



## U.S. ARMY CHEMICAL MATERIALS AGENCY

### CDC revises airborne exposure limits for chemical agents

#### Safe Then and Safe Now

Even though airborne exposure limits have been revised, this does not mean that operators working in the chemical demilitarization program in the past faced a greater risk or danger. The CDC noted in the January 8, 2002, Federal Register that "There is no indication that the current exposure limits, as implemented by the U.S. Army Program Manager for Chemical Demilitarization [now the Chemical Materials Agency], have been less than fully protective of human health."

Recently, the Centers for Disease Control and Prevention (CDC) and the Army revised the limits at which nerve agents VX and GB, and blister agent HD are monitored in air at very low concentrations. These concentrations are known as airborne exposure limits (AELs). These changes were made to bring the Army closer to the way other federal agencies, such as the Occupational Safety and Health Administration, set AELs and monitor air in the workplace.

During its evaluation of agent AELs, the CDC concluded that workers at chemical weapons storage and disposal facilities and the public have been fully protected under the existing AELs. The safety of its workers and surrounding communities continues to be the Army's highest priority as it stores and disposes of chemical weapons.

The U.S. Army Chemical Materials Agency (CMA) uses advanced monitoring systems at its chemical weapons storage and disposal facilities to ensure that air is safe for workers and the public. Although the new AELs will require some procedural changes in the workplace, they do not indicate any unsafe exposure to workers in the past, and will not affect worker risks in the future.

#### Impacts of the revised AELs

The revised AELs will change the way the Army and its contractors do things at their facilities. How the Army will monitor for agent is the most obvious change, but there will be other changes, such as the level of personal protection workers may use for various operations, or how long a worker may operate in a particular facility area. Other less visible changes may include new procedures for medical monitoring and laboratory analyses. As these changes are implemented, the Army and its contractors will inform and train the workforce.

#### About AELs

Airborne exposure limits protect workers and the public by providing conservative guidelines regarding how much and how long people may be exposed to a pollutant in the air without affecting their health. The CDC and other agencies set AELs, such as for ozone, lead, and vinyl chloride, by evaluating all available scientific information and using risk models that build in extra safety margins. The goal is to create air standards that protect workers and the public over a normal life span.

The revised AELs for the Army's chemical agents include the categories listed below.

- **General population limit (GPL).** This is the level at which the unprotected general public can be exposed for 24 hours a day, seven days a week for a long period of time without experiencing any adverse health effects.
- **Worker population limit (WPL).** This is the level at which an unprotected worker can operate safely eight hours a day, five days a week for a working lifetime without adverse health effects. [CMA's time weighted average (TWA) is the current WPL.]
- **Short-term exposure limit (STEL).** The STEL defines a level at which an unprotected worker may operate safely for one or more 15-minute periods (depending on the agent) during an eight-hour workday. The STEL is higher than the WPL, and is part of the revised AELs only.
- **Immediately dangerous to life or health (IDLH).** The IDLH is the level at which an unprotected worker could escape within 30 minutes without becoming impaired or experiencing irreversible health effects.

For more information, contact the CMA Public Affairs Office at (410) 436-3629 (800) 488-0648



