

Regional Counterterrorism Activities At Brookhaven National Laboratory

New York City (NYC) has been, and continues to be, a major target of terrorism for many economic, psychological, and technical reasons. As neighbors, Brookhaven Lab and NYC share engineering



- Studied the consequences of detonation of a radiological dispersal device, a so-called “dirty bomb,” and developed guidance for first responders
- An April 2002 workshop on “New York Metropolitan

infrastructure such as mass transit systems, electric power, gas/oil distribution and communication networks, as well as social infrastructure like housing, business, and news networks, and natural resources such as drinking water and weather. As a result, Brookhaven is an important regional counterterror resource.

Region: Counterterrorism and Infrastructure Assurance Technology Needs,” co-sponsored with the Department of Energy’s National Nuclear Security Administration (NNSA), the Environmental Measurement Laboratory (EML), New York City Office of Emergency Management, and the U.S. Merchant Marine Academy

Local Collaborations

Brookhaven and NYC have worked together for many years on issues of common interest, including spent nuclear fuel transport, air and water pollution, and emergency services. The relationships among NYC, the NY metropolitan region, and Brookhaven Lab have continued to grow and strengthen since September 11, 2001. Examples of collaborative efforts include:

- A Brookhaven/EML co-sponsored Urban Atmospheric Observatory workshop for NYC

In addition, the Laboratory is working with both the State of New Jersey Governor’s Office for Counterterrorism and the NY Attorney General’s Office on threats presented by toxic and compressed gases. Also, in cooperation with the NNSA, the Transportation Security Administration, and the Port Authority of New York/ New Jersey, Brookhaven will help test radiation detection equipment planned for installation at facilities in NY and NJ.

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- In 2005, Brookhaven scientists took a lead role in a Homeland Security field study in New York City, gathering data on how tracer gases move through urban canyons. The data will help first responders plan for and respond to potential terrorist attacks and accidents involving harmful airborne contaminants.
- Participation in 2007 Homeland Security pilot program “Securing The Cities,” assisting law enforcement in the tri-state area in deploying radiation detection equipment . Brookhaven Lab reviews the security of licensed radioactive materials at hospitals and other locations.

Local Relationships

Through these efforts, Brookhaven has developed close working relationships with key regional authorities including:

- NYC Office of Emergency Management
- NYS Governor’s Office of Homeland Security
- Port Authority of NY/NJ

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Port security is a primary focus of Brookhaven’s counterterrorism programs.

Brookhaven's Regional Counterterror Activities (continued)

- Metropolitan Transportation Authority
- NYC Police Department
- NJ Governor's Office of Counterterrorism
- NY regional energy companies (National Grid, LIPA, Con Edison)
- Nassau County Office of Emergency Management

Brookhaven also has established partnerships/relationships with major Department of Homeland Security Laboratories, including Lawrence Livermore National Laboratory in California and EML in NYC.

Emergency Response Capabilities

In terms of emergency response capabilities, Brookhaven is also home to a regional DOE Radiological Assistance Program (RAP) team composed of on-site DOE and Laboratory personnel. Upon request from federal, state, and local authorities, the RAP team responds to radiological events in the Northeast. Brookhaven's firefighters are Emergency Medical Technicians trained in hazardous materials response and certified confined space rescuers.

The Laboratory also has approximately 50 additional technicians, supervisors, and health physicists who could be used in emergencies of a radiological nature. Brookhaven's emergency response staff were mobilized and participated in the Sept. 11, 2001, NYC World Trade Center search, rescue, and recovery operations.

Regional Reachback is a DHS program set up to address potential threats by interpreting data from radiation detection equipment deployed by a variety of local agencies. Specialists at Brookhaven and EML provide expert computer analysis over the phone when alarms are triggered anywhere in the northern half of the U.S.

Key Institutional Partnerships

Brookhaven maintains close working relationships with many private sector and academic entities within the NY region and throughout the world. Following the events of September 11, 2001, special emphasis was placed on the area of homeland security. Based on existing and new dialog, proposals with private sector and academic partners have been submitted to NNSA and other agencies. These proposals build on Brookhaven's science and technology capabilities and on the unique resources that our partners possess, including the private-sector defense capabilities that exist on Long Island.

Brookhaven's interaction with the academic community grows from its historic relationship with Stony Brook University, combined with Stony Brook's new role as a managing partner of the Laboratory. Other interactions include port security work with the SUNY Maritime College in such areas as intermodal transport.

Private Sector Partners and Technologies (partial list)

- **Northrop Grumman**
– Development/deployment of sensor platforms, monitoring networks and "battlefield" management software.
- **Radiation Monitoring Devices**
– Development of solid-state radiation detectors
- **Radiant Technologies**
– Advanced systems to image radioactive sources
- **Petersburg Nuclear Physics Institute** – Development of cadmium-zinc-telluride (CZT) based instrumentation to safeguard stored nuclear materials
- **Constellation Technology Corporation** – Xenon-based radiation detectors
- **Fermionics** – Crystal growth of wide bandgap semiconductors for radiation detection
- **ITT Industries** – Portable laser-based system to identify chemical releases and spills

Academic Partners and Technologies (partial list)

- **Stony Brook University**
– Modeling of behavior of weapons of mass destruction components in urban settings, medical intervention, sensors, sensor networks, and advanced scientific computing techniques.
- **Carnegie Mellon University**
– Characterization of CZT radiation detectors.
- **Fisk University** – Growth of semiconductors and scintillators for advanced radiation detectors.
- **Virginia Commonwealth University** – Chemical detectors from imprinted nanocrystalline films.
- **University of Freiburg** – Vapor-phase growth of semiconductor radiation detectors.
- **UCLA** – Measurements of carrier trapping in semiconductor radiation detectors.

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