

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

MAY/JUNE 2014

the Y-12 times

inside this issue ...

**An unsolved mystery: What sank
the *H. L. Hunley*?**

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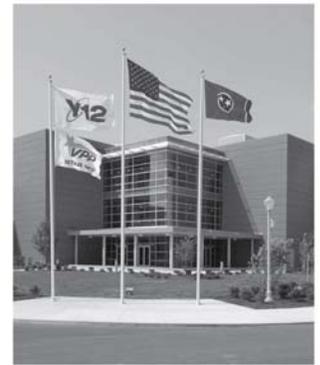
**Memories from B&W Y-12's
14 years**

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**Creating friendships through
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... and other Y-12 news



B&W Y-12: 14 years in review

The world had survived Y2K (January), *Cats* on Broadway had closed (June) and Space Shuttle *Atlantis* returned to Earth after taking three tons of equipment to the newly equipped International Space Station (September). For Y-12ers, Oak Ridge residents and the surrounding communities, change continued in 2000 when BWXT Y-12 (now B&W Y-12) was awarded the management and operations contract to oversee the Y-12 Plant (now Y-12 National Security Complex).

Upon arrival, B&W Y-12 initiated a major clean-up effort, emphasizing housekeeping. Buildings were razed — 321 facilities were demolished with the site footprint being reduced by 1.4 million sq. ft. Through its transforming, the site became a leader in environmental stewardship, and today has many environmental processes in place.

Throughout the years, Y-12's work force has been instrumental in the site's success. From Y-12's beginning in 1943 until now, employees have had a can-do attitude and remember the importance of the site's missions and their contributions to national security. Reestablishing the Apprentice Program helps ensure work specialities aren't lost. Hiring new college graduates offers the site and its programs new ideas. Whether a machinist, a writer or an engineer, employees stay focused and work safely while completing the site's mission work. That fact won't change.

B&W Y-12 has had a successful venture for 14 years and has changed the face of Y-12. Whether you look at the site's footprint reduction, modernization within the Nuclear Security Enterprise or the always important emphasis on safety and security, change is constant, but one thing has remained: the resilience of employees as they accept the next challenge.

See pages 4-5 for other B&W Y-12 highlights.

Working together as one

A majority of Y-12 buildings and infrastructure are 50-plus years old, so when workers performing a routine cleanout of the Holden Gas Furnace noticed significant cracking in the bricks of one of its two luminous walls, they knew repairs had to be made. After all, the furnace has to keep functioning until the startup of the Uranium Processing Facility.

The furnace is used to burn plant waste and from which valuable material is retrieved for reuse. The walls, made of special porous bricks, allow a mixture of natural gas and air to flow through them. When the mixture is ignited, those two inside walls become blankets of flame.

As project lead Mike Antonas of Engineering explained, the furnace helps Y-12 keep track of material and is the first step in recovery for reuse. “If the furnace system is down, that affects the entire plant,” he said. The need for a quick, long-lasting fix was obvious; the underlying repair complications were less so.

Logistics were a challenge. The technology is owned by a Canadian company, but Y-12 and the company reached a repair agreement, including training Y-12 masons on handling repairs and having advisors on hand throughout the process to help tune the furnace.

Thanks to a multidiscipline Safety-in-Design Integration Team, safety hazards of the 50-year-old bricks were addressed. At the



The Y-12 furnace is back in use after repairs were made earlier this year.

suggestion of Facility Safety, a new mode of operation — repair mode — was incorporated into the facility’s safety basis.

The furnace repair is another example of Y-12 equipment being in service past its expected lifetime, but once again, teamwork and ingenuity created a safe repair.

Celebrating innovation

Cheers to 39 creative thinkers who were honored for innovative contributions to technology transfer during fiscal 2013. They broke new ground with their scientific endeavors — ranging from nifty, clever, bright ideas to seven patents and one R&D 100 Award — and were celebrated at the tenth annual Tech Transfer Awards Ceremony, held in Oak Ridge.

“Our country and world benefit daily from the smart ideas offered by Y-12 inventors, and we appreciate the time and preparation each inventor spends to disclose potential inventions. It’s valuable time well spent,” said Tammy Graham of Technology Transfer Operations. “Through Tech Transfer, we’re using inventions and maturing promising technologies at Y-12 and then moving them into the private sector — often through partnerships with small businesses or start-ups,” Commercialization and Partnerships Program’s Jeremy Benton said.

“Y-12 is a unique place that requires unique solutions to solve the technical challenges we face daily. This drives our creativity and often leads to solutions we never expected,” Ashley Stowe, senior chemist, inventor and 2013 R&D 100 Award winner, said. “The Tech Transfer team helps us connect with the right partners to apply novel solutions to industries well beyond our gates.”