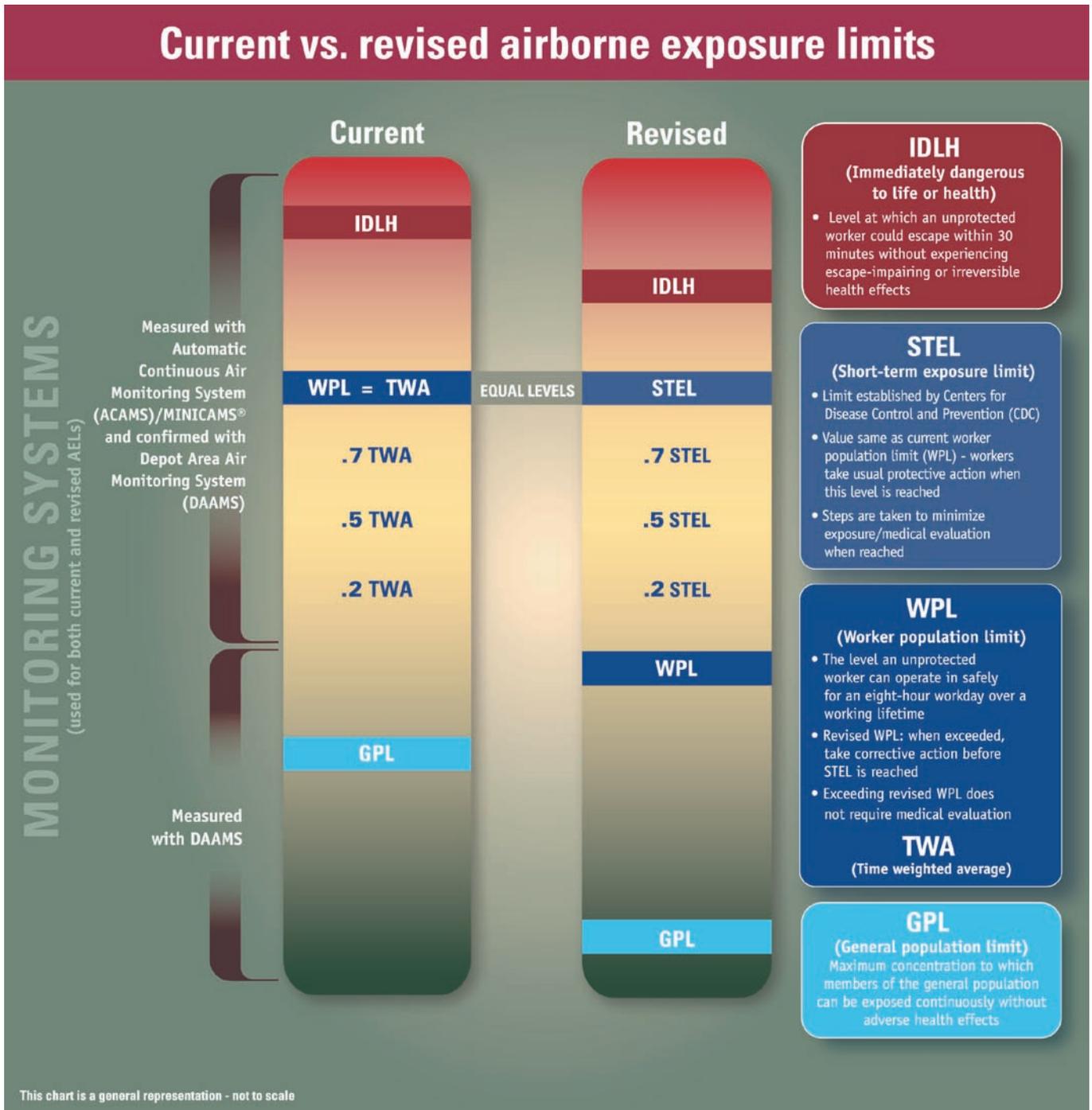
## CDC revises airborne exposure limits (continued)

### CDC uses newest risk assessment methods to revise AELs

As the chart below shows, the revised AELs are lower than the current levels. The CDC used the U.S. Environmental Protection Agency's (EPA)

newest risk assessment method, along with a review of the available scientific information, to re-evaluate chemical agent AELs. The CDC emphasized that it is the new EPA method, and not any changes in agent toxicity, that led to the lower AELs.

## Current vs. revised airborne exposure limits



## CDC revises airborne exposure limits (continued)

### A new way of thinking: applying AELs in conformity with generally accepted practice

The important thing to remember is that monitoring, alarming, and protective procedures will remain the same at your facility because the new level at which alarms sound and protective measures are taken (STEL) is the same level as the current WPL (or TWA). The Army applies the current WPL as an alarm level. If air monitors detect agent above the current WPL, an alarm sounds and workers take appropriate protective action. As typically applied by regulating agencies, however, occasional fluctuations just above the WPL are safe and permitted as long as the pollutant level is below the WPL when averaged over the workday. Accordingly, the CDC does not require or recommend that the revised WPL be implemented as an alarm level. Instead, the Army will use its air monitoring systems to track the WPL as a workday average. If the WPL is exceeded over the eight-hour average, facilities will investigate the source of problem and take **corrective action**.

Near real time monitoring systems will still be used to detect agent for the purpose of immediate **protective action**. The CDC has identified the new STEL as the action level. The STEL is set at the same level as the current WPL (or TWA).

### Implementation of the revised AELs

CMA must implement the revised AELs for nerve agent by January 1, 2005. Revised AELs for mustard agent take effect by July 1, 2005. The Army is working with the CDC and state regulators to implement the revised AELs safely and on schedule. Implementation of the AELs may differ at each facility, based on facility needs and state regulations and policies.

### For more information

To find out more about how AELs are implemented at your facility, talk to your supervisor or your designated AEL contact person (see box).

*The revised AELs reflect a change in risk assessment methodology. There is no change in agent toxicity. The CDC's Federal Register guidance notes, "the recommended changes to the AELs do not reflect a change in, nor a refined understanding of, demonstrated human toxicity of these substances but rather the changes resulted from updated and minimally modified risk assessment assumptions."*

*(Federal Register, Oct. 9, 2003)*

### Local AEL contact information