

# the Y-12 times

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

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## Taking the lead

At the end of each fiscal year, Y-12 releases a list of Top Ten accomplishments to employees, the public and other stakeholders. This year's list has one prevailing theme — Y-12 led the way.

"Y-12 has a long tradition of finding a way to do the work our nation needs. Whether we were exceeding expectations in weapons work, adopting the highest standards in nuclear quality, or changing our business model to get the job done more efficiently, in 2011 Y-12 set the example in the Nuclear Security Enterprise," said Darrel Kohlhorst, president and general manager.

Y-12 was the first National Nuclear Security Administration site to achieve Line Oversight Contractor Assurance System affirmation and the first to implement the American Society of Mechanical Engineers NQA-1-2008 quality standard for nuclear facilities.

In a time of federal budget uncertainties, Y-12 led the Nuclear Security Enterprise in Governance Transformation efforts. "Y-12 has a strong productivity focus. Governance Transformation put a framework around this in terms of federal oversight. We reviewed requirements in detail with our federal counterparts, and our overarching question was whether the requirement added value. Answering this question is helping us free up staff for mission-critical activities and expand our work scope for fiscal year 2012," said Nancy Johnson, vice president Business Services and Performance Assurance.

The Top Ten summarize how safely we operated the site, how well we met customer requirements and how effectively we used taxpayer dollars. See pages 4 and 5 for the complete list of Top Ten accomplishments.

# Legacy waste milestone

Y-12 recently completed the removal and disposal of more than 2,100 containers of mixed waste, a major legacy waste disposal milestone for the facility.

“Removing these mixed wastes from the site greatly reduces safety risks and environmental risks associated with these materials,” said Ted Sherry, manager of the National Nuclear Security Administration’s Y-12 Site Office.

Mixed waste consists of both hazardous chemicals and radioactive constituents. The disposal of the legacy mixed wastes at Y-12, begun more than five years ago, was performed under schedules and disposition milestones contained in the Oak Ridge Reservation Site Treatment Plan. The STP is a compliance agreement between the U.S. Department of Energy and the Tennessee Department of Environment and Conservation.

Some of the mixed waste did not require treatment to meet land disposal restrictions. These containers were repackaged to meet U.S. Department of Transportation shipping requirements before being sent to the Nevada Nuclear Security Site for disposal. Solid residues that required treatment were shipped to EnergySolutions in Utah and macro-encapsulated in the mixed waste disposal cell to meet regulations or to Diversified Scientific Services in Kingston, Tenn., for treatment and subsequent disposal. The effort also included processing organic solutions to meet shipping and waste acceptance criteria. In total, processing the baseline inventory of the 2,139 items resulted in 3,424 drums being shipped for disposal.

“Removing this legacy waste takes Y-12 one step closer to a safer and more environmentally friendly site. Now, these materials no longer pose a hazard to our workers and the environment because they have been disposed of properly, and that is a good thing for everyone,” said Sherry.



Prior to shipping to the Nevada National Security Site, Y-12’s containers were “rocked up” — filled with concrete within a larger container — to meet disposal facility requirements.

# Strengthening a Partnership

The Y-12 National Security Complex and University of Tennessee signed an agreement Sept. 28 that allows the formal exchange of personnel, helping both organizations to accomplish long-term technology, business and research goals

The Joint Assignment Agreement was signed at Y-12 by UT-Knoxville Chancellor Jimmy Cheek and B&W Y-12 President and General Manager Darrel Kohlhorst after they spoke to about 250 Y-12 managers about the site’s partnership with UT.

“We are really excited about this relationship and building on it,” Kohlhorst said. “UT is the kind of organization with which we absolutely want to be associated. The challenges for Y-12 in the future are going to require better skills, better tools, staying up to date.”

