

HAMMER respiratory training program a success

Karin Nickola, FH

Imagine for a moment that you are breathing normally and have just exhaled. But when you attempt to inhale, there is no air. For very good reason, this startling condition is cause for alarm.

Atmospheric air contains 21 percent oxygen. People typically exhale air at about 17 to 18 percent oxygen. With no source of fresh breathing air, the oxygen content in the lungs drops quickly. Although everyone reacts slightly differently, a person's thought processes begin to blur at approximately 16 percent oxygen and are seriously impaired at roughly 12 percent oxygen. Death occurs at about 6 percent oxygen.



The new Al Alm Annex at the Volpentest HAMMER Training and Education Center is the respiratory training building.

For individuals performing work while wearing respiratory gear, the possibility of supplied air loss is a reality that must be addressed. Even though considerable effort is made to ensure equipment is up-to-date and in good working condition each time it is used, in the final analysis, the apparatus is man-made and can fail. The need for thorough respiratory training programs cannot be overstated.

At the Volpentest HAMMER Training and Education Center, workers practice daily how to cope with situations like unexpected loss of supplied air. Just as first aid courses prepare each of us for unforeseen emergencies, HAMMER instructors teach workers to respond to unanticipated respiratory situations swiftly and confidently. Practicing hands-on techniques during training sessions means circumstances encountered in the field won't be first-time experiences.

High-quality training

In the early days of HAMMER, respiratory training was offered through the hazardous waste curriculum. In March 1998, recognizing the need for a more intensive program specifically targeting respiratory safety, the training center began conducting "stand-alone" respiratory training courses. Since then, HAMMER has provided more than 10,928 student days of respiratory training (through October 2001). The facility has also staged several realistic hands-on respiratory mock-ups for Hanford Site workers, including two in fiscal year 2001.

HAMMER's respiratory "worker trainer" instructors number 41. Among them are competent lead instructors Randy Coleman, Ken Howard, Tom Peterson, Ed Carter, Ken Artz, Pat Goble, Jose Salazar and Mark Whitten. In addition to instructing respiratory courses sponsored by the Hanford Atomic Metal Trades Council (HAMTC), HAMMER worker trainers perform a wide variety of skilled craft work throughout the Hanford Site.

Hands-on performance-based training makes up the vast majority of the

Mask-fit technician Donna Gross of Coastal Safety and Health Services helps Hanford teamster Ken Artz get fitted for a protective mask.

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respiratory training at HAMMER. Both initial and refresher courses in basic and advanced respiratory training are offered daily in Al Alm Annex classrooms 3 and 4, as well as at various props throughout the campus — including the self-contained breathing apparatus (SCBA) building, six-story training tower, above-ground pipe-line prop and port of entry building.

Participants in supplied air-line training receive job tasks that must be completed while wearing supplied air-line systems. At some time during each person's exercise, primary air is cut off. Participants must respond to loss of air by turning on their back-up supplies.

Yearly focus

Besides the basic hands-on respiratory curriculum (which includes inspections, donning, utilization and doffing of respiratory gear, and critical-step oral questioning), each year HAMMER instructors focus on new and different training issues. During 2001, instructors helped students discover "how much" air they had in their five-minute emergency air supply (SKA-PAK) bottles. Because every person uses air differently, the typical range is from 4 to 12 minutes; but the best way to know for sure is by experiencing it first-hand.

"Instructor-generated loss of supplied air forces students to activate the SKA-PAKs worn on their hips," said HAMMER staff member Bill Robinson. "To demonstrate the amount of air in the SKA-PAKs, students are often asked to walk with instructors to our six-story training tower more than 100 yards away. Invariably, the students believe they won't have enough air to make it to the tower, but they always do."

"As SKA-PAK air is used up, valuable lessons are learned," continued Robinson. "In particular, panic that can arise if supplied air lines fail and workers must depend on emergency air systems is eased. I believe this comfort level is imperative for men and women working under high-risk conditions. It enables them to make good safety and health decisions. On four occasions within the last few years, when workers in the field lost primary supplied air, they responded appropriately by turning on their emergency air supply, exiting their workplace environment calmly and safely, as practiced, without contamination or intake."

Next year, HAMMER respiratory training will be focused on ensuring that respiratory equipment is kept in good working order. Training will stress the importance of preventive practices — conducting inspections to check equipment to ensure it is current and conducting self-inspections prior to equipment use, for example. Among other things, simple pre-use examinations can eliminate potential problems by detecting malfunctioning pressure gauges and alarms or revealing face pieces that don't quite seal properly. ♦