



## Protecting Law Enforcement from Today's Hazards

**T**he Office of Justice Programs' National Institute of Justice (NIJ) has developed a new standard specifically for chemical/biological/radiological/nuclear (CBRN) ensembles for law enforcement. The standard is a vital part of ensuring that law enforcement officers responding to criminal incidents involving the potential for CBRN hazards have appropriate protective gear.

### Why a Standard for Law Enforcement?

Traditionally, operations in CBRN environments were believed to be a firefighting and hazmat issue, and the standards for personal protective equipment (PPE) were written primarily for those responders. None of those existing standards fully address law enforcement requirements, including dealing with human threats, stealth operations, durability and dexterity.

Today, law enforcement responders train for response in CBRN environments and they have learned that they cannot always adapt fire department and hazmat PPE for law enforcement purposes.

A program was needed to ensure protection for those law enforcement officers responding to criminal incidents involving the potential for CBRN and weapons of mass destruction type hazards. These hazards may also include dangers posed by clandestine drug labs that manufacture substances such as methamphetamine. Threats posed by clandestine drug labs include physical injury from explosions, fires, chemical burns and toxic fumes.

"The new standard is important because the times have changed," says Debra Stoe, a physical scientist who manages the standards and testing program for NIJ. "Law enforcement officers have the potential to respond to different types of situations more often now than they did before the terrorist attacks of 9/11. They are truly sometimes the first responder on the scene and their needs

and their responsibilities are different than previous users of CBRN ensembles.

"Law enforcement equipment must address whatever situation an officer may encounter. They don't always know what they are walking or running into so their equipment must provide a minimal level of protection that will initially keep them safe from harm," she says.

### Protection Levels

The NIJ CBRN Protective Ensemble Standard for Law Enforcement, NIJ Standard-0116.00, contains minimum performance requirements for protective ensembles and test methods used to verify the performance. It covers the ensemble as well as the ensemble elements such as gloves and foot protection.

The standard defines four Law Enforcement Response Levels (LERLs), which are levels of ensemble protection based on mission requirements, expected mission duration, durability and CBRN threat environments. Level 1 is for the highest level threat; level 4 is for the least threatening. Following are examples of mission scenarios for the four levels.

- **LERL-1.** An LERL-1 ensemble might be worn in an entry into a suspected clandestine drug lab or in a high-risk tactical warrant service entry into a building where chemical warfare agents or toxic industrial chemicals are present, and the level is unknown or known to be at or above immediately dangerous to life and health (IDLH). This type of mission may require a stealth approach to the target and use of dynamic entry techniques employing speed, surprise and domination.

Tasks performed during such an incident may include approaching the target location on the exterior platform of an armored vehicle, stealth approach on foot and apprehending and securing occupants. Hazards could include jagged metal on pried doors, shards of glass during "break and rake" (removal of window

glass) operations, large wood splintering from doors and door jams, combative armed and unarmed suspects, heat stress and flash fire.

- **LERL-2.** An LERL-2 ensemble might be worn in a hostage-taking incident in which the potential exists for a dynamic entry into an environment where chemical warfare agents or toxic industrial chemicals are being used or implied as a weapon, and the level is unknown or known to be IDLH.

This type of mission may require both stealth probe movements to get close to the hostages and dynamic entry techniques if authorities attempt a hostage rescue attempt.

Tasks performed during a hostage rescue mission may include stealth probe clearing of the location in order to locate hostages, remaining in a stationary position at low ready for extended time periods, moving quickly during a hostage rescue attempt, explosive breaching, communicating with occupants and neutralizing hostage takers. Hazards are similar to those previously mentioned with the exception that there is no potential for flash fire.

- **LERL-3.** An LERL-3 ensemble might be worn during a tactical building search where chemical warfare agents or toxic industrial chemicals are present and monitoring has determined the level to be below IDLH or appropriate for the defined limit of the respiratory protection.

This type of mission may require slow and deliberate movements of the team as they systematically clear all areas of a building. Slow and deliberate movements allow the team to search using mirrors, cameras and shields to locate a suspect while limiting exposure to gunfire.

Tasks performed during a slow and deliberate search include remaining in a stationary position at low ready for extended time periods, carrying a ballistic shield as temporary cover, opening doors while maintaining a position of cover, searching remotely using pole mirrors and/or pole cameras and communicating with and securing suspects. Hazards could include moving past barricades or trip wires set by the suspect, combative subjects and kneeling or crawling on sharp objects.

- **LERL-4.** An LERL-4 ensemble might be worn when police are establishing a perimeter around an area where chemical warfare agents or toxic industrial chemicals are present and monitoring has determined the level to be below IDLH or appropriate for the defined limit of the respiratory protection.

This type of mission may require officers to remain on a fixed post for an extended period of time. Officers may potentially need to control contaminated persons from exiting the area or other persons from entering a contaminated area.