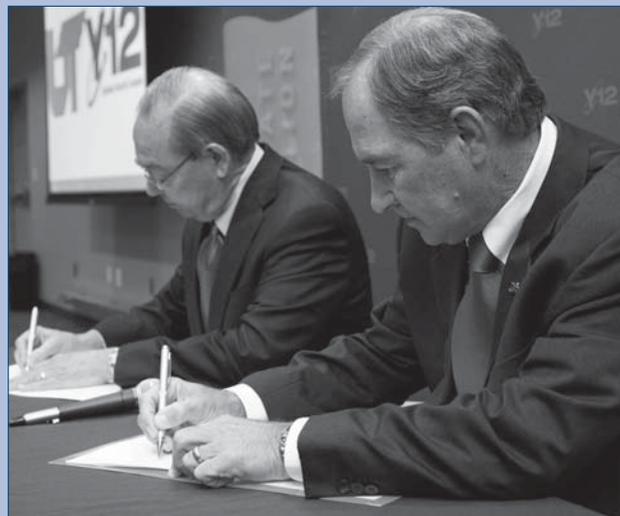
The partnership will support those goals by bringing valuable expertise to Y-12 in a variety of disciplines, while providing unique educational and research opportunities for UT.

The agreement is the first of its kind for a National Nuclear Security Administration production site.

“Partnership is a key element of the University of Tennessee,” Cheek said. “This partnership is all for the betterment of students, science and the missions we both have to accomplish.”

Y-12 and UT have had a longstanding working relationship and, in April 2011, signed a Memorandum of Understanding to accelerate interactions. Y-12’s Debbie Reed was appointed as Y-12’s liaison to UT and tasked with identifying mutual areas of technical interest, highlighting unique resources and expanding the level of cooperation between the two organizations.

“My goal is for Y-12 to become involved with every college at UT when it makes good business sense,” Reed said. “UT will be a seamless extension of our resources.”



University of Tennessee Chancellor Jimmy Cheek (left) and B&W Y-12 President and General Manager Darrel Kohlhorst sign a Joint Assignment Agreement at Y-12 Sept. 28.

# HVAC crews keep Y-12 up and running

To better serve Y-12 and its customers, Facilities, Infrastructure and Services recently split its Heating, Ventilation and Air Conditioning group into two crews.

Before the split, responding to priority jobs took time due to the plant's layout. Now, customers can have an HVAC mechanic at the job site within minutes. The split also begins the process of identifying systems and implementing energy-efficient technology to reduce energy consumption and provide Y-12 personnel with a comfortable work space.

In June, the East Maintenance Center began staffing crews at both the east and west ends of the plant. "We made this split to gain efficiency and we're already seeing results," explained Rob Jago, manager of the East Maintenance Center.

In addition to simply cleaning and adjusting the current air-conditioning units, the east end crew is working to return those systems to an operational and further energy-efficient status. "Our goal is to return Y-12 to automatic control," said Jay Summers, east end HVAC supervisor.

The west end HVAC crew primarily focuses on supporting the production mission, including the production buildings and utilities systems. Their goal is to evaluate and maintain the current equipment. "By maintaining the current equipment, we're able to reuse what we have instead of spending thousands to buy new," said Joe Sparks, supervisor of the west end HVAC crew.



Y-12 now has two HVAC crews, making response time quicker.

## Streamlining storage areas

Productivity and Process Improvement recently joined with Facilities, Infrastructure and Services to collect, inventory and store Grade 1 and Grade 2 materials across the site in keeping with Quality Assurance Standards for Nuclear Facilities.

"This is a team effort that has taken front-line supervisors in Maintenance Execution, planning and the craft to succeed in taking material storage and handling down the right road," Rapid Improvement Event Facilitator Tanya Liford said.

The event is labor-intensive — supplies are ordered, shelving and fencing are installed, the floors are cleaned, inventories are taken, and materials and parts are actually moved into the new, secure storage area. "Right now, we're working with Grade 1 and 2, Level B material and spare parts. There's a lot that goes into a project like this. We're working on correct tagging, technical documents to track them, a color-coded storage level, storage containment and the check-in/checkout process, which involves material clerks, planners and work packages," explained Eddie Wilburn, Material Control Center lead.

The inventory will be captured in SAP to deliver a more efficient reordering process. "With the automated reordering process, a project group won't have to order an entire case of something. Instead, the substore will order it and the project will only be charged for what it uses," said Mike McFarland of Maintenance Support.

