

# EML

Environmental Measurements Laboratory

"A Federal Resource"

# HOMELAND SECURITY MONITORING PLATFORM

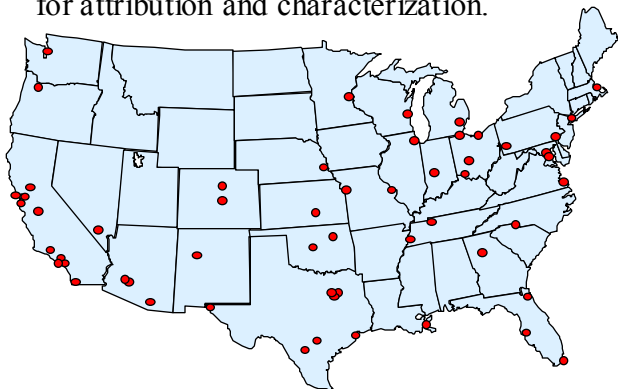
In 2002, the Environmental Measurements Laboratory (EML) installed a homeland security monitoring platform on its roof in New York City, supporting a suite of instruments to provide vital information in the event of a terrorist attack. This set of measurement instrumentation is the first node in an envisioned network of sensors throughout New York City and all over the United States. This network would guide our nation's response to a nuclear or radiological attack by providing real-time information to federal, state, and local officials on the location, movement and level of radioactive contamination. Each platform could also easily accommodate sensors for chemical and biological agents.



## Network Purpose

A Homeland Security Monitoring Network would:

- Inform and support consequence management decision-making and public communications;
- Provide real-time information on radiation levels for exposure estimates;
- Provide emergency responders with the information needed to minimize exposure and determine evacuation areas and routes;
- Provide filter samples from aerosol collection for attribution and characterization.

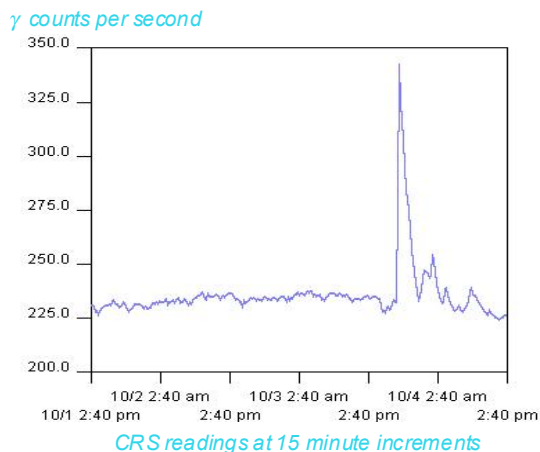


Monitoring platforms would be concentrated in densely populated areas of the U.S.

## Communications

Real-time exposure rates and current radiation levels measured by the instruments on EML's monitoring platform are displayed on EML's website at

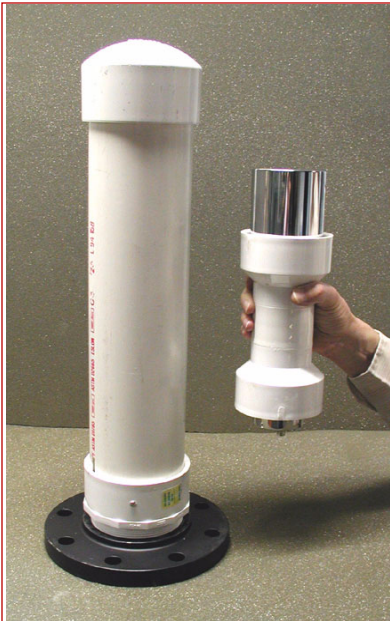
<http://www.eml.doe.gov/homeland>



In an expanded monitoring network, data would be collected from each site and transmitted to data centers via telephone, wireless technology, or satellite. This information, interfaced with meteorological models, would provide key decision makers with a map of safe and unsafe radiological areas.

## Platform Specifics

The sensors reside on an 8' x 10' lightweight, modular aluminum platform. The equipment demonstrated at EML consists of:



### **Comprehensive Radiation Sensor (CRS)**

- a low cost gamma-ray detector that can easily distinguish anthropogenic fission and activation from natural radiation.

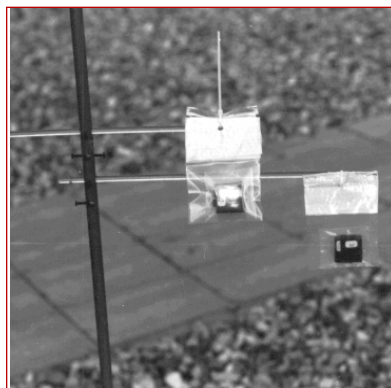
### **Pressurized Ionization Chamber (PIC)**

- a standard for accurate and highly precise low-level measurements of environmental radiation to provide total real-time dose assessments. PICs are in use at nuclear facilities around the world for monitoring and surveys.



### **Surface Air Sampler (SAS)**

- an instrument that uses a high volume pump to collect particulates on filter media. Filters are changed approximately weekly and analyzed for gamma-ray emitting radionuclides using high resolution germanium detectors.



### **Thermoluminescent Dosimeters (TLD)**

- Inexpensive, small passive devices that are well suited for reliable, long-term measurements of environmental radiation.

### **Meteorological System**

- a commercial unit that provides wind speed and direction, pressure and temperature.



**Contact: Colin G. Sanderson**

**Voice: 212-620-3642**

**E-mail: [colin.sanderson@eml.doe.gov](mailto:colin.sanderson@eml.doe.gov)**