Confined Space Rescue for the Safety Professional

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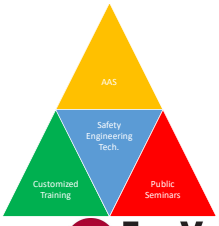
About Me:

About the Safety Engineering Technology Department:

- Associates of Applied Science in Safety Engineering Technology
- Customized Contract Training
- Safety Seminars



Interesting Confined Space Statistics

- 166 Confined Space Fatalities in 2017
- 95% of dead were authorized by supervisors
- 85% of all fatalities had a supervisor present at the time of the entry
- 29% of dead were supervisors

Interesting Confined Space Statistics

- 166 Confined Space Fatalities in 2017
- 31% of spaces had written confined space entry procedures
- 0% of fatalities used written confined space entry procedures

Interesting Confined Space Statistics

- 166 Confined Space Fatalities in 2017
- 15% of killed employees had Confined Space training

Interesting Confined Space Statistics

- 166 Confined Space Fatalities in 2017
- 0% of spaces had atmosphere tested prior to entry
- 0% of spaces were ventilated prior to entry

Interesting Confined Space Statistics

- 166 Confined Space Fatalities in 2017
- 0% of instances had a rescue plan prior to entry
- 60% of dead were attempted rescuers

Why is Confined Space Rescue Important?

- An issue has already occurred
- Hazard control mechanisms may have already failed
- Potential for additional victims (i.e. would be Rescuers)

Confined Space Hazards

- Atmosphere
- Moving Parts
- Environmental Hazards
- Flowing Material
- Liquids
- Excessive Temperatures

OSHA Rescue Requirements

- Permit Required Confined Spaces
- Non-Permit Required Confined Spaces

Time Requirements for Rescue

- OSHA 1910.146(k)(1)(iii)(A)
  - "Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified."
- NFPA 350
  - "…Setup and entry within 12-15 minutes of incident occurrence."

ISHN Magazine, July 7, 2017

Confined Space Rescue Hierarchy

- Self-Rescue
- Non-entry Rescue
- "Assisted" Entry Rescue
- Entry Rescue

Defining Need for Entry Team

- Configuration of space
- Self Rescue/Non-entry is ALWAYS the preferred option

Entry Team Requirements

- Personal Protective Equipment (PPE)
- Equipment
- Training

Entry Team Requirements—PPE

- Respiratory Protection
  - An IDLH atmosphere is assumed in nearly all rescues
  - SCBA vs. SAR
  - Respiratory Protection Plan
  - Medical Evaluation
- Chemical Exposure
  - Based on Hazard Assessment
- Head Injuries
- Hand Injuries

Entry Team Requirements—Equipment

- How are you going to enter the space?
  - Vertical
  - Horizontal
- Use Commercial Equipment
  - No Knots!
- Lighting
- Hazardous/Flammable Atmosphere

Entry Team Requirements—Equipment

- How are you going to get out the space?
- How are you going to extricate an injured worker?

Entry Team Requirements—Training

- Training covered under 1910.146(k)(1)
- Entry teams must be trained to perform tasks
- No set "time" requirement—Performance Based
- At least one member must be trained in CPR/First Aid

Rescue Considerations

- Configuration of Space will make many decisions for you
- Elevated Access
  - What goes up must come down

Rescue Team Options

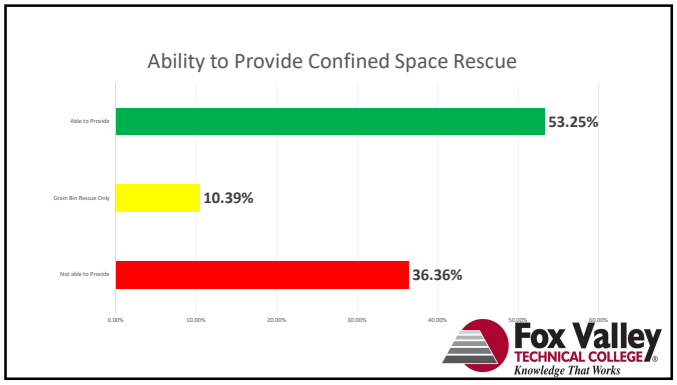
- Fire Department
- Internal Department
- 3rd Party Rescue Team

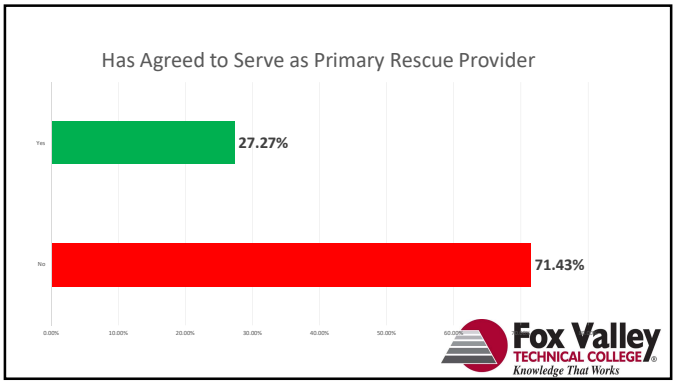
Challenges with Using Fire Department Rescue