Again, hearty congratulations to all who got their creative juices flowing to help Tech Transfer move ingenious ideas to the

private sector. “It’s vital that we share our innovations. Hundreds of technologies have been transferred out of Y-12 over the years, and we see their results all over the globe,” Graham said.

2013 patents granted by the U.S. Patent and Trademark Office

System and method of measuring permeability of materials	Mike Renner and Rusty Hallman
Method for removal of beryllium contamination from an article	Ron Simandl
Method of producing catalytic materials for fabricating nanostructures	Roland Seals
Anchored nanostructured materials and method of fabrication	Roland Seals
Method and apparatus for characterizing and enhancing the functional performance of machine tools	William Barkman and Ed Babelay
Blast-resistant vehicle seat	Ed Ripley
Passive in-situ chemical sensor	Jonathan Morrell and Ed Ripley

Procurement Operations recognized for leadership

The National Nuclear Security Administration presented Y-12 Procurement Operations with the award for achieving the highest savings rate for fiscal year 2013 in the NNSA complex at the Supply Chain Management Center biannual operational meeting in April.

The award recognizes Y-12 for performance in attaining the Highest Total Strategic Savings Rate among NNSA's seven management and operating contractors. Y-12 achieved a total 6.51 percent savings rate of total strategic spend as calculated by the elements of cost savings measured by the SCMC.

NNSA created the SCMC to gain pricing and process efficiencies by aligning the purchasing power of the enterprise's management and operating contractors. SCMC operations began in 2007 and introduced two major tools: eSourcing, a method in which suppliers bid for a contract online, and Strategic Sourcing, a method for negotiating multisite commodity contracts with vendors.

"The buying staff accomplished this savings rate by using the SCMC tools and capturing other negotiated savings," said Richard Atwood, acting director of Procurement Operations. "In FY 2014, Procurement Operations has achieved a 6.05 percent savings rate through March and is on pace to exceed the NNSA enterprise goal for savings rate and dollar target established for Y-12."

In FY 2014, the SCMC also accepted Y-12's recommendation for a regional sourcing approach. This new localized approach will award supplier contracts regionally to improve lead time, reduce freight cost and increase use of local small businesses. Sites within the same region will be served by the contracted supplier in the area instead of a national single-source supplier.



Mystery... of the Hunley

A few years ago best-selling author Patricia Cornwell sought the aid of several East Tennessee researchers, including Y-12 engineer Steve Dekanich, in solving a puzzle. She hoped the team would discover what caused the demise of the *H. L. Hunley*, a Civil War submarine that mysteriously sank off the South Carolina coast.

Here are the facts: One February night in 1864, the crew of the *H. L. Hunley* used a hand crank to propel the Confederate submarine into Charleston Harbor. Their mission was to torpedo the Union warship USS Housatonic. The crew successfully blasted and sunk the enemy vessel, but shortly after, the *Hunley* itself sank.

What caused the *Hunley* to sink? Hypotheses and clues abound, but 150 years later, what happened remains a naval mystery. Cornwell, having worked with East Tennessee researchers on previous projects, returned to the region to fund a team of scientists to investigate.

Dekanich proposed conducting a hardness test on the vessel's leading edge, the metal closest to the blast, and trailing edge and using the data to determine the force of the explosion. "A comprehensive investigation of this type would require knowledge of failure analysis, materials behavior, scanning and optical microscopy, chemical analysis, X-ray applications and dynamic loading, which are the forces that move or change when acting on a structure," Dekanich said. "These are all capabilities Y-12 excels in."



The Civil War submarine *H. L. Hunley* at the Warren Lasch Conservation Center in Charleston, South Carolina (use of the above photo courtesy of the Friends of the Hunley). At right: Y-12 engineer Steve Dekanich meets with author Patricia Cornwell.



Although Dekanich didn't have the opportunity to test his proposal (it wasn't selected for further funding), Cornwell did write Y-12's capabilities and personalities into a couple of her novels.

For more information on the sub, visit the Friends of the *Hunley* website (hunley.org).

BWXT/B&W Y-12 Achievements

How many of the 14 years of events that highlight B&W Y-12's tenure do you remember? Maybe they will trigger an "I remember when ..." story for you.

