

Redeployment of National Guard, State Police Doesn't Diminish Plant Security

Following the end of the war in Iraq and the return to a lower national security threat level, Gov. Ed Rendell re-deployed the Pennsylvania State Police and National Guard personnel who have been stationed at the state's five nuclear power plants for the past 20 months.

The federal Office of Homeland Security agreed with this decision. But that doesn't mean the emphasis on security at any Pennsylvania nuclear power plant, including Susquehanna, has diminished.

"PPL has always been concerned with security of the entire infrastructure used to provide electricity to the consumers and continues to make this a high priority at Susquehanna," said Bryce Shriver, PPL senior vice president and chief nuclear officer. "While we are pleased with the support the state police and the National



Pennsylvania State Police and National Guard augmented PPL Susquehanna's security force.

Guard have provided, Susquehanna's security response is not dependent on their continuous presence."

National Guard and state police will conduct random, unannounced patrols around the plant sites. Additionally, these resources and others remain immediately available to Susquehanna, and any of the Pennsylvania nuclear power plants, should they be needed, said Roland Ferentz, manager-Nuclear Security.

Susquehanna has been at an elevated security level for nearly two years. During this time plant security forces and state and federal regulatory and law

enforcement agencies have worked together to enhance security measures and increase coordination.

Additionally, the plant augmented its already strong security program by increasing patrols,

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Industry Security News

- An independent study by the Electric Power Research Institute demonstrated through state-of-the-art computer modeling that structures housing reactor fuel at U.S. nuclear power plants would protect against a release of radiation even if struck by a large commercial jetliner.
- The Nuclear Regulatory Commission, which sets security requirements for nuclear plants such as Susquehanna, has added two new executive assistant positions to specifically address security matters.
- The NRC issued orders enhancing security and revising training requirements to reflect the "new environment in which we live."

Plant Makes the Grade

The Nuclear Regulatory Commission found that the Susquehanna plant operated "in a manner that preserved public health and safety" and fully met all performance objectives for the year 2002.

Susquehanna plant management and the NRC reviewed the annual assessment report at a public meeting on March 31.

"We value the NRC's independent assessment of our performance," said Rich Anderson, vice president-Nuclear Operations. "We use this type of information, along with our own assessments and industry benchmarking, to continue to improve Susquehanna's operations."

The NRC based its annual assessment of plant performance on more than 3,100 hours of inspections and its review of plant NRC performance indicators from Jan. 1, 2002, to Dec. 31, 2002.

The NRC inspections reported 16 findings of "very low significance." Two other findings had been previously reviewed and addressed by plant personnel and reported to the public. These included a violation of regulatory requirements that govern the plant's dry cask storage system and a "low to moderate safety significance" inspection finding concerning emergency staffing, which occurred in 2001. Both were corrected last year.

NRC officials commented that the station was "doing well," had

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Drills Keep Plant, Community Prepared

To ensure that Susquehanna can protect the health and safety of the public in the event of an emergency, plant personnel and community emergency responders regularly test the emergency response network.

In fact, these plans were used during two brief, low-level events earlier this year.

“Plant employees executed our

emergency plans as they are trained to do,” said Jeff Grisewood, supervisor of Nuclear Emergency Planning, noting that neither of the incidents threatened

public safety. “Their skilled response demonstrates that our training and practice drills do prepare us for real events.”

In January, Susquehanna conducted the first of four plant-wide emergency

exercises scheduled for this year. These drills include plant personnel only. The next drill to include municipal, county and state response organizations will be held in 2004.

As part of Susquehanna’s emergency plan, PPL also provides and maintains a network of 112 sirens for use by Luzerne and Columbia county officials in any emergency, nuclear or non-nuclear.

Siren growl tests:

- Wilkes-Barre area — weeks of July 7 and Oct. 13
- Hazleton area — weeks of June 9, Sept. 1 and Dec. 8
- Bloomsburg area — weeks of May 12, Aug. 4 and Nov. 10

Susquehanna performs monthly, silent tests of the siren system. A full-scale test is scheduled for May 28. Additionally, the plant runs quarterly, regional “growl” tests.

Instructions on what you may be

asked to do in case of an emergency are in the blue pages of your local telephone book.

Running the Course for Long-Term Success

PPL Susquehanna continued to make strides last year as an industry leader.

“Our achievements in 2002 and our direction for the next five years set the course for Susquehanna’s long-term success,” said Bryce Shriver, PPL’s senior vice president and chief nuclear officer.

Last year, Susquehanna was recognized by the U.S. Occupational Safety and Health Administration for going beyond compliance to protect worker health and safety.

Susquehanna Unit 2 set a station run record with 526 days of continuous generation — a testament to the equipment reliability improvements made during the unit’s last planned

refueling outage.

