

Y-12 receives two R&D 100 awards

Y-12 National Security Complex research and development teams led by engineers Lee Bzorgi and Peter Angelo have captured two coveted R&D 100 Awards. The awards are presented annually by *R&D Magazine* in recognition of the year's most significant technological innovations.

Y-12 received the 2007 awards for its Rapid Deployment Shelter System and Personal Annunciation Device. Since the awards program began in 1963, Y-12 has received



Lee Bzorgi

13 awards, the most recent one in 1997. Bzorgi is inventor of the RDSS, which was originally designed as a mobile surgical suite for the U.S. Army. With a few modifications, however, it could be converted into anything from a command and control center to a logistics or operations center.

"It is very exciting and gratifying to receive an R&D 100 Award," said Bzorgi. "We could not have done it without Y-12's great team of craftspeople and engineers."

The 400-square-foot shelter can be easily set up in under two minutes and offers substantial protection against small-arms as well as nuclear, biological and chemical contamination, making it an ideal tool for many federal agencies.



Peter Angelo

The other winning entry, the PAD, may very well be the world's smallest self-arming multiple-use accident notification device.

"This is the first time personal wireless technology has been integrated into a safety-related nuclear accident alert system," said Angelo. "The PAD provides for a personal alert over a much wider area than portable detection devices."

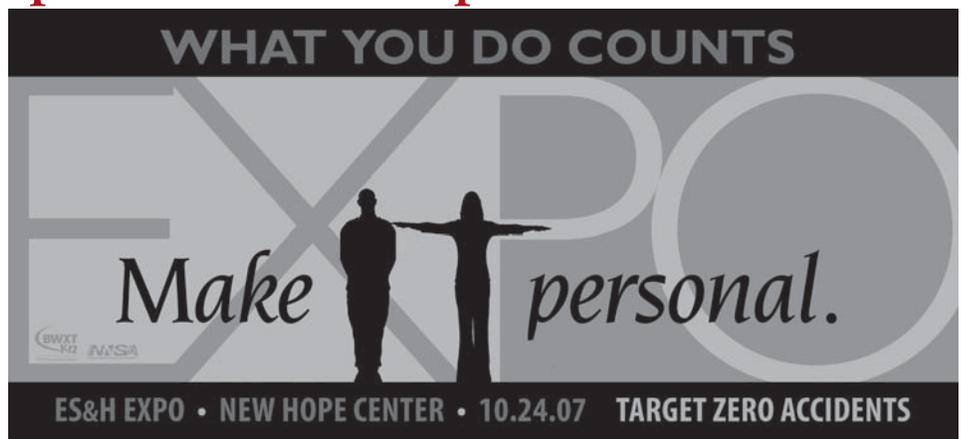
The prototype of the non-nuclear-based, radio frequency receiver is about the size of a small pager, but Angelo said it goes beyond existing technology by including radio frequency identification technology for accountability.

While Angelo spearheaded the effort, he said it would not have been possible without the successful collaboration of talents from Y-12, Oak Ridge National Laboratory and the Kansas City Plant. Y-12 conceived and led the effort, integrating the prototype into existing plant systems; ORNL provided a micropower radio; and the Kansas City Plant was responsible for packaging the PAD receiver components.

The R&D 100 Awards will be presented Oct. 18 in Chicago by *R&D Magazine*.

Make plans to participate in ES&H Expo

The ES&H Expo theme is "What you do counts—Make it personal," but exactly what does that mean? Quite simply, it means everything Y-12 employees do, every decision they agree upon, counts in some way to someone or some group. Why make it personal? Employees are encouraged to make their actions more personal and less "automatic" to place more emphasis on the environment, to think before they act in order to work safely and take personal responsibility for their health—physical, emotional and mental. Find out more Oct. 24 at the Expo.



Employees ride the KAT

Gene Davy of Information and Materials is still riding in style, and he's enjoying it.

"We who ride on the bus end up kind of being a little family to ourselves," said Davy, one of a group of Y-12 employees riding Knoxville Area Transit air-conditioned busses to and from work daily. He began riding a year ago when the program started.

"I don't have to worry about traffic," he said. "It saves me quite a bit on gas."

