Smart Presentation Technologies for Industrial Safety Training

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Midwest Consortium

- Midwest Consortium for Hazardous Waste Worker Training funded in part by the National Institute of Environmental Health Sciences
- Partners in IL, IN, KY, MI, MN, ND, TN, and WI
- Develop, present and evaluate model worker training programs to help employers comply with 29 CFR 1910.120
Hazardous Materials Training Program

• School of Labor and Employment Relations
  – Labor Education Program 1947
• Hazardous Materials Program
  – 25 years... 25,000 students
Safety for Government and Industry

• HAZWOPER
• 40 Hour General Site Worker, 40 Hour Technician
  – Awareness, Refreshers
• Confined Space
  – Industrial Confined Space Entry and Rescue, Technical Rescue
• OSHA 10 hour and 30 Hour
  – General Industry and Construction
• Lead Renovation/ Lead Safe Weatherization, Mold, Asbestos
• General Safety Topics
  – Safety and Corporate Emergency Response Consulting
The importance of modeling and simulations

- “useful training tool but should not entirely replace hands-on exercises”
- “no one can provide reasonable projections on the number of people...from a given incident”
- “It is nearly impossible to do large audience live exercises, so simulations are an effective tool...”
Why technology?

• Interactive technologies make learning more accessible to the average user
• Using smart technology can improve student knowledge retention
• Appropriate classroom technology combined with current and applicable curriculum can lead to increases in attendance and class participation.
What can be done with Smart Presentation Technology

• Real time capture and manipulation of data
• Team Collaboration over Distances
• Decision Support Systems for Command and Control
• Training
• Live incident data recording
• Critique/After Action Recording
Typical Incident Command Structure

Exercise

- Police
- Fire
- EMS
- Public Works
- Company Staff
Innovative Exercises

• Incident Command
  – Hazardous Materials

• Confined Space Emergency
Case Studies

- Case Study #1 – Incident Command Training
- Case Study #2 – Confined Space Emergency
Case study #1

• Rail Car Transfer Area
• Transfer of Hydrochloric Acid (34%)
• Piped to a dilution area

• 0900 – Rail car 70% full punctured by fork lift
  – 50 GPM leak 1 foot below liquid line

• Discuss incident response using ebeam
Case Study #2

• CSB Videos
  – Nitrogen Asphyxiation
  – Workers entered to get a roll of duct tape
    • What were the management issues involved?
    • What were the administrative policy problems
    • What positive and negative “corporate culture” led to this incident?
eBeam Portability

• eBeam engage
• Quartet IdeaShare
• Mimio by Virtual ink