

**National Personal Protective  
Technology Laboratory**

**Introduction**  
**Standards Development Efforts for  
CBRN CC-SCBA**

**Station Square, Pittsburgh, PA**  
**John G. Kovac, Physical Scientist**

**December 15, 2004**

# CBRN CC-SCBA Standard

- **Goal**
  - Develop a NIOSH/NPPTL full-facepiece, closed circuit, self-contained breathing apparatus (CC-SCBA) standard that addresses CBRN materials identified as inhalation hazards or possible terrorist hazards for emergency responders
- **Use**
  - For long-duration missions, involving entry into an atmosphere where contaminant concentrations are IDLH, and which may not contain adequate O<sub>2</sub> Levels

# CC-SCBA



**CDC** Workplace  
Safety and Health

**NIOSH**

**NPPTL** Research to Practice  
through Partnerships

One of 15 public meeting topics

# Effective CBRN Standards Development

## Public Process

- Transparent
- Identify Key Stakeholders
- Form Partnerships



## Best practice

- Good science
- Benchmarking
- Research
- Peer review

## Focus on Performance

- Hazards Analysis
- Human Capabilities
- Quality Assurance
- Reliability
- Practical Use

# Model for CBRN Standards Development

- Three tiers
- NIOSH approval under this program will signify that a respirator is expected to provide needed protection to first responders in situations where an act of terror has released harmful chemicals, pathogens, or radioactive materials into the air.
- Approvals will be based on positive results from rigorous tests on sample units submitted to NIOSH by manufacturers, and from stringent evaluation of manufacturers' quality-control practices, technical specifications, and other documentation.

# CBRN CC-SCBA Concept Standard

- **Tier 3: Special CBRN Requirements**
  - CWA penetration and permeation resistance
  - Practical performance
- **Tier 2: NFPA 1981/1984 – CC-SCBA Extension**
  - High work rate performance
  - Operational performance
    - Environmental temperature
    - Heat and flame
- **Tier 1: 42 CFR, Part 84**
  - Applicable sections



# CBRN CC-SCBA Requirements

- Concept calls for adapting the:
  - NFPA 1981/1984 Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services to CBRN CC-SCBA
- Use of an automated breathing and metabolic simulator (ABMS) for performance testing



# Quality Partnerships Enhance Worker Safety & Health

## Thank you !



**CDC** Workplace  
Safety and Health

**OIOSH**

**NPPTL** Research to Practice  
through Partnerships

Open. For public meeting format.