Moves about 1,300 Y-12's first private receives two R&D

2000 BWXT Y-12 takes charge



2000

2004

Receives nuclear materials surrendered by Libya and holds a media event attended by then Secretary of Energy Spencer Abraham; completes the W87 Life Extension Program

2005

Opens Beta 3 Calutrons for public tour during Secret City Festival; begins initial design of the Uranium Processing Facility

2003

Celebrates Y-12's 60th anniversary



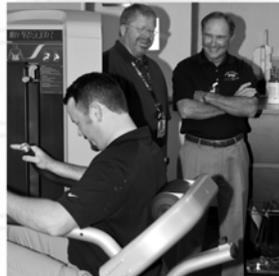
2006

Begins construction for the Jack Case and New Hope centers



2010

Holds HEUMF dedication with then Secretary of Energy Steven Chu attending; begins using the new two-million-gallon water tanks atop 250-foot towers; dedicates the new steam plant, which replaces a coal-fired plant in operation since the 1950s; opens the first of three LIFE Centers as part of the LiveWise program



2011

Has a banner year for defense work; completes last dismantlement of W70 Lance warhead; reaches almost 7,000,000 man-hours without a lost-time injury; receives R&D 100 Award; initiates dismantlement of B53 and B83 bombs; sets its United Way Campaign fundraising record with \$961,225 in donations



ts

0 employees into
-financed facilities;
100 Awards

2007

Y-12
LLC



R&D
100

2012

Holds first Apprentice Program graduation in 30 years; achieves the Volunteer Protection Program Star; completes all ARRA projects; receives certification for the Jack Case Center as Y-12's first High Performance and Sustainable Building; completes Facilities and Infrastructure Recapitalization Program with 321 facilities demolished and the site footprint reduced by 1.4 million sq. ft.

Completes construction of the Highly Enriched Uranium Materials Facility; completes the canned subassembly production for the B61 Life Extension Program; receives three R&D 100 Awards

2008



Receives the Tennessee Pollution Prevention Partnership green flag; receives \$292 million in funding for American Recovery and Reinvestment Act projects; receives the U.S. Small Business Administration's Frances Perkins Vanguard Award and the Dwight D. Eisenhower Award of Excellence; celebrates Construction's 5 years of achieving zero accidents; begins initiative to downblend 12 tons of weapons-grade uranium to low-enriched uranium suitable for nuclear power reactors

2009

Y-12
TH
ANNIVERSARY



2014

2013

Celebrates 10 years of Day of Volunteering; integrates more than 500 protective force personnel into the prime contract; improves the security infrastructure and Central Alarm Station as result of July 2012 security incident; downblends 1.1 metric tons of low-enriched uranium; wins an R&D 100 Award



Receives the American Heart Association 2013 Gold Fit-Friendly Worksite designation; graduates the second class of the Apprentice Program; marks the 11th year employees donate aluminum beverage can recycling funds (more than \$82,000 for about 420 organizations)

2014

Around Y-12 ...

- A differing professional opinion, or DPO, is an opinion involving a technical issue that: (1) differs from previous management decisions, positions or established policies or practices; (2) in the opinion of the employee, has not been adequately considered and (3) if not addressed, has a reasonable probability of having significant negative impact with respect to the environment, safety or health. Employees and subcontractors are reminded of your right to report environment, safety and health technical concerns not resolved through routine work processes. Y11-617, *Employee Concerns Program*, identifies various avenues for raising a DPO at Y-12. Visit <http://energy.gov/hss/doe-differing-professional-opinions> for more information. If you have any questions, please contact Jim Nobles (574-4199, noblesjcr@y12.doe.gov).
- Congratulations to Morris Hassler and Chris Robinson who have leadership roles in the American Nuclear Society's Nuclear Nonproliferation Technical Group. Hassler is the chair of the 600-member group, and Robinson has been elected to a seat on its Executive Committee and will continue in the position of Technical Program chair. Hassler also has assumed the leadership chair with the Facility Operations Technical Division of the Institute of Nuclear Materials Management.
- B&W Y-12 approved 106 employees for the Voluntary Separation Program; they will leave Y-12 on or before June 30. "We would like to thank those who have elected to participate in the program and who will be leaving the site for your years of service to Y-12 and the nation," B&W Y-12 President and General Manager Dave Richardson said.
- May was National Bike Month, and seven employees took advantage and rode their bicycles from a shopping center in Oak Ridge to Y-12. Project's Jay Snyder was the bike ambassador and helped arrange the May 22 ride. Participants familiarized themselves with Y-12's personal bicycle use guidelines and bicycle route before beginning the trek to the site.
- One box of used (but not abused) athletic shoes is on the way to be repurposed and help others. In conjunction with Earth Day in April, Y-12's LiveWise program asked employees to donate used running shoes. Dietitian Karen Lacey said, "I'm excited to be able to help the MORE Foundation Group. Instead of the shoes sitting in a landfill, we're offsetting carbon from the atmosphere and providing others with a good they cannot afford." It's not too late to donate your used, unneeded athletic shoes. You can bring them to the Jack Case Center LIFE Center.
- This year marks the 11th year employees have donated aluminum beverage can recycling funds of more than \$82,000 to about 420 organizations. The latest four receiving a \$200 donation are the Bambi Lynn Hughes Memorial Fund at the University of Tennessee Medical Center, Crumley House Brain Rehabilitation Center Equestrian Club in Greenville, Down Syndrome Awareness Group of East Tennessee and M-14 Ministries in Harriman.

