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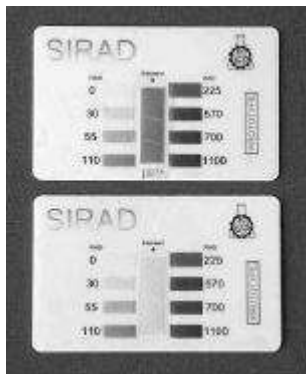
Locals work to outfit military

Firm ready to profit from radiation-detection system

By LINDA A. JOHNSON
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MIDDLESEX -- With looming war in Iraq and fears of further terrorist attacks at home, a low-cost radiation detector invented by JP Laboratories Inc. could generate big demand come this summer.

The tiny research company started developing the thin, ID badge-style detector six years ago under a Navy research grant, but the technology was never used.



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In this comparison, the JP Laboratories badge at the top shows radiation exposure of 110 RAD; the bottom badge shows no exposure.

Now, under a \$105,000 federal contract signed last September, JP Laboratories has produced thousands of its plastic radiation detectors for testing by federal scientists. The contract was among the first dozen the Combating Terrorism Technology Support Office awarded after a nationwide post-Sept. 11, 2001, call for new anti-terrorism technology.

"They wanted a simple device every soldier can put in his pocket," said JP Labs' founder and president, chemist and physicist Gordhan Patel.



[Enlarge](#)

Gordhan Patel, a chemist and physicist and president of JP Laboratories Inc., wears a radiation detector badge at the company's headquarters in Middlesex. The system has both military and civilian applications, including possible use by families.

He is rushing final refinements and says the detectors could be available to everyone from military personnel to civilians starting in a few months.

The device indicates when an area is unsafe and the level of a person's radiation exposure -- a key to helping doctors choose the best treatment.

"It looks very promising," said Jeff David, deputy director of the technology support office, which is evaluating the detectors with input from interested military, law enforcement and civilian emergency agencies. "They like that they're cheap, they like that they're small, they like that they're very easy to read and that they're very quick in their response," indicating exposure instantly.

Until now, the low-profile company in a converted warehouse in Middlesex has lived off research grants and royalties from licensing to others the rights to its inventions. Those include devices for monitoring sterilization procedures and time and temperature indicators that could eventually be in grocery stores to show whether food has been properly stored.

If federal testers give the radiation detectors a thumbs-up, it could transform JP Laboratories from a seven-person company with less than \$1 million in annual revenues into a booming business.

David said some potential users have suggested subtle changes, but testing hasn't shown any flaws. He hopes to wrap up evaluations in a few months.

"We have a lot of user agencies that have said they want this if in fact it works to their satisfaction," David said.

Patel said the devices should sell for about \$5 each for the military and \$5 to \$7 for versions for

civilians and for police and ambulance crews who would respond if terrorists set off a radiation-laced bomb.

While experts say making a nuclear bomb is probably too complex for terrorists, they could easily make a "dirty bomb," an ordinary bomb packed with explosives and radioactive cobalt, cesium or radium, materials widely used in medicine and industry, Patel said.

His detectors, called radiation dosimeters, have a special plastic strip down the center. If exposed to radiation, a chemical reaction changes the strip from clear to blue in under one second.

Darker shades indicate higher exposure levels. A graded color code next to the indicator strip shows the exposure level, and wording next to it tells the user when to leave the area or seek medical help.

"A physician can look at the badge, they can see what the dose is and they will know what symptoms to expect to see and what treatment is appropriate," said Andrew Karam, radiation safety officer at University of Rochester Medical Center.

Karam said JP. Labs' radiation dosimeter seems "as idiot resistant as possible," while many other dosimeters are hard to interpret.

