Confined Spaces

Developing and Maintaining an Effective Program

Why Do It?

Statistics

- Standard Covers 240,000 Workplaces and 2.1 Million Workers

  2017- 166 Fatalities

  2016 - 144 Fatalities
- 60% Are Would Be Rescuers

Fatality Statistics

- Atmospheric Conditions
- Fire / Explosion within Confined Space
- Trapped in Unstable Material
- Caught / Crushed by …
- Struck by Falling Objects
- Stress from Excess Exertion

What is a Confined Space?

- Large Enough to Enter
- Limited Access and Egress
- Not Designed for Human Occupancy

Permit Required Confined Space

Contains Any Potential or Foreseeable Hazard

Typical Confined Spaces

- Sumps
- Pits
- Tanks
- Vessels

Typical Confined Spaces

- Excavations
- Basins
- Cellars
- Half Rounds

Program Components

Regulatory Obligations

Training

Designated Responsibilities

Permit System

Equipment

Rescue

Annual Review

Regulations

OSHA 29 CFR 1910.146

- General Industry Confined Space Entry

ANSI / API Sixth Addition 2015

- Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks

NFPA 2015 Edition

- Standard for Safeguarding of Tanks and Containers for Entry, Cleaning and Repair

Various Customer Requirements

API American Petroleum Institute

NFPA®

OSHA

Training

Confined Space Training

- Classroom

Rescue

- Classroom
- Simulation / Hands On

Rescue Annual Refresher

- Annual Minimum

Designated Responsibilities

- Entrant
- Attendant
- Supervisor
- Rescuer

Entry Permit

ST&E

CONFINED SPACE PERMIT

Date _____ Time _____ am pm Location _____

Space Identification _____

Purpose of Entry _____

CONFINED SPACE TYPE

☐ 500 BBL Tank ☐ Production Tank ☐ Half Round ☐ Pit ☐ Cellar

☐ Fuel Tank

☐ Other _____

RESPONSIBILITIES

Supervisor _____

Entrant(s) _____

Attendant _____

POTENTIAL HAZARDS

☐ O2 Deficiency ☐ O2 Enrichment ☐ Flammable Atmosphere

☐ Toxic Gas / Vapor ☐ Combustible Dust ☐ Chemical Contact

☐ Mechanical Hazards ☐ Slips / Trips / Falls ☐ Noise

☐ Engulfment ☐ Entrapment ☐ Heat / Cold Stress

☐ Poor Lighting

☐ Other _____

HAZARD ELIMINATION

☐ All energy sources locked/tagged out ☐ System cooled to ambient air temperature

☐ Attendant posted outside confined space ☐ Confined space emptied of all material

☐ Communication established and maintained ☐ Establish ventilation

☐ Confirm acceptable oxygen level ☐ Test for hazardous atmosphere

☐ Hot Work Permit ☐ Continual air monitoring

ST&E

CONFINED SPACE PERMIT

SAFETY EQUIPMENT

☐ Eye / Face Protection ☐ Hard Hat ☐ Fall Protection

☐ Respirator ☐ Ladder ☐ Retrieval Equipment

☐ Ventilation Equipment ☐ Air Monitor ☐ Lock Out/Tag Out Device

☐ FR Clothing ☐ Protective Clothing

☐ Other _____

ATMOSPHERIC TESTING

O2 %	Initial ____	Test 1 ____	Test 2 ____	Test 3 ____	Test 4 ____
LEL %	Initial ____	Test 1 ____	Test 2 ____	Test 3 ____	Test 4 ____
H2S ppm	Initial ____	Test 1 ____	Test 2 ____	Test 3 ____	Test 4 ____
CO ppm	Initial ____	Test 1 ____	Test 2 ____	Test 3 ____	Test 4 ____