The team plans to have Grade 3 and 4 items stored by the end of fiscal 2012.



FI&S now has a more secure and efficient storage area in Building 9737 thanks to one Rapid Improvement Event.

### **I. Managing the weapons stockpile**

Exceeded unit requirements for the W76 Life Extension Program by reducing unit cost approximately 15 percent. Increased surveillance work by 400 percent, including a B61 study supporting future Life Extension Program decisions and W84 and B83 tasks not performed in more than a decade. Exceeded dismantlement requirements, completing W70 components and starting up two complex dismantlement programs. More than \$6 million in dismantlement and surveillance efficiencies enabled critical equipment upgrades.

### **2. Increasing productivity**

Validated 370 initiatives and \$71.8 million in efficiencies and cost avoidances against an aggressive stretch goal of \$55 million, exceeding all prior years' performance. In the past four years, delivered more than \$225 million in efficiencies and cost avoidances. Productivity results were generated through the efforts of Y-12 employees across all organizations.

### **3. Transforming the site**

Demolished approximately 250,000 square feet of buildings, disposed of 2 million cubic feet of waste material and reduced the security footprint. Consolidated 68 percent of all highly enriched uranium into the Highly Enriched Uranium Materials Facility. The Uranium Processing Facility team completed more than 60 percent of its design work and met all milestones while undergoing 10 external reviews. Completed six American Recovery and Reinvestment Act projects. ARRA work expected to cost \$219 million was accomplished for \$202 million, allowing \$17 million of additional scope in fiscal 2012, once authorized by the Department of Energy – Oak Ridge Office.

### **5. Strengthening global security**

Supplied safe and secure materials to fuel foreign research reactors; trained more than 1,000 professionals responsible for counterterrorism, counterproliferation and nuclear threat response; established a center to accelerate research and development in uranium detection; developed the nation's uranium forensics archive; and provided quality material to fuel the Navy's propulsion reactors.

### **4. Enhancing security**

Minimized staff increases in Protective Forces and achieved effective security against an adversary two to three times more capable by integrating advanced information systems, force-multiplier technology, security features and tactics.



The logo features the text 'Y-12' in a large, white, sans-serif font, with a stylized white orbital path around the '1'. Below this, the words 'top ten' are written in a smaller, black, lowercase sans-serif font. The entire logo is centered within a dark grey hexagonal shape.

fy **2011**  
accomplishments

**7. Transforming governance**

Led the Nuclear Security Enterprise in Governance Transformation. Became the first National Nuclear Security Administration site to achieve Line Oversight Contractor Assurance System affirmation — confirming the success of federal and contractor efforts to fulfill Y-12's missions safely and efficiently. Initiated reviews of compliance and oversight activities to reduce work that doesn't add value.

**8. Managing nuclear quality**

Became the first National Nuclear Security Administration site to implement the American Society of Mechanical Engineers NQA-1-2008 quality standard for nuclear facilities. Simplified the process for a graded approach to quality and focused resources on characteristics most important to safety.

**9. Managing infrastructure**

Maintained production capability and infrastructure availability at 98 percent in a 60-year-old facility. Replaced approximately 240 sprinkler heads at or beyond the 50-year life-cycle and upgraded the site-wide fire alarm system. Focused efforts in Energy Management, Nuclear Facility Risk Reduction, Utilities upgrades, PrYde and the Facility Management Enterprise System to ensure Y-12 remained a safe, efficient and productive site.

**6. Working safely**

Achieved nine months and almost 7 million hours without a lost-time injury. American Recovery and Reinvestment Act projects reached a milestone of 2 million safe hours worked in a nontraditional, high-risk work environment. Pursued Voluntary Protection Program Star status to promote safety and health excellence. Showcased cooperative efforts between labor and management through the VPP Road Show presentations for all employees.

**10. Deploying new technologies**

By matching a rotary calciner with direct electrolytic reduction and electrorefining, enriched uranium salvage processing and purified metal production will be simpler, safer and more cost-effective. Deployed High Energy Digital Radiography to certify weapon subassemblies for the first time at Y-12, eliminating film processing and the associated chemicals and reducing set-up and operation cycle time. Deployed two smart technologies in Production: the Facility Management Enterprise System and wireless sensors.



