

## News

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### Sandia will monitor water safety

By Betsy Mason

**LIVERMORE** - The country's water supply is considered vulnerable to terrorist threats, as evidenced by the police cars that seem to show up near reservoirs and water tanks each time the terror alert level goes up.

Now Sandia California/National Laboratory has teamed up with two companies to create an automated monitoring system that could detect biological agents such as toxins, bacteria, viruses and parasites in the water supply.

The system will use the lab's hand-held biological detection system, called microChemLab. The three-pound device is the result of an ambitious initiative kicked off with \$10 million eight years ago, long before the Sept. 11, 2001 attacks.

Last year, the program had a budget of \$9 million with 40 to 50 people involved.

"The goal is to increase the security of our water supply by monitoring currently unmonitored biological threats," Mim John, director of Sandia/California said Monday.

The portable device can detect biotoxins such as ricin and botulinum toxin in a matter of minutes by identifying proteins. Over the next six months, the system will be field tested in the Contra Costa Water District and the partners will focus on how to best deliver water samples to the microChemLab.

John has signed an agreement with Colorado-based water technology company, CH2M Hill, and Tenix, an Australian defense and technology contractor, to design a system to adapt microChemLab to a water safety system that can run a month at a time on its own.

The partnership is Sandia's first major agreement to develop technology for homeland security.

"We are gratified that our earlier investment in research and development in this technology will be paying off for the nation's security," said Larry Adcock of the Department of Energy.

Currently unmanned water monitoring is limited to more traditional problems such as nitrates, ammonia and acidity. A system based on the microChemLab could detect contaminants, whether they were introduced intentionally, accidentally or by nature.

"It's not just a terrorist attack we are worried about," said Sandia chemist Yolanda Fintschenko, manager of the program. "There are day-to-day threats here and around the world from water-borne pathogens."

During the next step, scientists at the lab will work to add bacteria and viruses to the list of potential detection targets, and after that they will tackle parasites.

One provision of the Bioterrorism Act of 2002 calls for water utilities to do a vulnerability assessment. "Unfortunately what that did is tell us we had huge vulnerabilities," said Bruce Macler of the Environmental Protection Agency.

The sheer size of the water supply system makes protection a daunting challenge, said Macler.

California alone has more than 8,000 public water systems. They range from 64 large systems with more than 150,000 service connections down to 2,700 systems with less than 1,000 connections.

The smaller systems could be the most vulnerable because larger systems have more resources to put toward security, said Clifford Bowen of the state Department of Health Services.

"You've got to get coverage everywhere," he said. "The burglar isn't going to hit the one with the burglar alarm. They're going to hit the smaller ones."

The partnership hopes to address this issue by making the system as cheap and user-friendly as possible, so even smaller systems can use it.