

Supporting Major Events and Venues

Capabilities of Pacific Northwest National Laboratory

Pacific Northwest National Laboratory offers a multitude of capabilities for working through the many issues that a region and its governments may face in preparing for and hosting a major event. From security to transportation, the scientists at PNNL have the knowledge and experience to address the challenges associated with preparing for major events and venues. In the past, PNNL scientists have assisted in a number of events including several Olympic Games. They have performed vulnerability assessments, developed a tool for modeling the reaction of electric power and natural gas to events that could change or disrupt their delivery systems, organized traveler information to reduce the amount of congestion caused by a large influx of people and, most recently, scientists trained customs officials in Greece to use equipment that detects radioactive material.

TRAVELER INFORMATION SHOWCASE

Staff from PNNL participated in a project for the 1996 Olympic Games in Atlanta, Georgia, that was designed to provide additional support in the area of traveler information during the summer months when congestion would be elevated due to the large influx of people attending the Summer Olympics. The project provided visitors and residents in the Atlanta area with information on traffic incidents, congestion on major highways; construction activities and road closures; bus and rail station locations, schedules and fares; airline schedules and flight information; and information regarding special events, tourist sites, and Yellow Pages information.

The mission of the Traveler Information Showcase was to demonstrate the value of advanced intelligent transportation systems for improving transportation safety and effectiveness through traveler information services. This was the first time that anyone had combined wireless technology with Internet capability to create an up-to-the minute information system for travelers.

The Showcase used wireless handheld computers, in-vehicle navigation units, cable TV, interactive television, and the Internet to inform tourists and residents of traffic incidents, alternate routes, public transportation availability and information regarding the Olympic Games.

The result of the Traveler Information Showcase was an improved transportation information system that proved that the proper distribution of information could greatly reduce issues with traffic congestion, decrease the time needed to clear an accident from the freeway and improve a city's ability to handle large special events.

VULNERABILITY ASSESSMENTS

Scientists at PNNL developed risk data associated with transportation elements for the 2002 Winter Olympics in Salt Lake City, Utah. They performed a review of the city's transportation needs and protection strategies for highway interchanges, public transportation efforts, transportation maintenance, and management facilities. They did the same for the city's electric and utility companies. Through a process of document review, facility tours and management staff interviews the team gathered information pertinent to the process of analyzing potential threat scenarios which could possibly create a disruption of Utah Department of Transportation support during the 2002 Winter Games

The project specifically focused on the Traffic Operations Center which is the management center behind Utah's transportation management program, CommuterLinkSM. The CommuterLinkSM system was the key technology source for keeping traffic and public transit moving smoothly during the Games. Information from approximately 200 closed-circuit TV cameras, congestion detectors, 55 variable message signs, 540 traffic signal controls, ramp meters and 21 weather sensors was processed through the Traffic Operations Center. That information was processed and used to provide real-time solutions to traffic control officers and up-to-the-minute information for travelers through radio, TV, Internet and variable message signs.

Team members also looked at 300 highway overpasses, five regional maintenance centers, numerous traffic choke points and Port of Entry locations. Following the study, they provided Salt Lake City officials with detailed reports of the congestion concerns and suggested mitigation enhancements for possible terrorist attacks on transportation assets to avoid disruptions at Olympic venues.



The Traveler Information Showcase featured a variety of transportation technology devices.

ELECTRIC/NATURAL GAS INTERDEPENDENCIES

Also for the 2002 Winter Games, PNNL developed a prototype tool capable of modeling and displaying interdependency events that affect electric power and natural gas delivery systems. This work proved the feasibility of creating a software-based tool that would automate the analysis and display of disturbances or system stresses that propagate across common paths linking two or more critical infrastructures. The tool uses a graphical user interface to display the analytical results.

Project objectives dictated that the tool would be capable of analyzing and displaying interdependency events involving the electric power and gas delivery infrastructure serving Salt Lake City, Utah, and its immediate vicinity. In addition, the tool has the capability of indicating disturbances anywhere across the Western Energy Coordinating Council region of the national grid.

RADIATION SCREENING

Due to September 11 and the President being up for re-election, security concerns at the 2004 Republican National Convention in New York were at an all-time high. Staff members from PNNL were right there to assist the FBI and other security personnel at the convention.

Four staff members from PNNL assisted law enforcement officers with the Department of Homeland Security's Countermeasures Test Bed, a technology designed to screen vehicles and individuals for radioactive materials. The technology was placed into operations at various points of entry to Manhattan and the Port of Newark.

PNNL staff spent a total of 10 days providing technical expertise and support to local law enforcement. During that time more than 83,000 vehicles and approximately 50,000 individuals were screened by the Countermeasures Test Bed technology. Vehicles and their occupants



A van is screened for radioactive materials as it drives past radiation detection monitors at the HAMMER facility in Richland, Wash.

were screened simultaneously as they passed through entry points and people were screened as they passed through toll gates or subway stations.

The sensitivity of the equipment was such that it detected medical radiation levels that were safe for the individuals even as they were in a moving vehicle. Alarms would prompt officials to do a more thorough screening of the vehicle and/or the individual.

Following the convention, PNNL staff provided the Department of Homeland Security with a full report on the effectiveness and operational impact of the technology. They provided a critical element to the security efforts of the Republican National Convention.

TRAINING

The 2004 Summer Olympics in Athens, Greece, were riddled with warnings of terrorist attacks. Experts feared that terrorists would attempt to ship radioactive material through commercial ports in order to make and use a radiological dispersal device, or "dirty bomb." The challenge brought to scientists at PNNL was deterring terrorism and helping protect roughly 9,000 miles of coastline and 750 miles of land borders.

PNNL is part of the Department of Energy's National Nuclear Security Administration Second Line of Defense Program which provides radiation detection equipment at international seaports, airports, and vehicle and pedestrian border crossings. As part of the Second Line of Defense program, PNNL scientists hosted 25 Greek customs officials at the HAMMER training facility in Richland, Washington, and then traveled to Greece to train another 250 Greek customs officials in the use of both fixed portal, and portable hand-held radiation detectors. Fixed portal



Greek customs officials were trained in border protection at the HAMMER training facility in Richland, Washington.

monitors are used to detect the presence of radioactive materials carried by people, in cargo containers, or in vehicles. The hand-held detectors are used to isolate, locate and identify radioactive materials in accordance with response procedures that PNNL and other DOE scientists helped Greek officials develop in preparation for the Olympic Games.

In addition to protecting Greece's borders during the Olympics, border security officers are able to continue using the radiation detection equipment installed to monitor for the movement of special nuclear and other radioactive materials into or through the country for many years to come.

PNNL IS READY TO ASSIST YOU

The staff at PNNL would like to help your region prepare for the next major event in your area. We have the manpower, experience and expertise to make preparations go swiftly and smoothly and ensure that your region is well-equipped to host a safe and successful event.

ABOUT PNNL

Pacific Northwest National Laboratory is a Department of Energy Office of Science national laboratory where interdisciplinary teams advance science and technology and deliver solutions to America's most intractable problems in energy, national security, and the environment. PNNL employs 4,000 staff, has a \$855 million annual budget, and has been managed by Ohio-based Battelle since the Lab's inception in 1965.

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