyle Bennett, Property Management, the 2009 sensitive inventory took 68 working days and more than 3,000 custodians to complete. By comparison, the May campaign took 15 days and involved only 730 custodians. "That's a huge difference to the average property custodian whose primary mission at Y-12 is not performing inventories," Bennett said.

Bennett analyzed DOE requirements and found that Y-12 could take advantage of electronic inventory techniques by employing technology already in place. Specifically, the equipment confirmation we all do periodically when we start our computers is now used for inventorying computer equipment. This "ping" replaces the need to do a physical inventory on each CPU.

"Property Management uses service order records as an inventory 'touch' or a verification of the location of the equipment. The combined pings and touches resulted in a decrease in the number of items needing confirmation by nearly 8,000 items, because these were already considered counted," Bennett said.

The improvement was astonishing. "I know of one division manager who remarked that he didn't even know inventory was going on," Bennett said. "Twelve months before, he was talking about inventory being such a disruption."

See Y-12 as a newcomer

During the summer, it's common to see bright faces visiting Y-12. For 2012, 52 summer interns are gaining real-life experience. In late June, more than 100 8th-12th graders participated in Bring Our Children to Work day, and as part of the Secret City Festival, visitors toured the site. Read on to get the lowdown of what these newcomers take away from Y-12.

School-aged children ride the 1950s vintage Secret City Excursion Train through the former K-25 site.

Y-12's future is on-site

Fifty-two summer interns from 27 universities are at Y-12 for 11 weeks, working in fields from nuclear engineering to public relations.

Tim Reed, a senior in nuclear engineering from the University of Tennessee, came to Y-12 because of the strong recommendation from classmate Alex Langa, who hired into Y-12's Engineering Rotation Program. "He described his experience thus far as more than fulfilling," said Reed. "He said the work he was doing was both intellectually stimulating and purposeful on a national level. With a recommendation like that, I couldn't pass up the opportunity to gain valuable experience at Y-12."

Now in its 11th year, the summer intern program has grown to include a greater array of career development programs that target skills important to people early in their careers such as communication, networking, setting career goals and professionalism.

"We added some new topics such as how Facebook and your smart phone can negatively affect your professional

image and how to create and maintain a network of contacts," said Rachel Carvell, Talent Management consultant. "Our goal is to give interns the tools to grow professionally while they are here, gaining valuable technical skills to prepare them to begin their careers as well-rounded individuals."

Valarie Terrill, student programs manager, said, "For Y-12, summer interns are a good way to build part of our future work force. For the students, it's a good opportunity to gain work experience in their major."

Military veteran Terrence Brimfield, South Carolina State, left his young family for the summer. "I'm hoping that I'm able to gain some valuable experience in nuclear fuel fabrication and production," said the nuclear engineering major. "I've been able to leave my family in South Carolina because I know that it will pay off in the long run. I've approached this internship as an investment in our future."

The interns experienced Y-12 volunteerism, too, and participated in a special Day of Volunteering at the Children's Museum of Oak Ridge.

Bring Our Children to Work Day a feast for eyes and ears

Y-12's Public and Governmental Affairs hosted the biannual Bring Our Children to Work Day in June with 109 rising 8th–12th graders in attendance.

The day started at New Hope Center, where Y-12 Historian Ray Smith spoke about Y-12's past and present. Children then boarded buses for a tour similar to the Secret City tour and visited Building 9731 and the Chestnut Ridge overlook.

Farragut High School freshman Jake Fouche, son of Engineering's Dave Fouche, raved about his experience. "Just being inside Y-12 was a big thrill. Being able to see a calutron in real life, not a picture, is something I'll always remember."

The children also visited the off-site Oak Ridge Central Training Facility, where WSI's protective work force hones its skills. Upon arrival, they heard what many Y-12 employees might never hear — the noise of a Dillon reloader firing 3,000 rounds per minute. This prolonged, cacophonous burst would originate from the turrets of the BearCats that troll Y-12 if such heavy-duty response were required. Led by WSI personnel, children took turns shooting turkeys using an indoor simulation device and shooting outdoor targets using Airsoft pistols and rifles.

