

# Y-12 NATIONAL SECURITY COMPLEX



## MISSIONS

### **Maintain the safety, security and effectiveness of the U.S. nuclear weapons stockpile**

Weapons component production, surveillance, dismantlement and storage are four distinct facets of this mission. *Production* includes the manufacture of new components, which oftentimes are combined with recycled components into subassemblies. This process, referred to as refurbishment, extends the lifetimes of systems in the active weapons stockpile and ensures their effectiveness. Another aspect of this mission is *surveillance* testing, which determines how weapons in the active stockpile are aging. *Dismantlement* involves separating components of retired weapons and recovering nuclear materials from them. *Storage* occurs throughout all these processes.

### **Reduce the global threat posed by nuclear proliferation and terrorism**

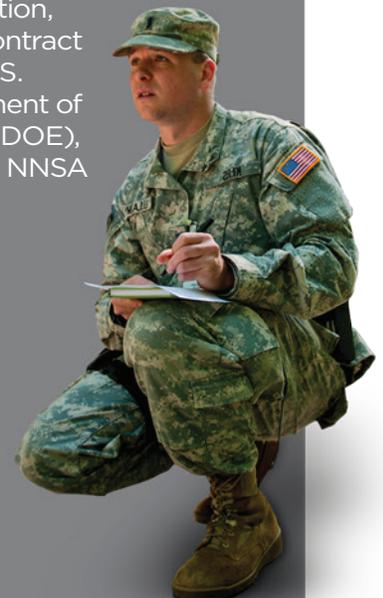
Y-12 works with NNSA and other federal agencies to secure vulnerable nuclear materials domestically and internationally. Activities encompass detection, removal and security of nuclear material and ultimately doing the swords-to-plowshares work of making weapons material available for peaceful uses such as fueling research reactors and producing medical isotopes. Through NNSA's Global Threat Reduction Initiative, Y-12 safely secures materials and transports them to Y-12 for ultimate storage or disposition. Additionally, Y-12 works domestically and internationally to ensure that materials are appropriately protected through training of protective forces.

### **Provide safe and effective nuclear propulsion systems for the U.S. Navy**

Y-12 provides highly enriched uranium (HEU) used in the fabrication of fuel for reactors in the Navy's nuclear-powered aircraft carriers and submarines under an agreement with NNSA's Naval Reactors Office requiring the availability of HEU through 2050.

The Y-12 National Security Complex in Oak Ridge, Tennessee, is one of four production facilities in the National Nuclear Security Administration's (NNSA's) Nuclear Security Enterprise (NSE). Y-12's unique emphasis is the processing and storage of uranium and development of technologies associated with those activities. Decades of precision machining experience make Y-12 a production facility with capabilities unequaled nationwide.

The facility is operated by B&W Y-12 LLC, a partnership of the Babcock & Wilcox Company and Bechtel Corporation, under contract to the U.S. Department of Energy (DOE), of which NNSA is a part.



# Y-12 National Security Complex Making the World Safer

## APPLIED EXPERTISE

Products and processes that Y-12 develops for use in a high-consequence production setting strengthen the science, technology and engineering competencies at the foundation of NNSA's missions. Y-12 actively seeks partnerships to commercialize these technologies, which not only help solve a variety of global security challenges but also have applications for allies, other government agencies and the private sector.

## KEY CAPABILITIES

Y-12 has developed state-of-the-art capabilities in three core areas: nuclear technology and materials, security and consequence management, and manufacturing and technical services.

Y-12 lends its specialized expertise to other federal agencies such as the U.S. Departments of Defense and Homeland Security, state and local governments, and private-sector companies.

Projects at Y-12 include providing protective equipment to soldiers in combat, training National Guard units for radiological emergencies, creating machining that improves production and efficiency, and implementing programs that save time and taxpayer money. Applying our capabilities to these endeavors while meeting core NNSA commitments ensures maximum benefit to our ultimate customer, the U.S. taxpayer.

## HISTORY

Constructed as part of the World War II Manhattan Project, Y-12 provided the enriched uranium for *Little Boy*, the atomic bomb dropped on Hiroshima, Japan, to help the United States and her allies end a war that had taken 63 million lives worldwide. Afterward, Y-12 provided lithium separation and key components for the thermonuclear weapons that helped end the Cold War. Using its precision machining capabilities, Y-12 produced the "moon boxes" in which Apollo astronauts brought material from the lunar surface to Earth. Y-12's expertise in machining, handling and protecting radiological materials has made the Oak Ridge site central to the nation's nuclear security.

## FACILITY SIZE AND TRANSFORMATION

Y-12 spans 811 acres, with 2.5 miles between its east and west boundaries. Housed within its borders are manufacturing, production, laboratory, support and R&D areas managed by various DOE offices. Excess, outdated buildings among the current 380 structures onsite are being demolished to sustain Y-12 operations, making way for a 21st-century NSE production facility built to modern-day nuclear, environmental, seismic and security standards.

## WORK FORCE

About 8,000 Tennesseans work at Y-12. Approximately 5,000—including about 500 protective force personnel—are B&W Y-12 employees. The subcontracted work force numbers about 2,150. The NNSA Production Office at Y-12 has approximately 80 employees.

**NNSA Production Office**  
Steven C. Erhart, Manager

**B&W Y-12**  
Charles (Chuck) G. Spencer,  
President and General Manager

**Union Representation**  
Atomic Trades and Labor Council  
International Guards Union of America

**For more information,  
please contact:**

**Y-12 Visitor Services,  
New Hope Center**

602 Scarboro Road  
Oak Ridge, TN 37830  
(865) 574-3280

**Alice M. Brandon**  
Public and  
Governmental Affairs  
brandonam@y12.doe.gov  
(865) 574-1640

To review technologies available for licensing, visit  
<http://www.y12.doe.gov/technologies>

**P.O. BOX 2009 • OAK RIDGE, TN 37831 • PHONE: 865-574-1640 • WWW.Y12.DOE.GOV**