Hazard Elimination completed by: _____

CREW ACKNOWLEDGEMENT

_____ _____

Supervisor Signature Attendant Signature

_____ _____

Entrant Signature Entrant Signature

PERMIT TERMINATION

Time _____ am pm Reason _____

Atmospheric Monitoring

Remote and Personal

Ventilation

Manhole Ventilator

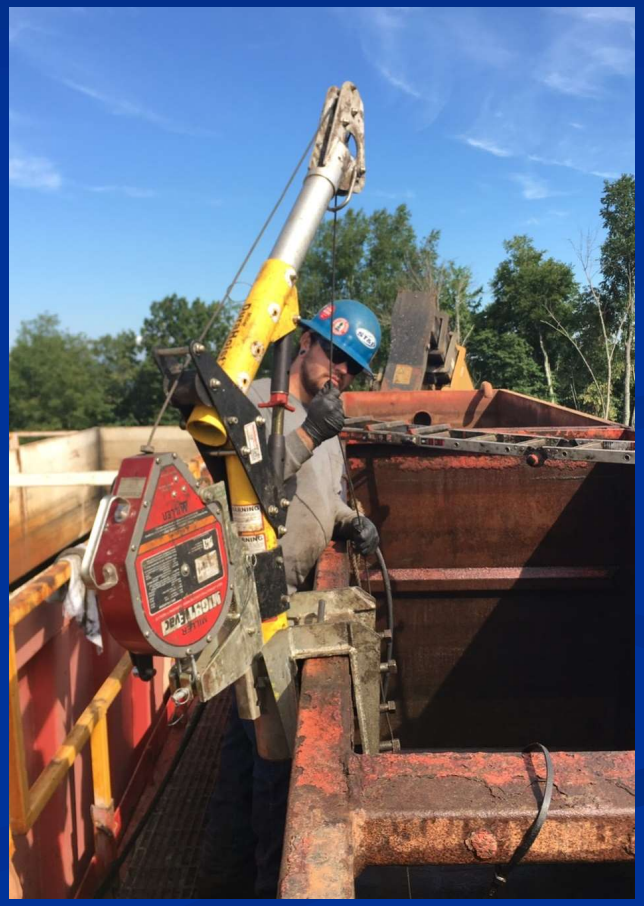
Smoke Ejector

Equipment

Non-Entry Rescue

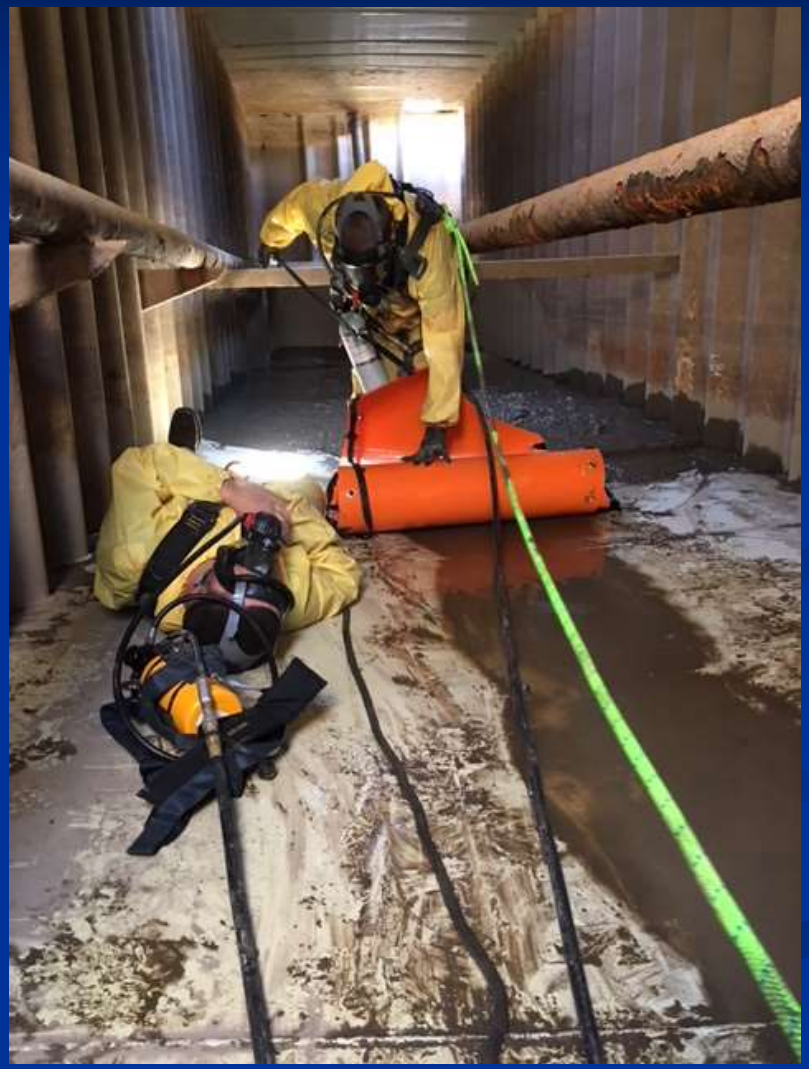
Equipment

Non-Entry Rescue



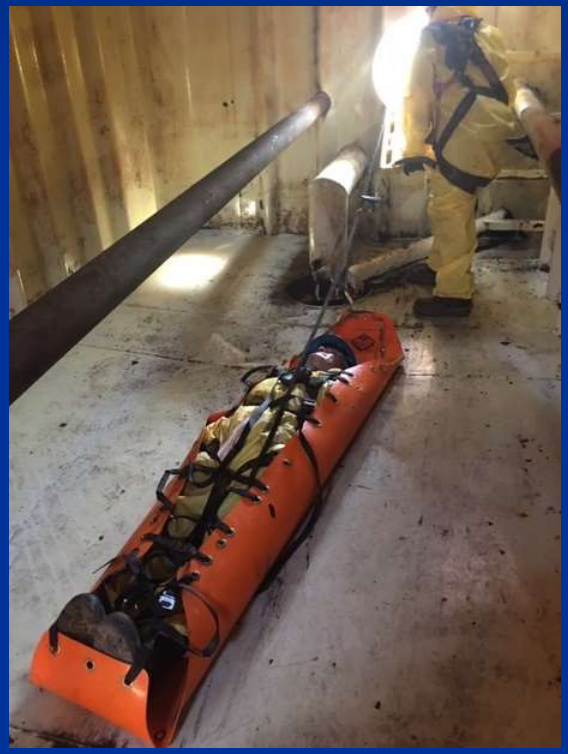
Equipment

Respirators



Rescue

Patient Packaging / Retrieval



Annual Review

Procedures Working

Permit Evaluations

Atmospheric Monitoring

PPE

Tools / Materials

Training

Employee Buy In

What Questions Do You Have?