OAK RIDGE, TENNESSEE

## Y-12 THROUGH THE DECADES *late 1960s and early 1970s*

On April 27, 1967, Y-12 senior staff consultant John M. Googin (known now as “The Y-12 Scientist”) was presented one of the Atomic Energy Commission’s highest honors – the E. O. Lawrence Memorial Award. The award was recommended by the AEC’s General Advisory Committee and approved by President Lyndon Johnson.

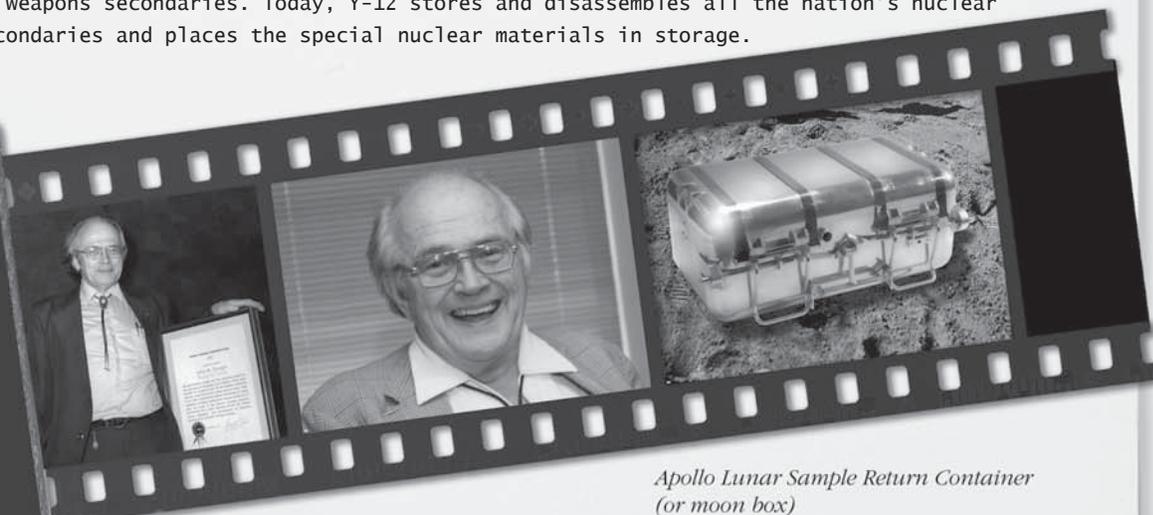
Googin received the award for his “outstanding contributions in the technological developments of processes for hafnium-zirconium and lithium isotope separations.” Googin, who came to Y-12 in May 1944, became the key scientific mind at Y-12 during the Cold War, designing the Column Exchange – COLEX – process that separated lithium 6 for the hydrogen bomb.

As the Cold War intensified, Y-12 production schedules were accelerated and the number of weapons parts increased significantly, with seven different systems being worked at the same time. The components manufactured at Y-12 were needed both for weapons testing and to expand the active stockpile inventory.

In the late 1960s, the design and fabrication of the Apollo Lunar Sample Return Container (or moon box) for NASA started, as did the design of the Lunar Vacuum Receiving Module System. The Y-12-developed moon boxes accompanied seven Apollo space flights (two per flight). The success of the moon boxes, six of which landed on the moon and brought back more than 840 pounds of lunar materials, has led to a lasting relationship with NASA.

By 1972, Y-12 was asked to take on an additional aspect of nuclear weapons work, called “surveillance.” Sample weapons components were carefully disassembled and inspected to determine their condition, the effects of aging and any changes since original manufacture.

These assemblies were the first of what would become a main mission of Y-12, the disassembly of nuclear weapons secondaries. Today, Y-12 stores and disassembles all the nation’s nuclear weapons secondaries and places the special nuclear materials in storage.



