Breathing Air Supplies

Objectives
• To develop, demonstrate, and assist manufacturers to make commercially available CCER devices for mining that are person wearable, simple to use, allow for seamless changeover between devices and allow verbal communication.
• To develop prototype cryogenics systems for life support in irrespirable atmospheres.

Stakeholders
MSHA, PMRD, UMWA, NMA, Breathing apparatus manufacturers

Project Scope
Develop two closed-circuit mining escape respirator (CCMER) prototype devices and one open-circuit prototype apparatus: 1) wearable soft-shell, backpack style device (CCMER-B), 2) hard-shell cacheable device (CCMER-C), and 3) an open-circuit self-contained breathing apparatus (SCBA-M). Devices 2) and 3) will be dockable to the initially donned CCMER-B for continued escape. Develop Liquid Cooling garment cryogenic breathing apparatus prototype for use in fire fighting and other first responder applications where reducing heat stress is needed

Milestones FY17
• Prototypes (alpha) of non-deployable dockable backpack style Closed-Circuit Mine Escape Respirator.
• Prototype (alpha) of LCG Cryogenic Breathing Apparatus

Key Partners
• Navy (NSWC and NEDU)
• NASA
• Specialized contractors

Timeline
• Two years - CCMER prototypes
• One Year – LCGCryoBA prototype

Applicable Standards
42CFR84- Subparts H and O; 30CFR75

Outputs
• Prototypes close to production quality
• Usability studies in laboratories and real mines to get feedback on designs
• Final reports and Technical data packages

Expected Outcomes
• Hardware and information to assist commercial manufacture
• Publications on BAS Technology
• Input to formulating regulatory standards