Oak Ridge Fire and Rescue, contracted by the U.S. Department of Energy to serve East Tennessee Technology Park, and K-9 Search on Site forces also demonstrated their capabilities before the children headed to ETTP. There they boarded the 1950s vintage Secret City Excursion Train and rode through the grounds of what used to be the K-25 Gaseous Diffusion Plant. The day ended with a visit to the American Museum of Science and Energy.

The view from Chestnut Ridge

Ashley Hartman (below), a University of Tennessee graduate student working at Y-12, shares her perspective as a Secret City bus tour participant.

I decided to hop on a Secret City bus tour. A couple of highlights of the 1-hour tour were viewing the vast site from atop Chestnut Ridge and actually stepping into one of the 1940s buildings.

I also learned about the unlikely path of one of our own, Ray Smith. His career is a testament to the transformative power of Y-12. He has enjoyed two journeys — one as the associate director of Facilities Management and one as historian. In the same way Smith transitioned roles, Y-12 has adapted its missions to meet national needs.

Smith proudly shared that Y-12's history will be preserved through recent congressional actions to create a Manhattan Project National Historical Park. Building 9731 will be included in the future park and was also one stop on the tour. As I walked through the front door of that building, I felt as though I'd stepped into a time capsule. The calutrons are an imposing reminder of the enormity of the Manhattan Project.

Now, the site is evolving with "more changes going on right now at Y-12 than at any time since the Manhattan Project," Smith said. The view of Y-12 from the ridges will be a drastically different landscape after the Uranium Processing Facility is built. This transition will be a demarcation in Y-12's history, sealing the legacy of the past and welcoming the future. My Secret City tour certainly reemphasized the value of embracing change.



Y-12 "MONEYBALL"



In the best seller *Moneyball*, Oakland Athletics manager Billy Beane turned his underfunded baseball team into a winner by finding hidden values in player statistics. With less money to spend on salaries than any other manager in the major leagues, he made the most of what he had by finding players who excelled at undervalued skills, such as getting on base by drawing a walk.

Y-12 is reaping the same kind of benefits by finding hidden savings; \$71.8 million in cost avoidances and efficiencies during fiscal 2011 means there will be more money to spend on buildings and projects.

"The savings came from 370 initiatives across the plant," said Abe Mathews, Productivity Improvement. "Every organization did something. Most ideas come from people who have better ideas of how to get the work done. They wonder, 'What if we did it this way?'"

Some of the savings from fiscal 2010, for instance, built the LiveWise exercise facilities. "We were also able to do more dismantlement and production for our customers because we carried out our existing work more cheaply," Mathews said.

"This program is about how to get more work done with what we have. If we're more efficient and do our existing work at a lower cost, that brings more work here."

Safety CAN be fun

Employee Team 74 co-lead Rhonda Morgan has worked to bring her team outside the box. "I want to make sure our team has fun with safety. It's imperative that we stay mindful of our surroundings throughout the day, both at work and at home," Morgan said.

Members of the team recently came to their meeting flaunting Hawaiian-style shirts, hats and sunglasses as the sound of The Beach Boys' "Surfin' USA" greeted them at the door.

Guest speaker Scott Vowell, Y-12 fire chief, discussed the importance of water safety as the team enjoys summer activities with family and friends. Team coordinator Amy Bengé discussed the harmful effects of the sun and how to properly apply sunscreen. She also provided tips on how to purchase the most protective sunglasses.

"This is the best day I've had at Y-12," said UV Mendez, Safeguards, Security and Emergency Services' division computer security officer.