The busses stop at Y-12 and Commerce Park. The service is free to employees of BWXT Y-12, the National Nuclear Security Administration or subcontractors working at Y-12. However, employees of other businesses in Commerce Park can ride the bus to the drop-off points in Commerce Park, according to Larry Rackstraw of Strategic Planning and Modernization. Rackstraw managed the KAT service for Y-12 from concept to startup. There is a \$1.25 charge each way for non-Y-12 site workers to ride.

"It's a tremendous success and a good partnership between Y-12 and the City of Knoxville," said Rackstraw. "Y-12 riders have been very satisfied. People are saving money, ... and there are fewer cars contributing pollutants to the environment."

Rackstraw said the free round-trip express transportation to and from Y-12 was originally funded by a grant from the U.S.

Department of Transportation. "The state also contributed \$25,000, and BWXT made an in-kind contribution," he said.

Rackstraw said KAT is running three busses to support the service. One departs the Knoxville Civic Coliseum at 5:50 a.m. and makes the return trip from Y-12 at 4 p.m. The other two busses depart Farragut at 5 and 6 a.m. and make the return trip from Y-12 at 5 and 6 p.m. Interested in riding? Contact Rackstraw at 576-7849.



Y-12 and National Nuclear Security Administration employees take advantage of the free round-trip transportation to and from Y-12 (file photo)..

SRC savings fund priority projects

The completion of three Stockpile Readiness Campaign-funded projects ahead of schedule and under budget allowed the SRC program to reallocate approximately \$2,100,000 to fund other, high-priority projects. The goal of SRC is to develop or re-establish new manufacturing processes and technologies for qualifying weapon components for reuse.

The 9Mev X-ray linear accelerator project required the design, fabrication, testing and installation of an integrated trolley and manipulator system to house and control a nine million electron volt X-ray unit. Extensive vault modifications were also required to accommodate the new machine. The construction effort was outstanding since the craftspeople were limited to "weekend work only" for five months in order not to interfere with production. The project was completed for approximately \$1.2 million less than its original budget.

The X-ray for special applications project involved vault modifications, shielding design and replacement of a 320 kV X-ray unit. The shielding task eliminated existing administrative controls present in the vault and highlighted the as low as reasonably achievable principle of continued attention to worker safety. The capital and expense project work was completed for approximately \$325,000 less than the original budget.

The electron beam weld inspection station project was unique; it combined a development and capital equipment project. Specifically, it included the design, fabrication and testing of multiple electronic technologies systems that could nondestructively test the integrity of special weld joints. The development work took 18 months and culminated with three systems qualified to perform this task. The systems were then electronically integrated, and installation and testing were completed. The capital project was completed for about \$600,000 less than the original budget.

Project manager Jim Smith said, "A dedicated project team, a sterling work ethic and a 'graded approach' to the tasks are what made these projects successful."



Project manager Jim Smith presents Blake Scott, Stockpile Readiness Program manager, a "check" for \$2,100,000 saved on three recent projects.

Take two for summer Materials Camp

The 20 high school students at the second annual Materials Camp got to do something very few people get to do: work with a scanning electron microscope. Better still, the world's largest SEM, which can analyze something as big as a V-6 engine.

"It's a very good learning experience in a field you rarely hear about," said student Vanessa Garber, a West High School senior. She and Maryville High School's Zane Palmer attended the camp last year, and both thought it was well worth a return visit.

Part of the camp was held in the Large-Chamber Scanning Electron Microscope laboratory, where the program focused on teaching the basics of failure analysis. "We showed them how to look for anomalies," said senior engineer Steve Dekanich. Students examined debris from the space shuttle *Columbia* and heard from



Systems engineer Jaret Frafjord (seated) of Quality Assurance works with Vanessa Garber (far left) and other students at Materials Camp as they examine a piece of debris from the space shuttle *Columbia*.

outside experts. Gramm Walford of Walford Technologies, which provides quality control for manufacturers, used thermal analysis and thermography to show students how heat flows through materials.

After five days of camp, the students had a new appreciation for materials science, which involves the properties of matter and their application to science and engineering. According to Garber, "Before, I rarely thought of things on a molecular level, or even thought about materials at all. Now, I wonder about the composition of things around me, and I understand the importance of materials to almost every field."