*Apollo Lunar Sample Return Container  
(or moon box)*

*Dr. Googin’s technical knowledge led to his international reputation as an expert in all things uranium. During the first Gulf War, he was called in to help identify locations in Iraq where facilities similar to those at Y-12 during the Manhattan Project were being constructed.*

# Around Y-12 ...



## November

### 43 years

Engineering: Glenn R. Bridges

### 42 years

Production: Timothy R. Hill Sr.

### 41 years

Engineering: Larry W. Johnson

Facilities, Infrastructure and Services:

Norman L. Smith

Production: Stephen R. McCarty

### 40 years

Development: William E. Barkman

### 35 years

Development: Dean K. Little

Engineering: Clark R. Hammond and

Reginald E. James

Facilities, Infrastructure and Services:

Ersel D. Alexander, Terry L. Beeler and

William L. Beeler

Procurement Operations: Frances S.

Varnadore

Production: William A. Ragsdale, Ronald G.

Steward and Daniel M. Vance

Quality Assurance: Luther D. Newman Jr.

### 30 years

Development: William J. Grove

Environmental Management: Marie A. Collier

Environment, Safety and Health:

Gary F. Hagan

Facilities, Infrastructure and Services:

Arthur O. Brown Jr. and Christopher L. Lane

Human Resources: Steven D. Weaver and

Jean A. Williams

Information Technology: Pamela L. Summers

Production: Thomas J. Barnard

Quality Assurance: Karen L. Bowles and

Peggy K. Hamby

### 25 years

Engineering: Bradley K. Walker

Facilities, Infrastructure and Services:

Gary R. Burnum

Human Resources: Eloise Duff

Safeguards and Security: Warren L. Willis

### 20 years

Chief Financial Officer Division:

Victoria P. Marrow

Engineering: Michael W. Bailey and

David O. Melroy Jr.

Facilities, Infrastructure and Services:

James E. Nolan, Jay W. Summers and

April E. Wood

Information Technology: Donald K. Beckler

Production: Darla K. Akers and

Susan R. Housley

Program Management: Phillip S. Cates Jr.

Quality Assurance: Larissa D. Welch

- **Y-12 completed cleanup of the last of 16 high-contamination storage yards, a milestone reached using a new approach that accelerated cleanup and saved money.** With an initial projected cost of \$4.2 million, cleanup of the 1.5-acre Just-in-Case storage yard for unneeded materials and chemicals was expected to take 18 months to two years. Jim Donnelly, with the National Nuclear Security Administration's Y-12 Site Office, proposed taking a nontraditional approach to disposing of the JIC Yard waste. Instead of shipping all waste to the Nevada National Security Site as originally planned, Donnelly proposed sending some to the Department of Energy's Environmental Management Waste Management Facility in Oak Ridge. The change saved an estimated \$600,000 and allow the project to conclude field work six months ahead of schedule.
- **Steve Goodrum, assistant deputy administrator for the National Nuclear Security Administration, visited Y-12 Oct. 4 to present Defense Programs Awards of Excellence for calendar year 2010 to 15 teams consisting of some 270 Y-12 employees.** The ceremony was held at the Zach Wamp Auditorium at Y-12's New Hope Center. The awards are given annually to recognize significant achievements in quality, productivity, cost savings, safety or creativity in support of NNSA's nuclear weapons program.
- **Two more Y-12 technologies have been patented and are available for commercial licensing: Infrared Debonding and the Personal Annunciation Device, or PAD.** IR Debonding uses heat from localized infrared rays to degrade adhesive bonds, allowing the nondestructive separation of components and eliminating most mechanical processing. Y-12 inventors Ron Simandl, Steve Russell and John Brown developed the technique. The PAD, a new-generation telecommunication instrument, allows the wearer to be notified of potential emergencies or of incidents within seconds, and it also provides emergency personnel with the wearer's approximate location. The PAD was developed by a B&W Y-12 multidisciplinary team led by engineer Peter Angelo.
- **Y-12 employees recycled more than 6,100 pounds of personal electronics during Pollution Prevention Week at an on-site event.** The materials were collected by e-Cycle, a local company that recycles or reuses electronics. "It was great to see Y-12 employees and subcontractors recycle their home electronics," said Sustainability and Stewardship's Jan Jackson. "Employees brought in their old personal equipment of hard drives, monitors, printers and fax machines that will now be reused or recycled properly." e-Cycle takes the items and reuses as many as possible; the company works with a local nonprofit organization that donates reused computer systems – free of charge – to needy families. The event was held as part of the Federal Electronics Challenge initiative of which B&W Y-12 is a participant.
- **The format is changing for company service recognition dinners: more entertainment, fewer speeches.** For the past five years or so, an employee with 30, 35, 40, 45 and more years of company service was recognized by a supervisor sharing a brief account of the honoree's work or personal history. "Instead of individual speeches, honorees will be called by name and recognized at their tables. We're also preparing a 'yearbook' that includes photos of the employees in their work locations and information about their careers and interests," said Pam Williamson, director of Benefit Plans Management. Because the program will now move more quickly, there will be time to include more entertainment.
- **Join the B&W Y-12 team at the World's Fair Park in Knoxville Nov. 13 for the Buddy's 5K Walk 'n Run Against Cancer to raise money for the Thompson Cancer Survival Center's Outreach Program.** "The program provides support in surrounding communities for those who can't otherwise afford cancer screenings or follow-up care," said Laura Oxley, B&W Y-12 team captain. For more information, contact Oxley at 576-5039.
- **The Y-12 Employees' Society softball league completed the season with the Ball Hogs defeating the Stonefingers 28 to 12 to remain champions for the third consecutive year.** There were three other teams in the league. "Thanks to everyone for their participation," said Zach LeVasseur, YES sports director. "I hope more employees will become involved in upcoming winter sports programs." For more information, visit the YES website on YSource.
- **The Y-12 Employees' Society again will be hosting holiday parties in December.** The employee celebration will be held in the Jack Case Center cafeteria Dec. 15 from 4 to 6:30 p.m. As in previous years, Y-12 employee names will be randomly drawn for gifts provided by YES. The children's party — complete with food, games and photos with Santa — is scheduled for Dec. 17 in the New Hope Center from 2 to 6 p.m.

