

Emergency Preparedness & Response

Requirement vs. Business Practice

- Requirement
 - UFC Article 51
 - Requires ERT, training, quarterly drills
 - OSHA HazWoper
- Business Practice
 - Minimize Business Interruption
 - FD Response = 4-8+ hours
 - Internal response = 1-4 hours
 - \$1-2M/hour → \$1M-\$14M!!!

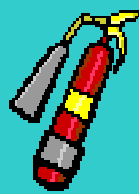


Types of Emergencies



Unintentional Technological

- Chemical Release
- Fire
- Utility Outage



Intentional Technological

- Civil Disturbance
- Workplace Violence
- Terrorism
 - Conventional
 - Unconventional
 - Cyber-terrorism

Natural Emergency

- Medical
- Flood
- Earthquake
- Hurricane
- Tornado
- Volcano



Special Considerations

- Toxic gases
 - Site issues
 - Off-Site
- Pyrophoric materials
- Fire Department coordination



SERF

- Semiconductor Emergency Response Forum – SEMATECH
- Benchmarking between companies
- Hours of Emergency Response Training
 - 59 hours on average for initial training

Types of Teams and Training Methods

■ Types

- General ERT
- Haz Mat Only
- Medical Only
- Fire Brigade

■ Methods

- Classroom
- Field /
Exercise
- In-house
- Contractor

Participants

- Volunteer: 86%
- Required: 14%
- Incentives
 - Usually some stipend... up to an additional \$1500/yr
 - Non-monetary incentives
 - Jackets, BBQs, parking spaces
- Number of members
 - Total: 18-860; average: 105 (76 if exclude the 860)
 - Avg./shift: 5-170; overall average = 24 (19 if you exclude the 170)



Training Programs

- Haz Mat Awareness Level
 - What's a release and whom to call
- Haz Mat Operations Level
 - Scene control, safe containment
- Haz Mat Technician
 - Containment, control, decon
- Incident Commander
 - Scene management
- Haz Mat Specialist
 - Technical support...IH/Safety, Envir., etc.
- Medical training

Training Topics

- Haz Mat/Spill Control (20)
- FA/CPR/Basic Medical (10)
- Confined Space (7)
- Fire (5)
- Toxic Gas Systems (4)
- Incident Command (4)
- Respiratory Protection / SCBA (3)
- Rescue (2)
- BBP (1.5)
- Evacuation (1.5)
- LOTO (1)

Equipment Issues

- Personal protective equipment
 - Level A vs. Level B/C protection
 - Fire protective clothing...rarely in use
- Facility monitoring systems
 - Toxic gas monitoring systems
 - Flammable gas monitoring
 - Oxygen monitoring for Confined Spaces
 - Seismic detection switches
- Portable monitoring systems
 - Hand held multimeters
 - Colorimetric tubes
 - pH paper

Interaction with Fire Departments

- Tours
- Joint training
- Joint drills
- Pre-planning

Priorities

- Life Safety
 - Personal Safety
 - Co-workers
- Environmental Protection
- Capital Preservation
 - Facility
 - Equipment
- Minimization of Business Interruption