

# Homeland Security Insider

## Beyond Duct Tape and Plastic Sheeting

By Col. Timothy D. Ringgold

After returning from a business trip earlier this week, I undertook the all too familiar task of sorting through the mail, newspapers and magazines that had accumulated during my absence. Among the articles were a number of stories from different parts of the country that reported about local officials having ordered evacuations of neighborhoods because of the release of toxic gases. The largest incident, in North Carolina, required 17,000 residents to evacuate their homes -- from a town of 28,000. They were ordered out because of a fire at an industrial site, a hazardous waste business that housed a variety of volatile chemicals, including chlorine. These toxic releases were not related to acts of terrorism but do highlight the inherent danger of living near chemical facilities.

Across the nation, approximately 15,000 facilities produce, use, or store more than threshold amounts of chemicals identified by the Environmental Protection Agency (EPA) as posing the greatest risk to human health and the environment if accidentally released into the air. These facilities include chemical manufacturers, storage and distribution facilities, fertilizer and pesticide facilities, pulp and paper manufacturers, water and wastewater treatment facilities, and refineries, among others. Experts agree that chemical facilities are among the most attractive targets for terrorists' intent on causing massive damage. Despite the risk these facilities pose, no one has yet comprehensively assessed security at the nation's chemical facilities. The Department of Homeland Security (DHS) has identified 3,400 facilities that, if attacked, could pose the greatest hazard to human life and health and has initiated programs to assist both the chemical industry and local communities in protecting these facilities.

Threes ago the Department of Justice warned that al Qaeda operatives may attempt to launch conventional attacks against U.S. chemical facilities to cause contamination, disruption, and terror. While these facilities potentially put large numbers of Americans at risk of injury or death in the event of a chemical release, the chemicals they produce, use, store, and distribute are critical to the world's economy.

Terrorist attacks on U.S. chemical facilities could damage public health and the economy. While the EPA formerly led federal efforts to ensure chemical facility security, DHS is now the lead federal agency coordinating efforts to protect these facilities from terrorist attacks. Because existing laws provide DHS with only limited authority to address security at chemical facilities, it has relied primarily on the industry's voluntary security efforts. However, the extent to which companies are addressing security is unclear.

We all recall the ridicule leveled at then-DHS Secretary Tom Ridge over his duct tape and plastic sheeting recommendation. At the time, this recommendation, coupled with creating a safe room within your home, was about the best most Americans could hope for in the event of a chemical accident or terrorist attack that involved the release of toxic substances into the air. We know that local authorities will instruct you on the best course of action in an emergency. This may be to evacuate the area immediately, to seek

shelter at a designated location, or to take immediate shelter where you are and seal the premises. Likewise, the best way to protect yourself and your family is to take emergency preparedness measures ahead of time and to get medical attention as soon as possible, if needed.

**During my thirty years in the Army and more than seven years in the Pentagon, I was very confident of our armed forces' ability to not only survive a chemical attack, but to continue working during it. But Beyond duct tape and plastic sheeting, there was little on the market to protect homes or non-government workplaces. Recently I was introduced to a company that may have a solution that not only works, but is affordable for protecting what has been till now the unprotectable. That company is Aero Guardian LLC ([www.aeroguardian.com](http://www.aeroguardian.com)) of Ohio. Aero Systems produces an air filtration and room pressurization device which they call the Aero Guardian or Aero for short. The Aero creates enclosed environments in workplaces, commercial building, homes, and public venues which are safe from airborne chemical, biological, radiological and nuclear (CBRN) toxins. The Aero device is placed either through a wall or window to the exterior or a common area of a structure. The Aero processes air contaminated by a wide range of CBRN particulates and gases, purifies the air to exceed US military specifications, then produces a large volume of air flow and pressure in the 300 to 1000 cubic feet per meter range and .25 inches of water column to the living space. This allows the user protection of the living space without extensive structural changes to the room to be protected.**

**To provide effective protection against military grade CBRN agents, the Aero system must perform to a much higher degree than any commercially available filter on the market today. Most commercial filtration systems, which typically utilize free standing indoor air purifiers or filtration units, vary widely in configuration and effectiveness relying on a High Efficiency Particulate Air filter (HEPA) designed for the removal of microbiological aerosols such as bacteria, fungi and viruses and a commercial grade activated carbon filter for the removal of chemical gas or vapor agents. These filter systems are not designed for or capable of protecting against military grade toxic agents. The Aero Guardian contains a set of ASZM TEDA carbon filters that exceed military specification in combination with HEPA and a prefiltration for heavier debris. The device itself has its fan inside of the living space and the filter set outside of the living space and is sized to conform to the actual air volume and pressure for the particular space. The Aero system has a control panel similar to a security system wall mounted pad. The pad has indicators for in operation, on AC or DC battery or generator back up power, as well as an industry standard digital Magnahelic® gauge to measure fan and blower pressures, filter resistance, air velocity, and to continuously display the safe level of pressure in the living space.**

**The Aero Guardian is unlike other products currently being installed in critical government buildings where the entire structure or large area of a building is to be protected. This is especially attractive to facilities managers of corporate or other**

**civilian structures where control rooms or other safe room areas and individuals within the structure itself are assured protection.**

**Where cost is especially important, such as the residential and non-government market, the Aero system costs a fraction of the cost of the larger systems. The Aero system also has the ability to have as an option of imbedded sensors for all types of CBRN agent detection. Once a CBRN agent is detected the unit will activate automatically or activated remotely and tied into early warning wired or wireless systems.**

**As the non-government sector gears up to protect itself from airborne threats, they can rest assured that a complete and affordable system of detection, activation and protection is available to protect them at home or at work in the event of the CBRN type attack.**



Caption: The Aero Guardian fan is inside the protected area and the filtration system remains outside.

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