



Minimizing the Risks of Hazardous Materials: The CBRN Standard

by Philip Bulman

NIJ's new ensemble standard is designed to meet the special needs of law enforcement officers.

The National Institute of Justice has released a new performance standard for the protective ensembles that law enforcement officers wear when they risk exposure to dangerous chemical, biological, radiological or nuclear (CBRN) substances. The CBRN standard is the first of its kind to address the specific needs of law enforcement.

Law enforcement officers can encounter a variety of potentially dangerous scenarios in their day-to-day jobs. They might enter suspected methamphetamine laboratories, which can contain toxic fumes and chemicals, or be called to investigate possible terrorist attacks involving the deliberate release of dangerous substances. Law enforcement officers must have appropriate attire to protect them in these situations.

Standards already exist for CBRN ensembles for firefighters, but they do not address the unique needs of law enforcement. Unlike firefighters, law enforcement officers may need to use stealth when approaching a potential crime scene. They must be able to handle firearms and other equipment. Finally, officers need to be able to put on or take off protective ensembles, which include suits, gloves and foot protection, within a short time frame. The new standard, designed specifically for law enforcement officers, accommodates these needs.

The *CBRN Protective Ensemble Standard for Law Enforcement, NIJ Standard 0116.00*, includes minimum performance requirements for the ensembles. NIJ will also publish conformity requirements for independent, third-party certification

of ensembles and a selection and application guide for agencies that want to buy and use the ensembles.

The standard includes four Law Enforcement Response Levels (LERL) based on expected mission requirements, durability and duration and on the specific CBRN threat.

Level 1 indicates the most risky situations. LERL-1 ensembles could be worn to enter a clandestine drug laboratory or a building containing chemical warfare agents or other toxic chemicals. The mission might require a stealth approach and dynamic entry techniques involving speed and surprise. The initial approach could, for example, be made on the outside platform of an armored personnel carrier, followed by a stealth approach on foot. To protect officers, an ensemble must provide protection against hazards such as a flash fire, jagged metal on pried doors, shards of glass and wood splintering from doors. It must also be flexible enough to allow officers to deal with combative suspects.

An LERL-2 ensemble could be worn in a hostage incident in a location containing chemical warfare agents or other dangerous chemicals. The mission could involve a stealth approach and dynamic entry techniques to rescue hostages. Tasks could include remaining stationary for an extended time, moving quickly during a rescue, communicating with other officers and making arrests. The hazards are similar to LERL-1 but without the threat of a flash fire.

An LERL-3 ensemble could be used in a building containing low levels of chemical warfare agents or industrial chemicals. The ensemble would be appropriate for moving slowly and deliberately through a building to clear it. The pace would allow for

the use of equipment such as mirrors and cameras to locate a suspect while limiting exposure to gunfire. The mission might require officers to be still for extended periods, carry ballistic shields, search for suspects remotely or arrest suspects. Challenges could include combative suspects, moving past barricades or trip wires, and kneeling or crawling on broken glass or other sharp objects.

LERL-4 ensembles could be worn by officers setting up and maintaining a perimeter around an area containing low levels of CBRN hazards. They would allow officers to safely stay in the area for an extended period. Officers could secure the perimeter while directing vehicular or pedestrian traffic, communicating with groups of people, and making arrests as necessary. Hazards could include combative people and kneeling on glass or other sharp objects.

The four types of ensembles provide different degrees of protection from liquid hazards, as well as various degrees of "stealth" with respect to the visibility of an ensemble and the noise it makes.

The new standard was one of the law enforcement community's highest-priority technology needs. It was developed by representatives from federal, state and local law enforcement agencies working closely with scientists and engineers familiar with hazardous materials and protective ensembles. Representatives from the International Association of Chiefs of Police, the National Sheriffs' Association, the Fraternal Order

of Police and the National Tactical Officers Association also participated in its development and review. The standard is the result of several years of developing collaborative partnerships with the Department of Homeland Security; the U.S. Army Natick Soldier Research, Development and Engineering Center; and, most importantly, the National Fire Protection Association, which shared crucial information based on its experience developing similar standards for the fire service.

NIJ standards are voluntary and define what a potential solution must accomplish rather than specifying a particular solution. The goal is to ensure that equipment is safe and reliable and that it performs according to established minimum requirements. Standards articulate practitioners' operational needs and performance levels with regard to particular tools and technology. They relate practitioners' experiences in a way that enables testing in a valid, consistently replicable manner, and they tell manufacturers how the equipment they produce must perform to meet law enforcement's needs. They allow comparisons among products based on standardized testing methods and minimum performance requirements. Finally, standards provide law enforcement agencies with performance information on key equipment characteristics, giving them a level of confidence in a product's fitness for use.

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For more information:

- CBRN Protective Ensemble Standard for Law Enforcement, NIJ Standard 0116.00 <http://ncjrs.gov/pdffiles1/nij/221916.pdf>