

PANTEXAN

FALL 2013



PANTEX PLANT - SECURING AMERICA

PLANT TRADITION

Lunchtime card game ongoing for 40 years

Though some of the faces have changed, there's one thing that hasn't. If it's lunchtime at Pantex, there's a game of Spades taking place. What started as a way to pass the time in the cafeteria during lunch is a ritual for Andy Marshall, Dale Moon, Jimmy Myers and Kevin Brown, whose job it is to bring the cards.

"It's fun. I see it as a break in the action of the job. Kinda like recess in elementary school," said Myers, a technical advisor and 33-year Pantex veteran. Eight hands are played each day with scores recorded in a log book. Why Spades? "It's easy to play and eat at the same time," said Myers. "Not much strategy involved."

Two alternate players, Kenny Steward and Mike Brinson, fill in when needed. On call are Barry Hill, Pablo Reyes, Adam Myers and Ron Wilcox.

"People play until they retire, leave or are unable to play," explained Myers. "We then usually let the first alternate in the game replace the starter." At times, players leave Pantex to work elsewhere and then return to the Plant, as is the case for Steward and Brinson. "They are waiting

for their chance to be the starting pitcher, rather than a bullpen ace," said Myers.

There's not much Kevin Brown, program manager and 18-year Pantex veteran, doesn't like about the lunchtime card game. "The camaraderie and competition, with a little trash talking, allows us a break from the hectic day, even though for just a short period of time," he said. "It can be a stress reliever."

Special rules keep the 40-year-old game interesting. One is that no matter how far behind you are, you can win in the last hand. But serious business it isn't. "We usually remember everyone's most ignorant play and then keep reminding them about it later," said Myers.

Among Myers' favorite memories is the time then-General Manager Denny Ruddy approached the group to ask what they were playing. "We all thought, well, I guess this game has come to an end. But, he was truly interested and began making fun of how Steward was playing his hands."

By Mig Owens



Pantexans uphold a tradition that began in the late 1970s as they play Spades during lunchtime in one of the Plant's cafeterias. Photos by Larry Dov' Batchlear

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Wind turbine foundations are built as construction gets under way for the Pantex Renewable Energy Project. The project, referred to as PREP, will provide more than half of the annual electricity for Pantex when it goes live in approximately July 2014. When complete, it will be the largest federally owned wind farm in the country. *Photo by Mark Smith*

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PANTEX BEHIND THE SCENES:

Operations and Emergency Services Dispatch Centers

"May I have your attention please?" The room instantly grows quiet as Pantexans listen to the familiar voices for directions, notifications or warnings. The Operations Center (OC) is what some may call the Heart of Pantex. It is responsible for 24-hour management of operations to ensure the overall safety and efficiency of the Pantex Plant.

Established under the Department of Energy's (DOE) Occurrence Reporting Program in 1990, the OC strives to provide information to the appropriate publics in a timely manner. The Center began operations in a small conference room with few supplies. The need for more equipment and space quickly became obvious. Soon after, operations moved to the building where they remain today.

With 12 years of experience at the Plant, Matt Eberly recently accepted the position as Emergency Services Group manager, which encompasses both Fire and Emergency Management Departments. "The work is extremely important because both the OC and Emergency Services Dispatch Center (ESDC) programs require prompt, safe and reliable action 24/7 to support Plant operations and our surrounding communities," said Eberly. "The ESDC and OC teams are required to operate in an environment where precision and effectiveness are critical. They essentially work in the nerve center of all Plant operations."

The OC consists of nine employees, each with at least 30 years of experience at the Plant. Eight of them are Plant shift superintendents, while

Bill Ornelas is Pantex's Move Right specialist. The OC is responsible for a number of operations, such as weather notification activities, movement of materials and initiation of protective actions for Plant personnel.

Randy Nuttall, who started in the Maintenance Department, enjoys working in the OC because of the diversity within the job. "Every day is different. You never know what the call is going to bring. And it helps that I work with the best group of people," said Nuttall.

Across the hall from the OC is the ESDC. Similar to the OC, it houses nine employees working side-by-side. The ESDC is responsible for testing fire alarms throughout the Plant, assisting surrounding counties with emergency calls and for medical and fire emergencies on Plant site.

When the ESDC first started operations in 2006, Don Rhoades, a Pantex veteran, transferred with over 29 years of experience in security. He said the transition was easy and normal, and he enjoys where he is working now. "I love the job itself. Our main goal is to protect life and property, and when I go home at night, I feel a sense of accomplishment knowing that I helped people that day," said Rhoades.