Materials Camp was presented by Y-12, the Oak Ridge Chapter of ASM International, the University of Tennessee Department of Materials Science and Technology, Oak Ridge National Laboratory and UT Materials Student Advantage Chapter.

The recognition continues: winners of photo contest

For the next few months, this feature will highlight the 30 honorable mention photograph winners of the Y-12 photo contest. Photos are shown in no particular order.



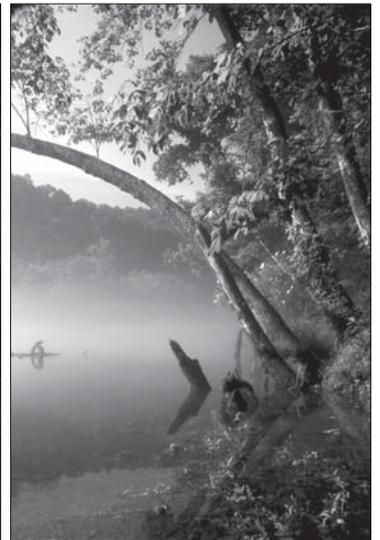
Bob Slaughter of Projects shot this photo, "Sunrise," in the Great Smoky Mountains.



"After the Storm" was shot in Cades Cove after the 2002 tornado in Mossy Grove, Tenn. Gene Stevens of Fire Protection Operations is the photographer.



"Reflections" was taken in October 2003 in Kingston, Tenn., by Michael Murray of Emergency Services.



Shot along the River Bluff Trail below Norris Dam, "Clinch River Morning" was taken by Scott Hackler of Fire Protection Operations.

Meet some of Y-12's good stewards

Bricks, mortar, pipes, lumber and iron—these are the basic building blocks of Y-12. Using these basics, the construction stewards help keep construction projects at Y-12 running smoothly and on schedule. For instance, millwright Mike Kolodi assembles and installs large manufacturing machinery and equipment. Boilermaker Cork Wilson keeps process equipment, tanks and containment devices in good working order. Larry Graves insulates all kinds of pipes—steam, condensate, chilled, brine and duct—as well as heating, ventilating and air-conditioning systems and other mechanical systems.

But these men, and 12 others like them, are far more than highly skilled workers. Because of their decades of experience and management skills, they've become stewards. That means they have been elected or appointed by their unions to be the fulcrum between management and labor.

Hal Livergood, superintendent, says a steward works as a representative of his union to resolve employee concerns and maintain good relations between labor and BWXT Y-12 management. According to Mike Jones, pipe fitter, that means both ensuring a safe and desirable workplace for his pipe fitters and policing the work of the Local 102 of the Plumbers and Pipe Fitters Union.

Sheet metal worker Jack Huffaker added, "In addition to maintaining an accurate overtime list, I try to keep employees informed of policy and rule changes, as well as stay in contact with the business manager of the local union."

A steward holds a key position that helps the entire plant to run smoothly.

"The steward position is vital," said ironworker Virgil Tollett. "We help bring attention to potential problems early, so there are no work stoppages."



Back row, left to right: James Freshour Jr., electrician; Larry Graves, insulator; Kenneth Buchannon, operator; Jack Huffaker, sheet metal worker; Mitchell Hashman, brick mason; and Tony Walker, laborer. Front row, left to right: Dennis Dyke, sprinkler fitter; Mike Jones, pipe fitter; Rodney Beeler, carpenter; Rodney Dean, cement mason; David "Cork" Wilson, boilermaker; and Mike Kolodi, millwright.

Why I do what I do

"I became a carpenter because I like to work with my hands."

—Rodney Beeler

"I can see my accomplishments immediately." —Kenneth Buchannon

"My dad was an insulator." —Larry Graves

"I've always enjoyed outdoor work and building things to last."