And, pacing itself with industry markers, Susquehanna scored in the top 25 percent of an industry-recognized performance index and in personnel radiological safety.

The plant also announced its intentions to apply for operating license renewal and joined two industry alliances to help the station continually improve.

Besides continuing to strengthen the areas Susquehanna has already excelled in, Shriver said the station also has identified the need to build its workforce, become a leader in regulatory performance and build industry relationships that will provide opportunities to learn from best practices.

Learning From Others Strengthens Programs

Improvement might occur in a vacuum, but becoming the best can’t.

PPL Susquehanna has worked to develop industry relationships to help the station achieve and maintain the highest safety and operational standards.

“Over the years, we’ve improved our operations through analyzing our own experiences,” said Bryce Shriver, PPL senior vice president and chief nuclear officer. “We’re also adding to that by learning from the experience of others.”

To do so, Susquehanna joined the Utilities Service Alliance Inc. and helped form the Northeast Energy Alliance.

Through cooperation and collaboration, member plants strive to maximize safe plant production, reduce operational costs and improve overall performance. They share resources, participate in self and peer program assessments and learn best practices to address plant-specific and emerging industry issues.

Each member station holds one another accountable for achieving excellence in safety, operational, financial and regulatory performance.

“Maximizing the benefits of industry relationships to improve performance is a key component to Susquehanna attaining top standing in our industry,” Shriver said. “Our participation in the Utilities Service and Northeast Energy alliances will help us achieve that goal.”

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“substantial safety margins” and was a “very secure plant.” The panel also said that PPL Susquehanna demonstrated a self-critical approach and noted that performance improves by continuously questioning the way business is done.

As a result of Susquehanna’s 2002 performance, the NRC plans to conduct only the standard inspections at the plant through March 31, 2004.

All operating commercial power plants are evaluated under the NRC’s reactor oversight process.

Susquehanna Unit 2 Completes Most Successful Planned Outage in Plant History

On April 21, operators at the Susquehanna plant began to awaken the Unit 2 reactor.

As the unit came back to life, it signaled the most successful planned outage in the plant's 20-year history.

While the sleeping giant rested, the crews of Susquehanna did anything but.

For the 44 days the unit was off line, workers executed the plant's largest improvement project ever, performed significant upgrades that have set industry examples, replenished the reactor's fuel and carried out systematic preventive maintenance. In all, work teams completed more than 2,100 work orders.

"The long-term benefits that will result from the excellent work of our crews will continue to improve our ability to provide reliable, efficient and cost-effective power that we all depend on at home and at work," said Rich Anderson, vice president-Nuclear Operations.

In the plant's history-making improvement project, workers moved more than 4.6 million pounds of material when they replaced all four of the unit's steam turbines, which spin the generator to produce electricity. The project required a total of about 150,000 man-hours — the equivalent to a standard refueling outage by itself.

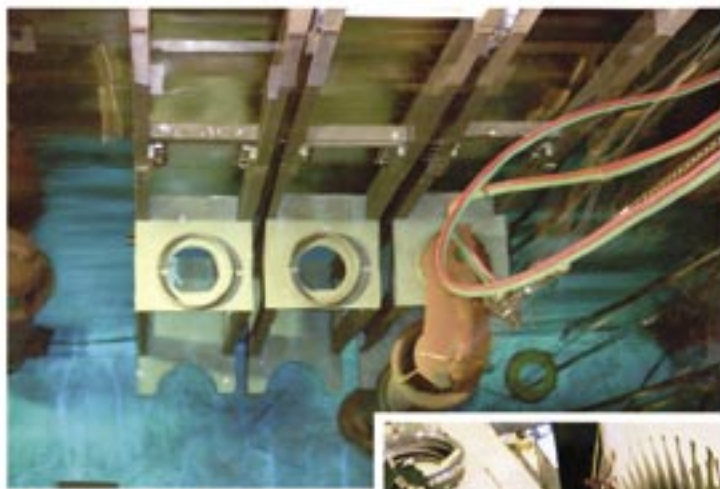
"This long-term investment provides us with an additional 50 megawatts of generation capacity, increasing Susquehanna Unit 2's output to 1,150 megawatts," Anderson said.

Crews also successfully machined labyrinth seals on all 20 of the unit's jet pumps, which are used to drive water from the recirculation system back through the reactor core. The new seals eliminate the excessive wear caused by vibration and increase the reactor's fuel efficiency.

The modification, which had never been done on an operational boiling water reactor, required the jet pumps to remain submersed under a minimum of six feet of water. "Our innovative work on the jet pumps has made us a model for other operational boiling water reactor plants across the country," Anderson said.