## Y-12 Employees' Society Holiday Parties

### Dec. 15 employees' party

Jack Case Center cafeteria  
4 to 6:30 p.m.

### Dec. 17 children's party

New Hope Center  
2 to 6 p.m.

Contact: Teri Spradlen  
574-4668

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## NNSA recognizes Y-12 contributions to nuclear materials management



President and General Manager Darrel Kohlhorst presents Roger Bolin with a National Nuclear Security Administration award for his contributions to nuclear materials management.

On a recent visit to Washington, D.C., Y-12 Program Manager Teresa Knight had no reason to think this Nuclear Materials Management Team meeting would be much different than others she had attended. She knew differently, however, when she returned to Y-12 with awards in hand for seven employees, including herself.

Tom D'Agostino, administrator of the National Nuclear Security Administration, awarded certificates of appreciation to Y-12's Roger Bolin, Becky Eddy (Y-12 Site Office), Pat Hart, Pat Helms, Roger Keck, Jennifer Vanover and Knight for their contributions to various NNSA nuclear materials management projects.

The writing team of Eddy, Keck and Knight were honored for their extensive revision to an outdated DOE nuclear materials management order. Their two-year effort resulted in the issuance of DOE Order 410.2, *Management of Nuclear Materials*, which recognizes the importance of life-cycle management.

Helms received recognition for her contribution to the Sandia Pulse Reactor/Aberdeen Proving Ground Reactor Fuel Disposition Project, a project to recover and downblend highly enriched uranium for use as commercial reactor fuel.

Hart and Vanover were commended for their work with the Nuclear Materials Inventory Assessment Guidance Development Team. The Nuclear Materials Allotment Forecast Guidance Development Team, which included Bolin, Hart and Vanover, also was honored.

D'Agostino also honored Eddy and Knight with certificates of leadership for their outstanding contributions to NMMT. Knight and Eddy have served as co-chairs to NMMT since 2005.

At a Y-12 ceremony in September, President and General Manager Darrel Kohlhorst presented the awards to the honorees.