—Mitchell Hashman

Y-12 Construction Stewards

Rodney Beeler	United Brotherhood of Carpenters and Joiners of America	Local 50
Kenneth Buchannon	International Union of Operating Engineers	Local 917
Rodney Dean	Operative Plasterers and Cement Masons' International	Local 78
Dennis Dyke	Road Sprinklerfitters' United Association	Local 669
James Freshour Jr.	International Brotherhood of Electrical Workers	Local 270
Larry Graves	International Association of Heat and Frost Insulators and Asbestos Workers	Local 46
Mitchell Hashman	International Union of Bricklayers and Allied Craftsmen	Local 5
Jack Huffaker	Sheet Metal Workers International Association	Local 5
Mike Jones	United Association of the Plumbing and Pipe Fitting Industry of the United States and Canada	Local 102
Ricky Hips	International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America	Local 519
Mike Kolodi	United Brotherhood of Carpenters and Joiners of America-Tennessee Carpenters Regional Council Millwrights	Local 1544
Lynn Lawhorn	International Brotherhood of Painters and Allied Trades	Local 437
Virgil Tollett	International Association of Bridge, Structural, Ornamental, and Reinforcing Iron Workers	Local 384
Tony Walker	Laborers' International Union of North America	Local 818
Cork Wilson	Boilermaker's International Union	Local 453

Tips for online protection

The World Wide Web can often be a challenging but exciting place to navigate. While there are multiple benefits to the information superhighway, users have to be cognizant of the dangers. But there are steps you can take to protect yourself online.

Protecting your children

- Be involved. Interaction allows you to supervise your child's online activities while teaching him or her good computer habits.
- Keep your computer in an open area—this will make it easier to monitor your child's computer activity, will deter your child from doing something he or she is not allowed to do and will give you the opportunity to intervene if you notice unacceptable behavior.
- Create separate accounts on your computer. Doing so will allow you to control the number of privileges your child has and determine to what he or she has access.
- Parents can obtain more information from their internet service provider, a local computer or retail store, or their Web browser

about parental control tools. But remember, not every tool is 100 percent reliable.

Protecting personal information

- Update your software. Get all the updates your system needs in addition to using anti-virus software and a firewall.
- Create a strong password—the longer the better. Passwords should be eight or more characters in length, but 14 or more is ideal. Combine letters, numbers and symbols.
- Use a third-party payment service that allows you to transfer money to an online account and make payments from that account. An example is PayPal®.



What you do counts



Yolanda Hammond

Yolanda Hammond of Internal Audit asks lots of questions. Her job requires her to, and she invariably focuses on the who, what, when, where and why.

“And there is also the how,” said Hammond. “In a very short amount of time, we try to understand what is or is not working. We analyze detailed data from a company-wide perspective.”

Hammond's job involves communicating with management at Y-12 and the National Nuclear Security Administration. She said she and others in IA do “whatever it takes to help our department and the company do the right thing and do things right.”

IA performs independent and objective evaluations of the adequacy and effectiveness of management control systems and quality of performance. In this role, IA may perform a unique assortment of audits.

Hammond recognizes that an audit can be disruptive and even intimidating.

“We understand people are naturally cautious or defensive because they believe they will be blamed or punished if the auditors find something wrong.”

But Hammond said IA auditors are “... not mean people always looking for the negative. Although it may not seem like it, we really try to help people get what they need in order to do their job better, faster and in compliance with requirements.”

“IA tries hard not to make the situation worse or get people in trouble, but they do have to see how things work, and they have to gain as much knowledge about the area, process or program as possible,” said Hammond. “We are just like any other human being. We learn by watching and asking questions.”

Hammond said that while IA auditors try to work with people and present information fairly, there is one circumstance that will cause trouble.

“We absolutely cannot tolerate dishonesty,” she said. “Please don't lie, try to hide or withhold information from the auditor. It's like waving a red flag in front of a bull.”

Hammond said the most rewarding part of her job is her co-workers, and the interesting people she's met while working on projects.

“I also have the opportunity to see and experience a lot of different areas and operations at Y-12,” she said. She gets to see “... how the pieces work together to keep the whole Complex going.”

Hammond has been at Y-12 for 23 years.



