



## **Confined Space Entry/Attendant/Rescue**

### Course Outline

**Prerequisites:** This course shall have no formal pre-requisite.

**Course Length:** 8 hours - Course length shall vary depending on the number of delegates. Total course time includes breaks and meals.

**Class Size:** The maximum number of delegates that may be trained and tested per instructor shall be thirty-five (35) in the classroom session and twenty (20) in the practical session. A second instructor shall be added for the practical session once the participation exceeds twenty (20) and exercises will be divided into groups.

### **Course Objective**

- ) Provide delegates assigned to confined space duties the necessary skills to safely perform their jobs.
- ) Identify the characteristics of a confined space.
- ) Describe the basic hazard categories associated with confined space.
- ) Determine the elements of a confined space program.
- ) Identify and describe the primary roles of authorized entrants, attendants, supervisor, and designated rescue team/services.
- ) Rescue team requirements
- ) Personal Protective Equipment
- ) Ability to properly use rescue equipment.
- ) Ability to use retrieval systems.
- ) Ability to perform a rescue.
- ) Delegates should be able to demonstrate the necessary skills during practical examination and demonstrate knowledge during written examination.

### **Course Design**

- ) Power Point© / Lecture / Audio Video / Visual Aids
- ) Demonstrations
- ) Practical Exercises

### **Successful Course Completion**

- ) Requires a minimum score of 75% or better.
- ) Delegates will have no more than thirty (30) minutes to complete the exam.
- ) Grades shall be calculated by dividing the number of questions answered correctly by the total number of exam questions.
- ) Successful completion of practical session is mandatory.



## M&A Safety Services

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### Course Content Summary:

- ) Classroom
- ) Practical's

**Breaks:** 10 minutes (approximately every hour)

**Lunch** – 1 Hour

### Course Outline

#### About Confined Spaces

- ) OSHA/NIOSH Statistics
- ) What is a Confined Space?
- ) What is a Permit Required Confined Space?
- ) Common Examples of a Confined Space

#### Responsibilities of Personnel

- ) Competent Persons
  - o Entrant
  - o Attendant
  - o Rescue
  - o Entry Supervisor
- ) Roles and Responsibilities of Personnel

#### Confined Space Entry

- ) Entry Requirements
- ) Entry Permit Requirements/Completion
- ) Hazard Evaluation
- ) Pre-Job Safety Planning
- ) Entry Permit Close Out
  - o Routine
  - o Emergency
- ) What Constitutes Entry?
- ) Confined Space Hazards
  - o Atmospheric
  - o Physical

#### Atmospheric Hazards

- ) Oxygen Levels
  - o Asphyxiation
- ) Effects of Oxygen Deficiency
- ) Breathing Air Composition



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- ) What Causes Oxygen Deficiency Atmosphere?
- ) What Causes Oxygen Enriched Atmosphere?
- ) Other Hazards
- ) Toxic Contaminants
- ) How much is Hazardous?
  - o Permissible Exposure Limit (PEL)
  - o Threshold Limit Value (TLV)
    - Time Weighted Average (TWA)
    - Short Term Exposure Limit (STEL)
    - Exposure Ceiling
- ) Common Hazardous Gases Found in Confined Spaces
- ) Acute/Chronic Symptoms
- ) Flammability
  - o Explosions
  - o Explosion Mixture
  - o Flash Point
  - o Upper Explosive Limit (UEL)
  - o Lower Explosive Limit (LEL)
- ) LEL Requirements (OSHA)
- ) UEL/LEL Examples
- ) Causes of Flammable Atmospheres
- ) Fire Ignition
- ) Material Safety Data Sheets (MSDS)
  - o Components of MSDS
  - o Sections of MSDS

### Atmospheric Hazard Protection

- ) Control Measures
  - o Engineering Controls
  - o Administrative Controls
  - o Personal Protective Equipment (PPE)
- ) Types of Respirators
  - o Air Purifying Respirator (APR)
  - o Supplied Air Respirator (SAR)
    - Self-Contained Breathing Apparatus (SCBA)
    - Atmospheric Supplied
    - Cascade Systems
    - Escape Packs
- ) Respirator Fit Testing
  - o Quantitative
  - o Qualitative



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- ) Respirator Usage
- ) Respirator Inspection
- ) Respirator Maintenance
- ) Respirator Donning/Doffing
- ) Respirator Storage
- ) Air Monitors
  - o Different Types
  - o Function
  - o Advantages/Disadvantages of Each Type
  - o User Responsibility
- ) Air Sampling in a Confined Space
  - o Stratification

### Physical Hazards

- ) Common Physical Hazards
  - o Engulfment
  - o Entrapment/Entanglement
  - o Potential Energy
  - o Electrical
  - o Pressure
  - o Momentum/Gravity
  - o Residual/Stored
- ) Protective Measures for Each Hazard

### Worker Introduced Hazards

- ) Common Examples
- ) External Hazards

### Confined Space Safety

- ) Isolating the Space
- ) Clearing the Space
- ) Ventilation
  - ) Types of Ventilation
    - o Natural
    - o Mechanical Supply
    - o Mechanical Exhausting
  - ) Ventilation Factors
  - ) Supply Ventilation Directions
  - ) Exhaust Ventilation Directions
  - ) Proper Ventilation Techniques



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### About Rescue

- ) Employer Responsibilities
- ) Rescue Personnel Requirements
- ) Outside Rescue Team Requirements

### Personal Protective Equipment (PPE)

- ) Hazard Recognition
  - o Material Safety Data Sheet (MSDS)
  - o North American Emergency Response Guidebook (NAERG)
  - o Entry Hazard Assessment
- ) Common Types of PPE
  - o Eye and Face Protection
  - o Respiratory Protection
  - o Chemical Clothing
  - o Head Protection
  - o Hand Protection
  - o Hearing Protection
  - o Foot Protection

### Confined Space Rescue

- ) Types of Rescues
  - o Self-Rescue
  - o External Rescue
- ) Rescue Pole/Remote Hooks
- ) Retrieval Systems
- ) Self-Retracting Lanyards
- ) Personnel Hoists
- ) Evacuation Harnesses
- ) Retrieval Line Attachment Points
- ) Wristlets Retrieval System
- ) Stretcher/Immobilization Equipment
  - o SKED's

### Practical Session

Practical training shall utilize a confined space simulator and other safety equipment.

Practical shall verify the following:

- ) Properly select and wear appropriate PPE during practical training
- ) Conduct proper pre-use inspection of PPE and equipment
- ) Effectively communicate amongst Entrant, Attendant, & Rescue Team



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- ) Effectively monitor and control air quality
- ) Ability to safely perform work in a confined space environment
- ) Properly secure life lines
- ) Use Tri-Pod/Winch and other rescue equipment
- ) The ability to safely perform a rescue
- ) Ability to properly store equipment and PPE

### **Training Center Provided Material**

- ) PPE
- ) Confined Space Equipment

### **Delegate Requirements**

- ) Must possess good physical health as the practical training is physical demanding.

### **Reference Material / Documents**

OSHA 29 CFR 1910.146  
OSHA 29 CFR 1910.134