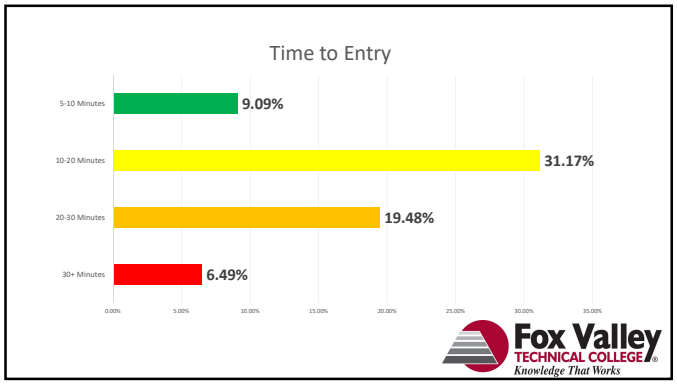
- Most Fire Departments not trained and equipped
- Rescue team is not on site and will need to respond
- Fire Departments may not be available
- Fire Departments will not use your equipment/test results

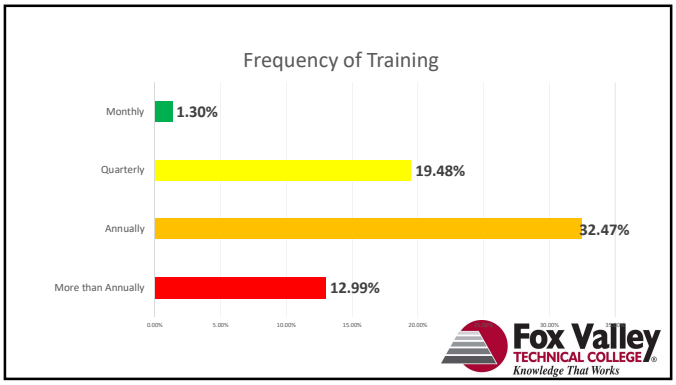
Fire Department Statistics

- Conducted a survey of Fire Departments in Wisconsin through Wisconsin State Fire Chiefs Association
- 77 total responses received
  - Potential for error



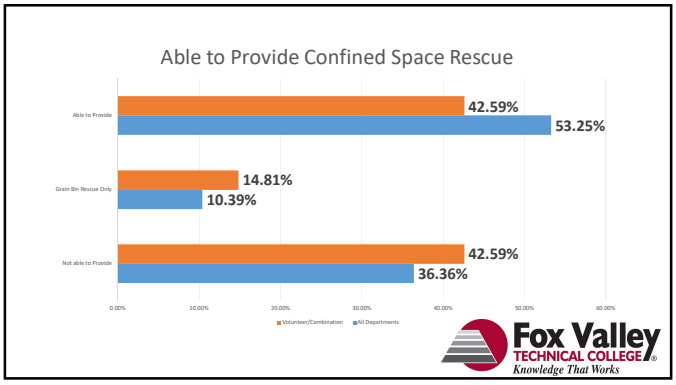


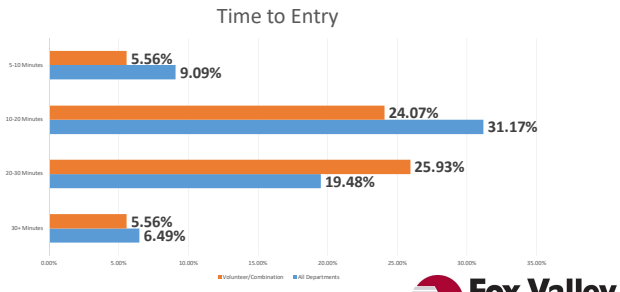


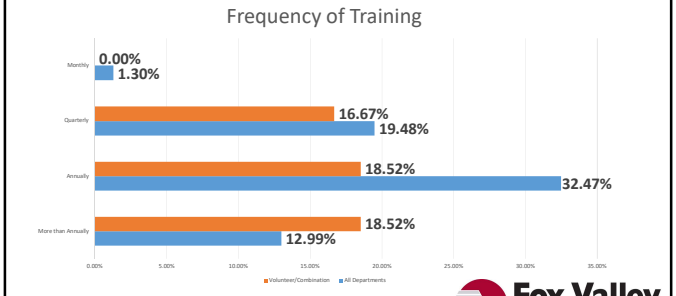


Volunteer/Combination Department Statistics

- Accounts for ~70% of respondents
- Combination Departments may have full time first unit or full time leadership/inspectors
- National Standard for volunteer department response time is 15 minutes







Rescue Considerations—Grain Bins

- Grain Bins or similar structures require special attention
- Victims and rescuers can quickly be buried
- Buried does not mean dead

Key Points

- An ounce of prevention is worth a pound of cure
- Rescue must be available within 12-15 minutes of **incident occurrence**
- Self/non-entry rescue is **ALWAYS** the safest/fastest method
- A **RESCUE PLAN** must be in place before every PRCS Entry
- Fire Department may or may not be able to assist…Get it in writing