JULY

44 years

Information and Materials: Frances H. Hickey

42 years

Manufacturing: Harvey L. Stevens

41 years

Quality Assurance: Jerry L. Harris

40 years

Human Resources: James M. Barnes

35 years

Applied Technologies: Thomas W. Dews

Facilities, Infrastructure and Services:

Roy D. Legg

Manufacturing: Robert L. Runkles and Robert L. White

30 years

Quality Assurance: Glen E. Hill

Applied Technologies: Charles T. Caruthers

Engineering: Harold M. Johnson, James R. Mathis and Robert B. Richmond

Environment, Safety and Health: Arlin L. Yeager

Facilities, Infrastructure and Services:

Curtis D. Anderson, Johnny R. Diden and Albert D. Kring

Human Resources: Samuel S. Long

Information Technology: Tate J. Brown

Manufacturing: Mattie D. Gallaher, Steven H. Jackson and Elizabeth P. Schaad

Safeguards and Security: Edward A. Tyl

National Security and Development

Programs: William J. Scheib

25 years

Facilities, Infrastructure and Services:

Terry L. Bowers, George A. Renfroe and Roscoe G. Wilson Jr.

Information Technology: Delpha K. Bradley

Manufacturing: Fred L. Lenoir

Quality Assurance: Jerry B. Wilson

Safeguards and Security: Janet L.

Plemmons

20 years

Chief Financial Officer Division: Elois M.

Passmore

Engineering: David W. Sheffey

Environment, Safety and Health: Laurie L.

Crutchfield

Information Technology: Rhonda L.

MacIntyre, Michael P. Muir and William B.

Ray

Planning and Integration: Kimberly R.

Johnson

Safeguards and Security: Kenneth J.

Maddux

AUGUST

45 years

Applied Technologies: Matthew J. O'Hara

41 years

Environment, Safety and Health: Nancy C.

Stidham

40 years

Facilities, Infrastructure and Services:

James F. Boyd

35 years

Engineering: Steven A. Larson

Facilities, Infrastructure and Services:

Ottis H. Prater

Quality Assurance: Ronald W. Whitehouse

30 years

Applied Technologies: Eugene L. Bird

Defense Programs Management: Joseph T.

Fisher

Engineering: Monty L. Goins

Facilities, Infrastructure and Services:

Mark R. Wright

Information and Materials: Deborah A.

Mullins

Manufacturing: Jimmy L. Boling, Gail C.

Ware and Roy G. Wilkerson

25 years

Environment, Safety and Health: Cathy J.

McCoy

Facilities, Infrastructure and Services:

Billy R. Aikens and Benny L. Allison

Human Capital: Linda S. Martin

Information and Materials: Bill C. Leach

20 years

Information Technology: Phillip L. Dunn

Quality Assurance: Deborah J. Boles and

Mattie K. Kelly

Trouble? PSS can help

You are leaving work and when you get to your car you discover a flat tire, or your keys are locked inside. Maybe it's a really bad day and your car won't start, and there is no one around to help.

Who you gonna call? Well, not ghostbusters. But have you thought of the Plant Shift Superintendent's Office?

Plant Shift Superintendent Manager Tim Morris said that his office is in a unique position to offer help to Y-12 employees in a bind. "As one of the few 24-hour, 7-day-a-week operations on-site, the PSS has access to resources and information to provide help to employees," he said.

Out of gas? The PSS office will arrange for the garage or the fire department to provide one gallon of gasoline to get you to a gas station.

Locked your keys in the car? "If it is normal business hours between 6 a.m. and 3 p.m., the employee should contact a locksmith listed in the Yellow Pages or a family member with a spare set of keys," said Morris. "And contact Visitor Control to arrange access to the site."

If it's after-hours or on a weekend, contact the PSS Office, which will arrange access for the locksmith or the person bringing spare keys.

If you don't know who to call, call the PSS office. If they can't help you, they probably know who can.

"Assistance from the PSS is not limited to vehicle problems," said Morris. "We can address safety and security issues."

If you have questions, call the PSS at 574-7172.



Y-12 history center opened

The New Hope and Jack Case centers were recently officially opened by a ribbon-cutting ceremony. Naomi Brummett, an original New Hope community resident assisted Congressman Zach Wamp cut the ribbon to the New Hope Center. Ed Westcott, Manhattan Project photographer who took all the black and white images being hung in the two new buildings, and Larry Case, Jack Case's son, cut the Jack Case Center ribbon.

As a part of the event, a temporary display of some historic Y-12 artifacts was created in the new Y-12 History Exhibit Hall. The displays and exhibits consist of historic photographs, artifacts, oral histories, posters, brochures and other information that convey the history of Y-12 and the importance of what Y-12 employees have done over the years.

