National Personal Protective Technology Laboratory

Standards Development Efforts for CBRN CC-SCBA

Sheraton Station Square; Pittsburgh, PA

John G. Kovac, Physical Scientist

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CC-SCBA

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CC-SCBA

- **NIOSH Limitation of Use**
  - Cannot be used when there is direct exposure to open flame or high radiant heat
- **NFPA 1981**
  - Positive pressure at high work rates
- **CBRN**
  - Not hardened

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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_2 Levels.

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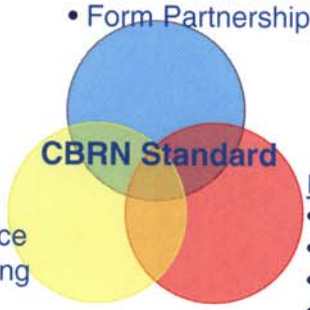
Effective CBRN Standards Development

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

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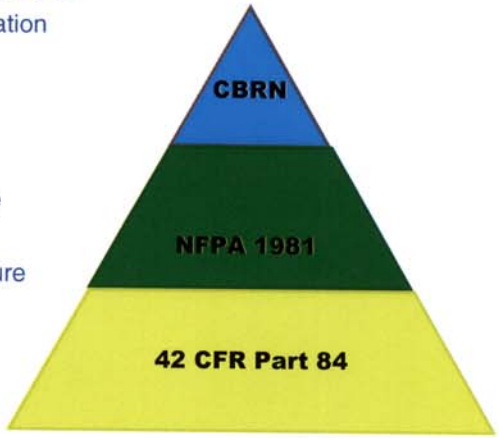
CBRN CC-SCBA Concept Standard

- Tier 3: Special CBRN Requirements
  - CWA penetration and permeation resistance
  - Practical performance
- Tier 2: NFPA 1981
  - High Work Rate Performance
  - Operational Performance
    - Environmental Temperature
    - Heat and Flame
- **Tier 1: 42 CFR, Part 84**
  - Establish duration
  - Limitation on use



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CBRN CC-SCBA Requirements

- **Concept calls for adapting the:**

  NFPA 1981 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**

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Special Requirements

- **Firefighter Protection Requirements**
  - Fabric Flame Resistance
  - Fabric Heat Resistance
  - Thread Heat Resistance
  - Heat and Flame Resistance Performance

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Special Requirements

- **Requirements for CBRN Use**
  - Operational Performance
  - Environmental Operational Performance
  - Vibration Endurance
  - Accelerated Corrosion
  - Particulate Resistance
  - Facepiece Lens Haze, Luminous Transmittance and Abrasion Resistance
  - Communication Performance
  - Chemical Agent Permeation and Penetration Resistance
  - Laboratory Respiratory Protection Level **(LRPL)**

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