Tasks performed during a perimeter security operation include communicating over a radio; directing vehicular and pedestrian traffic; controlling agitated, panicked and/or sick individuals; communicating with groups of people and securing noncompliant individuals. Hazards could include moving traffic, combative individuals, kneeling on sharp objects and heat stress from exertion for extremely long durations.

## Related Documents

In addition to the standard, NIJ will be publishing the *NIJ CBRN Protective Ensemble Certification Program Requirements* and the *NIJ CBRN Protective Ensemble Selection and Application Guide*. The certification document addresses how ensembles will be certified as compliant with the standard. The selection and application guide provides procurement, selection, care, maintenance, training and administrative guidance for law enforcement officers, administrators, managers and purchasing agents.

## Method Used for Standard Development

The *NIJ CBRN Protective Ensemble Standard for Law Enforcement* was the first NIJ standard to be developed using a special technical committee composed of law enforcement practitioners, subject matter experts and scientists. The panel worked together for more than a year to develop the standard and companion documents. (See sidebar, “Streamlining Standards.”)

“What is important is that the standard was defined and guided and managed under the direction of law enforcement practitioners,” says Stoe. “The practitioners articulated their needs and the scientists and research experts identified or developed the appropriate test methods to measure the specific requirements that were identified by the practitioners.”

NIJ worked closely with partners such as the U.S. Departments of Homeland Security and Defense and the National Fire Protection Association to leverage related efforts where possible to expedite release of the standard. The standard, like all NIJ standards, is voluntary.

**To view a copy of the standard, certification document or selection and application guide, visit [www.ojp.usdoj.gov/nij](http://www.ojp.usdoj.gov/nij), or [www.justnet.org/ctp](http://www.justnet.org/ctp).**

## STREAMLINING STANDARDS

The National Institute of Justice (NIJ) has adopted a revised method to streamline development of standards.

When NIJ wanted to develop a standard for chemical/ biological/radiological/nuclear (CBRN) protective ensembles for law enforcement, the agency set up a special technical committee (STC) in August 2007 composed of practitioners from the field and subject matter experts. The panel met monthly and within a year produced a draft standard that went out for public comment. Previously, development of a standard could take three or more years.

The CBRN ensemble standard was the first developed using the STC method. NIJ was pleased with the relatively speedy development of the standard and is applying the method to develop or update standards for gun-retention holsters and restraints.

"It's just been great," says Casandra Robinson, a visiting scientist with NIJ who has been involved in development of the CBRN standard and others that are underway. "That's why we are repeating the process with other standards.

"We wanted to put out a good standard in a compressed timeframe of one year. Debra Stoe of NIJ came up with the STC process as a means to develop a comprehensive standard in as short a time as possible with all the points of view represented. The practitioners drive the requirements."

Law enforcement practitioners on the panel came from organizations such as the International Association of Chiefs of Police, the Fraternal Order of Police, the National Tactical Officers Association, the National Sheriffs' Association, the Federal Law Enforcement Training Center and the FBI. Also included were representatives from the National Fire Protection Association, the National Institute for Occupational Safety and Health/ National Personal Protective Technology Laboratory, the U.S. Department of Defense and the Drug Enforcement Administration.

NIJ technical partners like the National Institute of Standards and Technology and the U.S Army Natick Soldier Research, Development and Engineering Center were also involved in the standards development process.

What is unique about the STC process is that it brings practitioners and technical experts together to collaboratively develop the standard.

"It is a standard for police by police, which is an accomplishment by NIJ," says Edward Bailor, a retired U.S. Capitol Police inspector who serves as chair of the CBRN Ensemble Standard STC. "We developed it to satisfy the safety and scientific requirements to make the law enforcement professionals safe. NIJ selected a really good team. Others can follow what we have done to make the development of standards easier."

**For information about the STC standards development process, contact Casandra Robinson of NIJ at (202) 305-2596 or [casandra.robinson@usdoj.gov](mailto:casandra.robinson@usdoj.gov).**

**The National Law Enforcement and  
Corrections Technology Center System  
Your Technology Partner**  
[www.justnet.org](http://www.justnet.org)  
800-248-2742



This article was reprinted from the Summer 2009 edition of *TechBeat*, the award-winning quarterly newsmagazine of the National Law Enforcement and Corrections Technology Center System, a program of the National Institute of Justice under Cooperative Agreement #2005-MU-CX-K077, awarded by the U.S. Department of Justice.

Analyses of test results do not represent product approval or endorsement by the National Institute of Justice, U.S. Department of Justice; the National Institute of Standards and Technology, U.S. Department of Commerce; or Lockheed Martin. Points of view or opinions contained within this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance; the Bureau of Justice Statistics; the Community Capacity Development Office; the Office for Victims of Crime; the Office of Juvenile Justice and Delinquency Prevention; and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking (SMART).