During the outage, crews also replaced 284 fuel bundles — about 40 percent of the unit's uranium fuel — which will enable Unit 2 to operate for 24 months before another refueling. This was the 11th refueling outage since Unit 2 began operation in 1985.

Unit 2's older sibling will undergo similar turbine and jet pump projects next year during the Unit 1 refueling outage.



Above, six feet of water covers the top of a jet pump that rests in a stand awaiting its turn to be modified. Once in the sealing station, an electric arc will burn grooves into the pump's metal base, which is about 18 feet under water.



Above, crews prepare to open the reactor lid so they can replace more than 280 uranium fuel bundles.



Preparation for the turbine replacement project began more than two years ago. This low-pressure turbine is about 14 feet in diameter, 34 feet long and about 140 tons.



U.S. Nuclear Power Plants Set Performance Records

The nation's 103 operating reactors generated more power and raised capacity to the highest levels in history last year, underscoring the crucial role that nuclear power plants play in the nation's diverse portfolio of energy sources.

U.S. nuclear power plants set output records for the fifth consecutive year, resulting in more than 780 million net megawatt-hours on the grid and an average capacity factor of 91.5 percent in 2002. Capacity factor is a measure of efficiency.

Although no nuclear reactors have come on line since 1996, the increase in electricity production from nuclear plants in just the past five years equals 13 new 1,000-megawatt power plants.

Nuclear power plants operating in 31 states provide electricity to one of every five U.S. homes and businesses and provide about 70 percent of the electricity generated by sources that don't pollute the air.

White House Names New NRC Head

The Bush administration designated Nils Diaz to head the U.S. Nuclear Regulatory Commission, which oversees the nation's 103 operating nuclear power plants.

Diaz is in his second five-year term as a member of the five-person commission. He began his first term on Aug. 23, 1996; his current term runs until June 30, 2006.

NRC Adopts Recommendations for Regulating Nuclear Power Plants

The Nuclear Regulatory Commission is overhauling the way it regulates U.S. nuclear power plants in response to criticism that it should have detected damage to an Ohio nuclear reactor sooner.

The commission adopted nearly all 50 staff recommendations from a report on the

Davis-Besse plant in northern Ohio. Those recommendations include conducting more thorough inspections, demanding better assurances from plant operators that problems get fixed, and creating a mechanism for faster intervention when irregularities are spotted.

Last year, a boric acid leak was responsible for damaging the Davis-Besse reactor cap. The plant remains closed for repairs.

No similar problems have been found on the nation's other 68 pressurized water reactors.

PPL Susquehanna uses boiling water reactors, which do not use boric acid in their day-to-day operations.

Exelon Seeks 20-Year License Extension for Nuclear Plants

Exelon Corp. has applied for operating license extensions for its Dresden and Quad Cities nuclear power plants in Illinois.

If the U.S. Nuclear Regulatory Commission approves Exelon's request, Quad Cities' two units will be licensed to operate until 2032 and Dresden's two units will be licensed to operate until 2029 and 2031.

Exelon expects the NRC to take about two years to review the license extension requests. To date, the agency has approved license extensions for 10 of the 103 commercial power reactors in the U.S.

Last spring, PPL Susquehanna announced plans to submit a license renewal application to the NRC to extend the operating licenses for the plant's two units to 2042 and 2044. Susquehanna expects to file the application in the third quarter of 2006.

Plant Security

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strategically placing barriers to protect critical equipment and structures, closing all secondary entrances and increasing entry restrictions, Ferentz said.

Each of Pennsylvania's nuclear power plants has invested an average of more than \$1 million for security upgrades and, on average, will spend an additional \$1.3 million annually in ongoing security costs – with Susquehanna's investment being slightly higher.

To date, there has been no credible threat against any specific U.S. nuclear power plant.

"PPL Susquehanna has a detailed plan in place with appropriate security enhancements for each threat level to ensure the safe operation of the station," Ferentz said. "We've always had, and will continue to have, a strong working relationship with the state police, whose barracks are less than a half a mile from the plant entrance."

Numerous physical security features, both visible and unseen, and a highly skilled security force protect the plant every day from attack.

The security force is supported by sophisticated electronic detection systems that monitor the plant's protected area perimeter remotely from multiple locations, and entry to the plant's protected area is highly controlled.

U.S. nuclear power plants, including Susquehanna, also are designed with a series of structural and radiation barriers designed to contain any radioactive material in the highly unlikely event of a reactor accident.

"The safety and security of U.S. nuclear power plants does not rely on any single factor," Ferentz said. "These numerous protection systems are the reason why nuclear power plants, including PPL Susquehanna, are among the most secure industrial facilities in the world."