Vicki Walls, Behavior-Based Safety and employee team coordinator, pointed out Employee Team 74's activities were mentioned by the U.S. Department of Energy Voluntary Protection Program assessment team in May. After the official VPP flag raising June 5, Walls said it's good to know that the team is keeping the safety energy going.

"This is the most exciting team at Y-12," Walls said. "Everyone should have a boost like this."

What will their next theme be? "Just wait and see," Morgan said.



At a recent employee team meeting, the beach wasn't too far from the minds of these Safeguards, Security and Emergency Services' employees.



50 years

Development: Matthew J. O'Hara

44 years

Production: David P. Bryant

43 years

Engineering: James A. Burgess and Loren E. Carey

Radiological Control: Boyd T. Gose Jr. and Danny P. Rowan

42 years

Facility Management and Programs: Albert McLendon Jr.

Maintenance Support:

Clarence G. Pickel

Production: Tulley G. Widner

35 years

Engineering: Monty L. Goins

Procurement Operations:

Deborah A. Mullins

Stockpile Programs:

Joseph T. Fisher

30 years

Benefit Plans Management:

Linda S. Martin

Environmental Compliance:

Cathy J. McCoy

25 years

Quality Control Inspection and

Testing: Deborah J. Boles

20 years

Communications Services:

Amy R. Alley

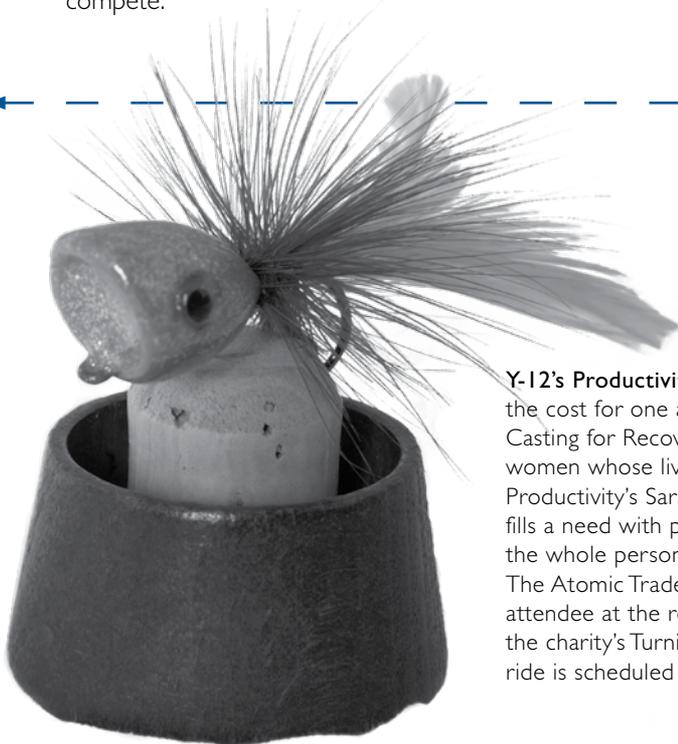
Production: John W. Crawford

Quality Programs: Melanie H. Ball

Around Y-12 ...