Raising funds for a cure

Four hardworking chefs, 942 hamburgers and hot dogs and many hands packaging and serving the meals — the numbers tell the story. The 2014 Construction Relay for Life picnic was a huge success; funds raised accounted for more than 80 percent of Y-12's Relay for Life contribution. And for that, Construction Manager Joe Kato said, "Thanks to all those who helped and participated."

The Relay for Life honors cancer survivors, remembers loved ones lost and fights back against a disease that has taken too many. The picnic is one way Y-12 fights back.

"For Y-12, the Relay for Life Picnic is more than just a fundraiser," said Jim Haynes, senior vice president and deputy general manager. "It also provides an opportunity for camaraderie with our co-workers and time to reflect on our brothers and sisters affected by this disease."

The Relay team also held a silent auction and sold luminaries, bracelets and team shirts to raise money. The t-shirt design was created by Y-12's Cheryl Walker, who has been touched personally by cancer. "My mom is a lung cancer survivor. God has blessed me with a little artistic talent and a little more time with my mother," Walker said.

Multiple fundraising activities led up to the May 16 Relay held at Oak Ridge High School. Twenty-six Y-12ers (plus their families) braved the rainy weather conditions and participated in this year's event.



Craftsman Will Shepard wows the audience with his singing and guitar playing.

Y-12's Karen Lacey, who served as this year's campaign chair, said, "We had a fun and successful event."



MAY

47 years

Safeguards, Security and Emergency Services: **Wendell W. Jones**

45 years

Engineering: **Lonnie E. Cochran**

Facilities, Infrastructure and Services: **Bill A. Shipwash**

44 years

Business Services and Performance Assurance: **James D. Huddleston**

Quality Assurance: **Harold E. Warrington**

43 years

Business Services and Performance Assurance: **Edwena L. Crowe**

42 years

Projects: **Jacob Brown**

40 years

Business Services and Performance Assurance: **Jacqueline C. Corpening**

Engineering: **Walter A. McClanahan**

Quality Assurance: **Linda S. Barringer**

35 years

Business Services and Performance Assurance: **Cassandra R. Bone** and **Claude H. Martin**

Facilities, Infrastructure and Services: **Cindy F. Hartsell**

Production: **Raymond A. Perkins Jr.**

Quality Assurance: **Eric E. Angros** and **Mark A. Hopkins**

30 years

Business Services and Performance Assurance: **Janet B. Bradshaw**, **Michael L. Ramsey** and **Mark W. Ward**

Engineering: **Russell L. Hallman Jr.** and **Frederick A. Page**

Environment, Safety and Health: **Eric D. Henderson**

Facilities, Infrastructure and Services: **Willie J. Banks Jr.** and **Howard L. Vandergriff Jr.**

Human Resources: **Phyllis J. Potter**

Safeguards, Security and Emergency Services: **Richard T. Williams III** and **David W. Vallance**

25 years

Business Services and Performance Assurance: **Debra L. Freeman**

Engineering: **Robert M. Jessee**

Production: **Henry E. Barnes**

Program Management: **Deborah B. Buchanan** and **Jeffrey W. Knott**

Quality Assurance: **Wade A. Rucker**

Safeguards, Security and Emergency Services: **Michael G. Alberson**, **Edwin L. Kelley**, **Bonnie B. Kirby Jr.** and **Jackie B. Riggs**

20 years

Facilities, Infrastructure and Services: **Bradford S. Griffis**

JUNE

47 years

Engineering: **Samuel M. O'Neal Jr.**, **George L. Powell** and **James H. Rollins**