His colleagues, Dorcas Gaddis and Steve McWilliams both agree that communication is what makes them successful. McWilliams explained that the job comes with great pride in knowing potential lives are saved each day.

By Britney Evenson



Robert Inglis and Forrest McLaughlin (seated) review incoming information at the Operations Center, the 24-hour base often referred to as the Heart of Pantex. At the Plant's Emergency Dispatch Center, Dorcas Gaddis and Melodi Parton (seated) monitor fire alarms from the Center's testing console. Photos by Larry Dov' Batchlear



Steve Erhart
Manager
NNSA Production Office

SECURING AMERICA



John Woolery
President and General Manager
B&W Pantex

MESSAGE FROM THE MANAGERS

It was a long time coming. Now the word that best describes our feeling about Pantex being home to the largest federally owned wind farm in the nation is pride.

Not only will the Pantex Renewable Energy Project, or PREP, fuel more than 60 percent of the Plant, we're ushering in a new era in energy use at a nuclear weapons production facility.

Reducing the site's dependence on non-renewable energy is yet another way Pantex can provide responsible service to our nation, and we're excited to pave the way for the federal government when it comes to wind energy.

A result of this six-year journey to harness our Class 4 wind zone to help power Pantex is an innovative business model that teams the government with business and down the road could involve a partnership with a university that is nationally recognized for their expertise in wind energy research.

Siemens Government Technologies, Inc. has already started work on the wind farm under an energy savings performance contract, and will be paid directly from the value of guaranteed energy savings. That savings is expected to average \$2.8 million annually over an 18-year period.

Our long-time research partner, Texas Tech University, will perform work in follow-on stages that involves studying turbine-to-turbine wake interactions across the full farm array.

Though we've faced many challenges getting to where we are today, our resolve to increase use of renewable energy at Pantex has never wavered. We now look forward to watching the towers and turbines go up and our relationship with Siemens and Texas Tech grow.

Sustainability is crucial, and in the end, the Pantex Renewable Energy Project is not only good for Pantex and the Department of Energy, it's a good move for our community and our country.



PREPING FOR THE FUTURE OF RENEWABLE ENERGY AT PANTEX

Construction begins on largest federally owned wind farm in U.S.



Chuck Mitchell, Siemens project manager, and Robert Cole, B&W Pantex Line Items program manager, review plans at the wind farm construction site. *Photo by Larry Dov' Batchlear*

Towering above the wind-whipped plains of the Texas Panhandle, the Pantex Renewable Energy Project will stand astride the critical missions of the DOE and the National Nuclear Security Administration (NNSA).

The massive spinning turbines of the project will use limitless wind to create renewable energy to drive the Pantex Plant, where the power of atomic energy is harnessed to Secure America by creating a safe and reliable U.S. nuclear stockpile.

Construction of the project officially began August 13 with a groundbreaking ceremony at Pantex featuring high-ranking officials from the DOE, NNSA and the project's contractor, Siemens Government Technologies, Inc.

"This is truly a remarkable project that carries an immense amount of symbolism," said NNSA Production Office Manager Steve Erhart. "Using renewable energy to power a nuclear weapons plant combines two seemingly unrelated missions and reveals that, fundamentally, both



NNSA Production Office Project Manager John Herrera, NPO Project Manager (retired) Johnnie Guelker, NPO Manager Steve Erhart, Siemens Government Technologies, Inc., President and CEO Judy Marks and NNSA Deputy Administrator for Defense Nuclear Nonproliferation Anne Harrington take part in the PREP groundbreaking event. Photo by Michael Schumacher, Amarillo Globe-News

are important to the future of the United States.”

The project, known as PREP, will consist of five 2.3-megawatt turbines located on 1,500 acres of cultivated land east of the Plant. When it is complete in July 2014, it will be the largest federally owned wind farm in the country.

PREP will generate approximately 47 million kilowatt-hours of electricity annually, which is more than 60 percent of the annual electricity need for Pantex, or enough electricity to power nearly 3,500 homes. The project will reduce CO₂ emissions by over 35,000 metric tons per year; the equivalent of removing 7,200 cars from the road each year or planting 850,000 trees.

The wind farm will play a key role in helping Pantex achieve President Obama’s directive that the federal government lead the way in clean energy and energy efficiency. The Administration set a goal for the federal government to get 20 percent of its electricity from renewable resources by 2020.

Siemens will construct PREP under an Energy Savings Performance Contract, delivering a turn-key wind farm system for 18 years with an annual energy production guarantee. Siemens will be paid directly from the value of guaranteed

energy savings generated by the turbines, an amount expected to average \$2.8 million annually.