Small business honors

- **Tom Morris is acting vice president of Transformation and Projects, replacing Dennis Grove, who left Y-12 for an assignment with Bechtel National.** Morris, Mark Seely, project director for the Uranium Processing Facility, and Tom Smith, senior director of Strategic Planning and Transformation, will report Jim Haynes, deputy general manager for Programs and Projects.
- **Deputy General Manager and Senior Vice President of Programs and Projects Jim Haynes, spoke to employees via video about the importance of maintaining focus at work.** With summer activities, vacations and the contract rebid as potential distractions, Haynes used his experience during the aftermath of the Chilean earthquake as a backdrop for emphasizing the importance of worker focus.
- **Congratulations to Rob Jones, son of Environmental Compliance's Steve Jones, who is a recipient of the 2012 Babcock & Wilcox Scholarships.** Twelve scholarships were awarded this year based on academic achievement, SAT or ACT scores, financial need and the relevance of the student's course of study to the company's business. Jones will receive \$1,500 per year for up to four years of college-level study.
- **The U.S. House of Representatives Natural Resources Committee approved by unanimous consent a bill to establish a Manhattan Project National Historical Park** that would include Oak Ridge, Hanford, Wash. and Los Alamos, N.M. The bill now may go before the full House for consideration before the end of the year.
- **Y-12 presented a \$15,000 check to the Children's Museum of Oak Ridge for renovating the museum's rocket room.** The money will be used to refurbish an existing model rocket and to add interactive activities with a focus on outer space for preschoolers and early grade-schoolers. Chris Clark, Strategic Program Development, said, "Dollar-for-dollar, the Children's Museum of Oak Ridge touches more young children from a STEM perspective than any other activity in the region."
- **Twenty East Tennessee high school students participated in the ASM Materials Camp sponsored by Y-12, Oak Ridge National Laboratory and the University of Tennessee in late June.** The camp gives high school students a hands-on approach to learning about failure analysis, which is the study of why something broke down, blew up or fell apart. Camp co-director and Y-12 failure analysis expert Steve Dekanich said, "The students were taught to use the equipment from day one and took full advantage of it. They truly were the best of the best."
- **Eighteen Y-12 employees, friends and family members participated in the 10th annual KARM Dragon Boat Races** held June 23 at the Cove at Concord Park. Team leader UV Mendez said, "This was a great team-building experience as members from multiple organizations throughout Y-12 participated — including a couple of interns. We look forward to building next year's team to compete."



Y-12's Productivity group is seeking to raise \$1,200, the cost for one attendee to participate in this fall's Casting for Recovery retreat. CFR teaches fly fishing to women whose lives have been affected by breast cancer. Productivity's Sara Jarnigan said, "I think CFR definitely fills a need with physical activity, and it also supports the whole person through the trials of the disease." The Atomic Trades and Labor Council also sponsors an attendee at the retreat, and B&W Y-12 has sponsored the charity's Turning Leaf bike tour since 2010. This year's ride is scheduled Oct. 21.

Y-12 honored six small businesses for their exceptional contributions to Y-12's missions during fiscal 2011 at the annual Socioeconomic Programs Awards reception held July 12.

Two Y-12 employees also were acknowledged for their roles as small-business advocates.

2012 Small Businesses of the Year

- **Small Business:** SCI Consulting Services Inc.
- **Small Disadvantaged Business:** GEM Technologies Inc.
- **Woman-Owned Small Business:** G&S Construction Company Inc.
- **HUBZone Small Business:** Oldenburg Group Incorporated
- **Veteran-Owned Small Business:** Advantage Electronics Inc.
- **Service-Disabled Veteran-Owned Small Business:** A1 Tactical and Safety

2012 Y-12 Small-Business Advocates

Kealan Huckabee and Floyd Smith

Y-12 President and General Manager Darrel Kohlhorst thanked small businesses for "helping Y-12 meet America's critical nuclear security missions." Eddie Mannis, president and founder of Prestige Cleaners and now Chief Operations Officer and Deputy to the Mayor of Knoxville, was the keynote speaker.

Mannis founded Prestige Cleaners in 1985 with three employees and today has 12 locations, including a facility in Nashville. Mannis shared his entrepreneurial story and discussed his company's values, which focus on customer service and employee satisfaction and lead to a strong relationship with the community.

By "always finding a way to say 'yes'" and valuing customers and employees, Mannis says he found the community quickly responded to his business. When it comes to giving back, Mannis offered this piece of advice: "What you do for the community should reflect what the area has given to you."