Quality Assurance: **Michael W. Poore**

46 years

Quality Assurance: **Ralph S. Leete Jr.**

45 years

Business Services and Performance Assurance: **William D. Cain**

Facilities, Infrastructure and Services: **Dewitt Upton**

Program Management: **Roger D. Bolin**

44 years

Production: **Perry Anthony Jr.**

Safeguards, Security and Emergency Services: **Robert P. Galyon**

42 years

Business Services and Performance Assurance: **Terry C. Domm**

41 years

Facilities, Infrastructure and Services: **Larry T. Petrowski**

Production: **Jerry L. Hall Sr.**

Safeguards, Security and Emergency Services: **Jimmy L. Felton**

40 years

Business Services and Performance Assurance: **John E. Holbrook**

Production: **Marlene C. Summerall**

Uranium Processing Facility: **Mary H. Bunch**

35 years

Business Services and Performance Assurance: **Edwin F. Abercrombie** and **Shirley M. Mcconico**

Engineering: **James H. Clift**, **George R. Davis**, **Mary S. Long**, **Darrell J. Lott**,

Eugene Loznyiak, **Bonnie H. Phillips** and **John K. Prazniak**

Environment, Safety and Health: **Christopher K. Hill** and **Garland Sharp**

Facilities, Infrastructure and Services: **Gregory L. Noe**

Production: **James D. Baker**, **Stephen R. Bice** and **Robert W. Cagle**

Program Management: **Bonnie S. Mccaskill**

Projects: **Mary J. Henley**

Quality Assurance: **Gregory E. Duncan** and **Daniel R. Roberts**

Safeguards, Security and Emergency Services: **Robert J. Sharp**

30 years

Business Services and Performance Assurance: **Melissa P. North**

Facilities, Infrastructure and Services: **Carl W. Capps**

Production: **Gerald L. Wagner**

Safeguards, Security and Emergency Services: **Jeffrey Y. Cox** and **Johnny F. Rice**

25 years

Chief Financial Officer Division: **Marilee L. Smith**

Engineering: **Cheryl M. Cecala**

Environment, Safety and Health: **Wayne P. Carlton** and **Elizabeth R. Schultz**

Facilities, Infrastructure and Services: **Diane Eddie**, **Lloyd G. Hileman**, **Walter S. Mayton**, **Floyd W. Ray** and **Kimberly D. Starr**

Production: **Phillip Conner**, **Glen A. Culver**, **Joseph Kirk**, **Angela B. Minga** and

Martha S. Polston

In memoriam

Amos Van Hall of Safeguards, Security and Emergency Services passed away May 12. He had 9 years of company service. Y-12 offers condolences to his friends and family.

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P.O. Box 2009

Oak Ridge, TN 37831-8245

B&W Technical Services Y-12, LLC, a partnership between Babcock & Wilcox Technical Services Group Inc. and Bechtel National Inc., operates the Y-12 National Security Complex.

Managing Editors

Amy Alley:

alleyab@y12.doe.gov

Maleia Wood:

mcamisma@y12.doe.gov

Layout

Denise Novak

Contributors

Ellen Boatner

Mary Bryant

Ryn Etter

Kathy Fahey

Scott Fraker

Vicki Hinkel

John Holbrook

Terry Marlar

Jill McNutt

Brett Pate

Sandra Schwartz

Kate Shaw

Ray Smith

Heidi Spurling

Mona Wright

P.O. Box 2009

Oak Ridge, TN 37831-8245

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Friendships for life

B&W Y-12 has been a sponsor of the Casting for Recovery annual retreat in the Great Smoky Mountains for the past four years. This year Y-12's Sue Jones participated in the April 11–13 retreat, and Kathy Martin was a retreat volunteer.

Casting for Recovery uses fly fishing as a means to promote mental and physical healing for women with a breast cancer diagnosis. Physically, the motion of fly casting is similar to the exercises prescribed after surgery or radiation to stimulate soft tissue stretching.

The retreat focuses on wellness as opposed to illness, empowerment as opposed to helplessness. "It was just an excellent combination of some very fun activities, some bonding activities and some more serious information sessions," Jones said. Women participating in the retreat had personal fly fishing guides who taught them how to make flies, cast a line and eventually waded into a stream with them to put that new skill to use.

Martin volunteered as a hospitality worker. "We did anything and everything that needed to be done; we carried luggage, fixed food, helped with fly casting," Martin said. "We were gofers, and it was awesome."

The retreats are provided at no cost to participants, and Martin was so inspired by her Casting for Recovery volunteer experience that she immediately set up a GoFundMe account to collect donations. "I'm shooting for \$1,200, because it's about \$1,200 per lady," Martin said. "And I've already signed up as a volunteer for next year."

For Jones, the retreat ensured she can travel the path to wellness with a band of new friends who share similar experiences.



Sue Jones casts her way to recovery and said, "Because we'd all been through the same thing, we bonded so quickly. I've made some friendships for life."