

CBRN PAPR Standard Development

Mr. Jonathan Szalajda, NIOSH

CBRN PAPR Standard Development

- Existing NIOSH or Military Standards are not completely applicable to meet a terrorism agent threat
- Inherent Differences between NIOSH & Military Standards
 - Purpose
 - Target User Groups
 - Hazards
 - Operation
 - Protection

CBRN PAPR Standard Development

Goal:

Develop a NIOSH/NPPTL powered air purifying respirator standard that addresses CBRN materials identified as inhalation hazards and/or possible terrorist hazards for emergency responders.

CBRN PAPR Standard Development

- A. Warm Use: Concentrations above acceptable exposure limits, but less than IDLH concentrations; sustained support operations; long term use for decon, traffic control, rehabilitation, rescue and recovery; hazard known, quantified & controlled.
- B. Crisis Provision: Egress and escape from above IDLH concentrations, high physiological (flow) demand possible. Contingency for unforeseen factors such as secondary device or pockets of entrapped hazard.

CBRN PAPR Standard Development

- A. Hazard Analysis
- B. Protection
- C. Human Factors / Environmental Factors
- D. Standards Concept Definition
- E. Test Requirements
- F. Testing / Validation
- G. Quality Assurance Requirements
- H. Public Process

CBRN PAPR Standard Development

- Conceptual Requirements:
 - Tight fitting, full facepiece PAPR (includes neck dam PAPR)
 - Use canister requirements defined in the CBRN APR statement of standard
 - minimum number of mechanical connectors (2)
 - minimum flow rate of 115 Lpm

CBRN PAPR Standard Development

- Provision for Interchangeable Use of Consumable Canisters
- Uses requirements established for the CBRN APR Canister
 - *Mechanical Connector and Filter Design
 - *Mechanical Connector Gasket
 - *Dimensions and Weight
 - *Same canister testing as CBRN APR

CBRN PAPR Standard Development

- Hazard List Derived During earlier CBRN standards development work
- Category Grouping Addresses 139 Respiratory Hazards
- Eleven (11) test representatives identified for certification testing

CBRN PAPR Standard Development

- 42 CFR, Part 84 – Applicable Sections
- Requirements Derived from other Standards/Specifications
- Special CBRN PAPR Requirements

CBRN PAPR Standard Development

Component Requirements:

- Tight Fitting Full Facepiece
- Harness Requirements
- Container Requirements
- Labeling



Workplace
Safety and Health



CBRN PAPR Standard Development

Construction Requirements

- Battery Requirements
- Flow Indicators
- Operational Controls
- Noise Levels
- Airflow (minimum of 115 Lpm, two mechanical connectors)



Workplace
Safety and Health



CBRN PAPR Standard Development

- Special CBRN Requirements
 - Gas Life Testing
 - CWA Penetration/Permeation
 - LRPL

CBRN PAPER Standard Development

- Being Conducted in Public Forum
- Meetings With
 - Stakeholders
 - Manufacturers
- Use of Website for Concept Papers
 - <http://www.cdc.gov/niosh/npptl>

CBRN PAPR Standard Development

Development Schedule:

- | | |
|------------------------|-----------------------|
| 1. Next Public Meeting | January 27, 2004 |
| 2. Peer Reviews | March 5, 2004 |
| 3. Standard | March 30, 2004 |

CBRN PAPR Standard Development

- **Vulnerability Assessment Factors Involve:**
 - Toxicology
 - Delivery Methods
 - Challenge Concentration
 - Protectability
- **Terrorist's Intent Not Prescribed**
- **Toxicities of TIC and CWA Span Orders of Magnitude in Values**
- **Challenge Levels are Venue Specific**
- **Test Standards Dependent on Respirator Uses**