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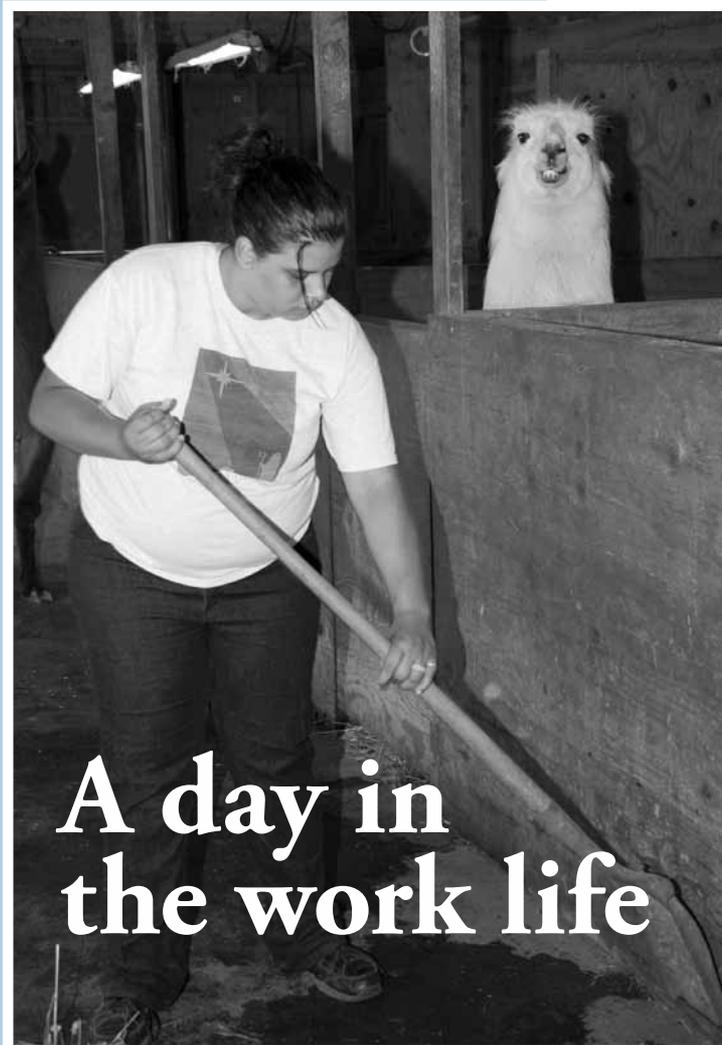
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As a Y-12 photographer, Kathy Fahey has snapped photos of many things — dignitary visits to Y-12, Secret City festivities and daily activities of many programs — but at this year’s Day of Volunteering, she had a first-time experience at the 40-acre Indian Creek Llama Sanctuary in Oliver Springs.

You might remember reading about Y-12 retiree George Brandon and his llama farm in the April 2011 issue of *The Y-12 Times*. As part of the 2012 Day of Volunteering, participants repaired fences, cut tress and cleaned barns at the farm. About 50 rescued llamas (retired from their jobs as a pack animals) roamed freely, with a few in the barn. Fahey expected interaction with the llamas, but what she experienced wasn’t what she expected.

“This llama [left] was in a stall by himself because he needed an attitude adjustment. The group was trying to socialize him with other llamas and people. I tried to get closer, but he started clicking at me, which they said was a warning that he was the top llama,” Fahey said.

What made this job unusual? Fahey said, “This was the first time a Y-12 photographer ever had to go home and wash you know what off their shoes! He was the most threatening subject I’ve encountered.”

So while it may look like this llama was smiling for the camera, he was anything but happy to see Fahey. The sanctuary was one of about 10 locations Fahey visited during Day of Volunteering activities. Llamas weren’t the only four-legged animals she encountered; she also took photos at the Shelter Animal Rescue Group dog wash.

Do you have an interesting behind-the-scenes story about a day in your work life? If you would like to share, send an e-mail to Amy Alley (alleyab@y12.doe.gov) or Mary Bryant (bryantma@y12.doe.gov), and your story might appear in an upcoming issue of *The Y-12 Times*.