Giving Back

In January, volunteers at the plant sold Winter Day Bouquets, raising nearly \$300 for American Heart Association research, public and professional education, and community programs.

Plant employees raised \$1,540 through daffodil sales in March to benefit the Columbia County Chapter of the American Cancer Society. The proceeds will be used for research, prevention, detection, advocacy, patient and quality of life services, and information materials.

Four plant employees participated in the annual Bowl for Kids' Sake fund-raiser

and raised more than \$500 to benefit the Big Brothers/Big Sisters Organization of Columbia County, a non-profit organization providing disadvantaged children with a mentoring program.

Blood drives held at the plant since December collected nearly 200 units of blood for the Berwick Red Cross.

Six PPL Susquehanna employees have served on military active duty during the conflicts in Afghanistan and Iraq: George Flick Sr., George Flick Jr., Keith Young, Dirk Hough, John Remphrey and Ron LeVan.



A Leader in Scouting

Late last year, Russ DeVore retired as scoutmaster for Troop 20, a position he had held for 18 years.

More than 50 boys attained the rank of Eagle Scout while DeVore was scoutmaster for the Lightstreet troop.

He remains active in the scouts, continuing to serve as vice president of membership for the Columbia-Montour Council Board.



DeVore, a Bloomsburg resident, is a 22-year Susquehanna plant employee. His current position at the plant is shift technical advisor for the Operations Department.



A message from Herb Woodshick, special assistant to the president for Susquehanna

2002 PPL Susquehanna Community Report

PPL Susquehanna's business is to generate safe and reliable energy for northeastern Pennsylvania. We also understand that as your neighbor, our responsibility doesn't end at the plant fence.

It is through the dedication of our employees that PPL is able to improve the quality of life in the communities inside the 10-mile radius around the Susquehanna plant.

Last year, through corporate and employee donations and employee-led fund-raisers, they raised nearly \$400,000 for local organizations.

PPL Susquehanna employees gave 40,000 thousand volunteer hours to more than 100 local groups. They served as elected officials, board members, ambulance service volunteers, environmental activists, youth sports coaches, scout leaders and blood donors. They helped out at food banks, cleaned up the highways, mentored children and supported local arts programs.

Our nature programs and environmental partnerships work to help preserve our planet for future generations. And our educational programs provide a forum to explore and discuss national topics that affect you, such as energy policy, power reliability and the benefits and challenges of nuclear power.

In 2002, we managed more than 2,700 acres of land for wildlife habitats, nature study and outdoor recreation and educated nearly 170,000 people through workshops, graduate courses, community programs, speaker bureau presentations, newsletters and plant tours offered by the Susquehanna Riverlands Environmental Preserve and the

Susquehanna Energy Information Center.

PPL Susquehanna strives to maintain a balance between addressing the concerns of those who live near our plant and running a business that provides a product vital to the local economy.

The plant employs about 1,100 people, most of whom live within 10 miles of the plant, purchases about \$23 million in local services and materials annually, is the largest taxpayer in Luzerne and Columbia counties, and donates thousands of dollars in corporate contributions.

As a business, our primary focus is on the safe operations of the plant. That being said, we also realize that our duty as your neighbor extends beyond operating a business to include the difference that PPL Susquehanna and its employees can make in the communities around our plant.

Copies of the 2002 Susquehanna Community Report are available at the Susquehanna Energy Information Center.

Everyone in your home should review the emergency information in the blue pages of your telephone book.



Susquehanna Riverlands Environmental Preserve

PPL provides year-round outdoor education and recreation at the Susquehanna Riverlands. Upcoming environmental programs, as well as natural and cultural history presentations, include:

- ***Finding Direction from Nature***, May 18. Learn how to find your way using nature's directional signs.
- ***"Fourth of July" Butterfly Count***, June 21. Help monitor the status of butterfly populations.
- ***"The Susquehanna River" Graduate Course***, June 23-27. Examine the history, culture, economy and ecology of the river.
- ***Water World***, July 12. Discover the creatures that call ponds home.

- ***Hunter/Fur-Taker Education Course***, July 17-19. Game Commission instructors will cover hunting laws, hunter ethics and responsibilities, safety, trapping and wildlife management.
- ***The Wonders of Wetlands***, Aug. 3. Learn who inhabits wetlands and why they are beneficial.
- ***Nuclear Energy Seminar for Teachers***, July 28-Aug. 4. Get objective, correct information about the fundamentals of nuclear power.
- ***Hanging Out with Bats***, Aug. 15. Experience bats first-hand while learning why they are important.

For more information about Susquehanna Riverlands programs or to start receiving PPL's Environmental Currents newsletter, call 1-800-354-8383 or visit our Web site at www.pplweb.com/seic.

Many programs require advance registration and have limited space so call early.