Siemens has already placed all five of the wind turbine generator concrete foundations ahead of the scheduled dates, according to Rodney L. Whisenhunt, B&W Pantex PREP project manager.

“The Pantex wind farm will stand for decades as an important symbol of our need to confront head-on the energy and security challenges that face our nation,” said John Herrera, Federal Project manager. “With hard work and innovative thinking, we can overcome those challenges and point the way to a brighter, safer and cleaner future for us all.”

By Greg Cunningham



When finished next year, the PREP wind turbines will be located just south of these privately owned turbines already in service near Pantex. Photo by Mark Smith

CoLOSSIS KEY TO NONDESTRUCTIVE STOCKPILE ANALYSIS

Pantex Home to World's Only Computed Tomography Imaging System for Pit Surveillance

What does it take to look inside the core of a nuclear weapon? Start with four cryogenically cooled astronomy cameras capable of 8,000 by 8,000-pixel images, one four-sided pyramidal mirror and a burst of photons generated by an X-ray source nearly 100 times more powerful than a medical computed tomography (CAT) scan, and you have the world's only computed tomography imaging system used to determine integrity of pits – CoLOSSIS.

As many as 1,800 images of each pit are taken over multiple days at Pantex using the Confined Large Optical Scintillator Screen and Imaging System, or CoLOSSIS, to nondestructively determine if they will function as expected. A pit is a component made of plutonium metal and is the heart of a nuclear weapon. The imaging is conducted on surveillance units as designated by the National Laboratories.

"CoLOSSIS is important to Pantex in that it helps keep us in business. This technology allows us to look at these components nondestructively," said Steve Dixon, Production section manager. "For the Labs to do so destructively is very costly."

Prior to the introduction of CoLOSSIS three years ago, film was used for analysis of pits, which offers only a two-dimensional perspective. But confidence in the nation's nuclear stockpile required more efficient technology.

"CoLOSSIS provides much better diagnostic capabilities than what could be obtained from a two-dimensional film, in which there are no real-time image adjustment capabilities," said Josh Gerken, Non-Destructive Evaluation Department manager. "The resolution provided by CoLOSSIS gives surveillance engineers a much better look at component integrity, and in turn a greater deal of confidence in the state of stockpile components than what could be seen in the past."

The 32,000-pound, lead-shielded CoLOSSIS is operated by highly trained quality assurance technicians whose background stems from the medical or industrial non-destructive evaluation fields.

It takes an average of 15 to 18 hours for CoLOSSIS to work its magic, during which time a component rotates approximately 0.2 degrees for each image until it has rotated 360 degrees to capture an entire data set. During each rotation, the X-ray source known as a linear accelerator, or LINAC, produces photons collected by a scintillator that converts the photons into green light used to create a digital image. Collimators direct the energy, focusing the X-ray beam onto a pyramid-shaped mirror that reflects the light into the cameras, which in turn collect the data.

Data is then transmitted to Lawrence Livermore National Laboratory, designer of the system, and Los Alamos National Laboratory. The labs use computer code to reconstruct the analyses by stitching images taken by the four cameras into one. This offers scientists a three-dimensional view inside the nuclear weapon's core that they can literally "walk through" to detect manufacturing flaws and the effects of aging.

"This system represents a successful collaboration between Pantex and the Design Laboratories, despite the technical challenges that are to be expected of a one-of-a kind system like CoLOSSIS," said Gerken.

Designs for a second CoLOSSIS system are in the works and equipment is being procured, Gerken said. "Once operational, this system will give us a second line to aid in workflow throughput and could possibly provide capabilities for analysis of different components," he said.

By Mig Owens

Dana Landrum, Quality Assurance technician, is reflected in the four-sided pyramidal mirror of CoLOSSIS, a computed tomography imaging system unique to Pantex and used to nondestructively determine the integrity of pits. *Photo by John Ebling*





GC SUPPLIES

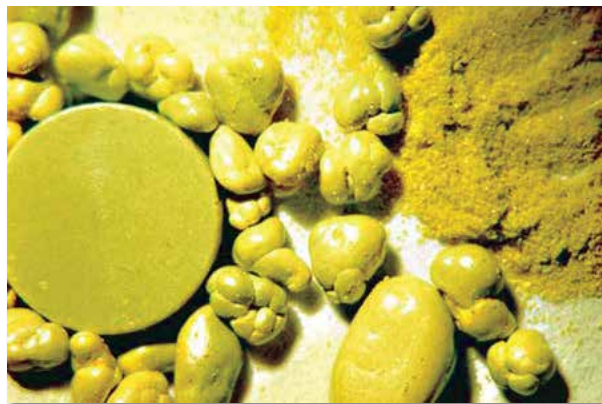
PANTEX USES INSENSITIVE HIGH EXPLOSIVES EXPERTISE TO REPLENISH RESERVES

Critical weapons material formulated and tested as part of Work for Others

Out of production for 30 years, insensitive high explosives are in demand once again. With no current supplier, Pantex is part of a Defense Logistics Agency collaboration to revive production of Triaminotrinitrobenzene (TATB), the material used to power both conventional and nuclear weapons.