The display was so well received that it will be opened until October for Y-12 employees to visit. The New Hope Center is located at 602 Scarborough Road. The exhibit hall is open from 11 a.m. until 1 p.m. Mondays through Thursdays. Employees are encouraged to stop by and bring their families.

If you have questions about the history exhibit, contact Y-12 Historian Ray Smith (srd; 576-7781). Smith would also like to hear your suggestions for future stories of Y-12's unique history.



Y-12 safety expertise benefits NRC's ROWS installation

At the annual Nuclear Weapon Security Summit held at Eglin Air Force Base Conference Center, Fla., from June 19–22, William Smith from the Nuclear Regulatory Commission summarized the NRC's experience installing and operating the first Remotely Operated Weapons System at an operating nuclear power station.

Smith emphasized the benefit of interagency cooperation for the ROWS installation and specifically expressed appreciation to the Y-12 National Security Complex and the National Nuclear Security Administration's Y-12 Site Office for their sharing of BWXT Y-12 safety analysis documentation (developed under the leadership of Bill Moon) and YSO Safety Evaluation Report documentation (led by Teresa Robbins of YSO) for the earlier NNSA ROWS application at Y-12. Access to this pertinent documentation, which summarized the ROWS implementation process, enabled Smith to save considerable time and money for the NRC. Smith estimated that the documentation, provided through interagency cooperation, reduced NRC installation time by one year or more.

A veteran safety analyst at Y-12, Moon lead the production of the Hazard Evaluation Study for Accidental Discharge of Firearms, an exhaustive investigation of safeguards and securities technologies released to the U.S. Department of Energy/NNSA complex. This documentation is updated annually to include new technologies as they become available to the complex. A compilation of Y-12 nuclear safeguards expertise from myriad relevant areas, the HES includes an extensive matrix of "What if?" scenarios, with projected causes and consequences, that benchmark current weapons technology. Combined with YSO's thorough investigation and the subsequent SER accompanying acceptance and approval of the weapons technology, the annual HES summary of innovative weapons deployment constitutes a valuable resource that benefits all DOE sites.

The NRC's successful application of existing documentation to their new ROWS installation demonstrates that extensive savings

can be realized through timely interagency cooperation and sets a precedent for future reciprocal sharing of innovative processes and products among the sites.



In front of the Remotely Operated Weapons System mobile platform are (left to right) Dean Sheridan (Y-12 Site Office Safeguards and Security), Teresa Robbins (YSO Safety Evaluation Report lead), Bill Moon (Y-12 Hazard Evaluation Study lead) and Robert Conner (Wackenhut Services Inc., Oak Ridge).

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Moving brings , regardless of destination

There has naturally been much publicity focused on employee moves into Y-12's beautiful new Jack Case and New Hope centers. But what about employees who are not moving into one of these new buildings?

Jim Smith of Projects put it this way. "I'm 67, have retired from Westinghouse after 38 years and have worked at BWXT Y-12 for five years. I thoroughly enjoy my job and could care less about where I sit or if I move or don't move."

Lynn Bland, also of Projects, agreed. "It doesn't really make any difference to me," he said, "as long as there are four walls and a chair."

Infrastructure Reduction's Melissa Portwood feels some irony that

her organization is moving. "IR has relocated hundreds of people over the last six years due to demolitions," she said. "I guess now it's finally our turn to move."

Many have mixed feelings about the disruption a move can cause.

"I really hate to leave," said Gwen Childress of Internal Audit, who currently enjoys working at the Office of Scientific and Technical Information site. "However," she said, "I do recognize the benefits of being on-site and physically close to the rest of the organizations."

Kathy Evans of Planning and Integration is looking forward to being nearer to her project team but worries about space in her new office quarters. "Not having all my project files will hamper me," she said, "but we will learn to work around the situation."

Information and Materials' Cindy Bailey said, "We have a good setup where we are." "We wish we didn't have to move."

Moving can be disruptive, regardless of destination. However, migrating employees can know that they are part of the "transformation" of Y-12. Alternate financed JCC and NHC are one tier of the transformation. The Highly Enriched Uranium Materials Facility and the Uranium Processing Facility are a few of the other parts of transforming Y-12 into a smaller, responsive, cost-effective enterprise.