Discovered in 1898, TATB production was strong in the 1970s, with commercial production taking place in the 1980s. Because it was manufactured in such large quantities, demand eventually dropped off, leaving stockpiles high.

"The Department of Defense (DoD) uses this material in mortars, and consumption has gone way up, but nobody in the United States makes it anymore," said Monty Cates, Explosives Technology Division manager. "Even at Pantex, we have enough to cover an upcoming Life Extension Program, and then stockpiles will be short of future needs."



Triaminotrinitrobenzene formulated and tested at Pantex.

In an effort to establish a supplier other than the DOE Strategic Reserve, the DOE and DoD teamed up and tapped Pantex to manage the two-year Work for Others project.

"We are the High Explosives Center of Excellence for Manufacturing. It's what we've been recognized for and it's our niche," said Cates. "We've got the facilities and scientists, engineers and technicians who work with high explosives day in and day out."

When qualified, full production of TATB will take place at Holston Army Ammunition Plant in Tennessee. Future related work for Pantex may include providing strategic storage of the material.

Work for Others is on the rise at Pantex and of increased importance in light of funding challenges. Pantex saw an increase in Work for Others of 123% from fiscal year (FY)11 to FY12 and has maintained that amount this year, despite the effects of sequestration.

"We are a low-cost alternative in the Nuclear Security Enterprise," said Perry Kent, External Missions Center program manager. "Our effort to build customer confidence these past two years has put us in position to double the program again in FY14."

The Work for Others Program encompasses work performed at Pantex for entities outside the DOE, including other government agencies and commercial companies. This program falls under the Pantex External Missions Center, formed last year to manage work outside the core mission of the Plant.

"There's a lot of growth potential here," said Gregg Chambliss, Reimbursable program manager, "We're opening our arms up to support our customers in ways we never have before."

Work for Others offsets shrinking budgets in other areas, explained Cates, and that allows Pantex to keep facilities open and people with critical skills employed.

To this end, Cates recently established the Special Application and Focus Experiments Department, a self-sustaining research and development group within the Explosives Technology Division, under which the TATB certification and qualification project falls. The goal is to place special emphasis on research and development by separating it from production work.

By Mig Owens



EXPLOSIVE FORCE DEMONSTRATED IN THE NAME OF SAFETY

Neighbors, students, media gather to experience shock waves

First you see it, and then you hear and feel it. That's the power of a high-explosives (HE) test shot at Pantex, the DOE's High Explosives Center of Excellence for Manufacturing. Testing of HE is a critical part of ensuring that nuclear weapons are safe and reliable, and Pantex employs chemical and physical testing techniques, as well as detonation and reaction tests, to ensure the safety and reliability of the nation's nuclear weapons mission and stockpile.

For the Dettens, who can see Pantex from their North 40 gate, an explosives demonstration in July was a rare opportunity to understand firsthand what's involved in the test shots for which they receive regular notifications. "I always feel the house rattle and the horses jump pretty hard," said Steve Detten, whose relatives were asked to move and find other farm land when Pantex was built during the early days of World War II. Though Tonya Detten works at the Plant, her husband and son had never been through the gates.

This first-ever demonstration attended by neighbors and local media began with a shoe rigged with a detonator containing a few grams of explosive, resulting in a hole blown cleanly through the toe. Intensity grew to an explosives-charged watermelon, followed by demonstrations of explosives of increased mass and consequence.

The take away from the demonstration is that a steel-toed shoe, for example, offers virtually no protection from a high explosive event, yet explosives do behave predictably and are a useful tool when used appropriately.

To work safely and confidently with explosives, Pantex experts are highly trained and follow strict safety procedures, taking special precautions to protect themselves, co-workers and the public. Specialized equipment and tooling prevent inadvertent damage to explosives, and

facilities are designed and built to minimize the effects in the unlikely event of an accidental explosion.

Visiting Pantex on the day of the demonstration with his Route 66 & Atomic West students, University of West Florida Instructor Patrick Moore said that of all the sites they've visited, Pantex has a closer connection to the national defense mission of protecting and maintaining the stockpile. "Pantex is at the center of the mission, and it is imperative that we maintain this (Pantex). There's a necessity component you get here you don't get in other places," said Moore. "Best part of the trip."

Michael Schumacher, *Amarillo Globe-News* photo editor, acknowledged that covering Pantex is difficult because of tight security and the sensitivity of the mission. "We come out here very rarely," he said. "I appreciate the fact that we're included along with the neighbors in this event to see what's going on."

The history of HE operations at Pantex reaches back to World War II when expertise was developed at the Plant while manufacturing conventional bombs for the war effort. Today, Pantex manufactures main charge HE and other small explosive components. Main charge HE surrounds the plutonium pit in a weapon and compresses the pit into a denser mass, causing a nuclear detonation. In addition to its HE manufacturing mission, Pantex collaborates with the national laboratories on research and development.

Future HE operations at Pantex will be conducted in the new 45,000-square-foot High Explosives Pressing Facility, expected to be complete in 2016. The \$65M facility will consolidate and modernize operations that now take place in six separate buildings and provide increased levels of protection for workers.

By Mig Owens

About the photos:

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1. An explosives-charged watermelon is blown to smithereens during the explosives demonstration at Pantex.
2. The crowd, which includes Pantex neighbors, media, visiting college students and employees, reacts to the explosive power demonstrated.
3. Engineering Technician Bo Pelton uses the phone booth at the Firing Site to coordinate operations and communicate with the Federal Aviation Administration prior to detonation of explosives.

Photos by Michael Schumacher, *Amarillo Globe-News*

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PANTEX POSTSCRIPTS

Plant earns Star of Excellence for outstanding safety

For the second year in a row, DOE awarded B&W Pantex the Voluntary Protection Program Star of Excellence for its safety performance, singling out the plant as one of the top safety performers within the DOE. This is the fourth year Pantex has been honored by the program.

"It is a remarkable achievement for Pantex to be singled out as one of the top sites in the VPP program for this many years, and it is a testament to the dedication to safety of all Pantexans," said B&W Pantex General Manager John Woolery.

The Star of Excellence Award is granted to a site that maintains a Total Recordable Case rate 75 percent lower than the industry average.

Scholarships awarded to B&W Pantex children and spouses

B&W Pantex scholarships in the amount of \$1,000 were awarded to 11 children of Pantex employees. Criteria included academic achievement, class rank, ACT/SAT scores, need, an essay and extra-curricular activities. Two spouses of employees were awarded the Pantex Spouse Scholarship in the amount of \$500. Criteria included career goals, college grades, an essay, need and letter of recommendation.

Pantex recognized for support of Guard and Reserve

In recognition of its support for employees in the Guard and Reserve, Pantex was nominated for the Secretary of Defense Employer Support Freedom Award for 2013. Nominations were submitted by Pantex employees serving in the National Guard or Reserve.



Pantex saves \$100,000 by repurposing old trailer

In 2012, the search began for ways to improve the emergency response capabilities of the Pantex Radiation Safety Department with a mobile decontamination trailer. The purchase of a new trailer through the U.S. General Services Administration was approved at a cost of \$122,000, but B&W Pantex kept searching for a less expensive alternative.

The search led to an available trailer already at Pantex that was in critical need of repair. After lengthy research, employees from the Radiation

Safety Department found a local business that could refurbish the trailer for \$23,000.

The trailer is fully equipped with four showering units, water supply, self-contained waste handling, two 80-pound propane tanks and its own generator. It is intended for use in decontaminating victims in the unlikely event of a radiological or chemical accident. The trailer is slated to be used to decontaminate victims prior to moving them into the site's medical facilities, but it remains mobile and could be used in other locations.

Photos by Larry Dov' Batchlear



In the Community

Pantex continues community outreach

Pantexans showed their community spirit when employees, along with their families and friends, volunteered their time at two local nonprofit organizations.

More than 40 volunteers came to an event called America Supports You, Texas, to assemble care packages for our troops in Afghanistan. America Supports You, Texas, was founded in 2005 to create awareness and support for active military men and women, as well as veterans in our area. More than 200 boxes filled with snacks, personal care items and books were mailed overseas the next morning.

Another group of Pantexans and their families went to the High Plains Food Bank to lend a hand with its community garden. The garden was severely damaged in hail storms last month.

The majority of the garden's produce benefits children and afterschool programs throughout the year.

The garden has only two full-time employees and relies heavily on volunteers to help out. With the help of the Pantexan volunteers, the garden is expected to recover and produce fruits and vegetables well into the fall season.

Photos by Laura Bailey

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