Oil Sands Safety Association (OSSA)

CONFINED SPACE ENTRY

Safety Training Standard

CSE2005-08

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1.0 PURPOSE

The purpose of this training standard is to clearly establish the **minimum** acceptable content for Confined Space Entry training programs provided by Training Providers who have received Accreditation from the Oil Sands Safety Association (OSSA). This Standard is intended for End-Users (See Appendix I - Definitions) required to enter Confined Spaces.

For definitions referenced in this Standard, see Appendix I.

Exceptions to this standard must be approved by the Board of Directors of the OSSA.

1.1 Disclaimer

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1.2 Introduction

This Confined Space Entry Training Standard has been established to provide Training Providers with direction as to the **minimum** training program content requirements to meet the needs of the OSSA Member companies. A training program meeting this Standard would typically require 2 hours to complete, depending on class size, number of instructors and any class room props used for practical demonstration and testing.

It should be noted that the training required to meet this standard focuses on the needs of the End-User. Additional training will be required for Confined Space Monitors and Rescue Personnel to reflect their responsibilities for this critical safety work.

This is the minimum standard that must be met in order to receive Accreditation as a Confined Space Entry Training Provider from the OSSA.

1.3 Scope

End-Users required to enter confined spaces must be trained in the recognition of the hazards associated with Confined Space entry and understand the methods of controlling these associated risks.

The objective of the OSSA Confined Space Entry Standard is to ensure that end-users demonstrate basic knowledge and proficiency in the identification and classification of confined spaces and their associated risks and for understanding the methods of controlling these risks, prior to entry into confined spaces.

Subject to the previous sentences, all programs submitted for Accreditation must, at a **minimum,** meet the requirements specified in each section of this Standard.

1.4 Training Material Requirements

The program content for Accredited Safety Training Programs for Confined Space Entry must ensure that **all references to weight and measures** are expressed **in both imperial and metric units**. The programs are also expected to have available for use by End-Users, at a minimum, the following material:

1) Access to applicable sections of the OH&S Act, Regulations and Codes regarding Confined Spaces, fire and explosion hazards, chemical hazards, and isolation and control of hazardous sources.
2) Access to the OSSA Regional Code of Practice (RCOP) for Confined Space Entry.
3) End-User guides and/or workbooks to be kept by the user upon successful completion of the program that include, as a minimum, the following information:
    a) Reference to the RCOP for Confined Space Entry;
    b) Confined Space definition;
    c) Hazard assessment;
    d) Safety and protection;
    e) Atmospheric testing;

f) Ventilation and Purging;
g) Inerting;
h) Classification of Confined Space Levels;
i) Entry permit system;
j) Entry tag;
k) Signage for Confined Space entry;
l) Confined Space monitoring;
m) Entrant tracking;
n) Emergency response;
o) Record retention.

4) Representative examples of signage and entry tags as detailed in the OSSA RCOP for Confined Space Entry.
5) Additional training aids as determined by the Training Provider (e.g. videos, DVD, etc.)

NOTE: End-Users must understand that it is the responsibility of each employer to review the specific work practices and protocols associated with confined space entry prior to commencement of work.

2.0 CONFINED SPACE ENTRY BASICS

2.1 Legislation and Standards

Development of training materials or instruction must use at a **minimum**, but not necessarily be limited to, the following references:

a) OH&S Act, Regulation and Code requirements for Confined Spaces.
b) OSSA RCOP for Confined Space Entry.

2.2 Why Confined Space Entry Training

The training must provide an overview and introduction to confined spaces and their governing Legislation. It must clearly emphasize the need to recognize Confined Spaces, the associated hazards, and the required controls.

Additional training may be required depending on atmospheric or work specific hazards.

The training content must include at a **minimum,** but not necessarily be limited to, the following information:

1) Overview of the characteristics and definitions of the entry level classifications as defined in the RCOP for Confined Space Entry with examples of each.

2) Overview of the Legislative requirements covered in the Alberta OH&S Act, Regulations and Codes including the responsibilities of the employer and worker.

3) Recent statistical information and examples (where possible) on confined space related injuries and/or fatalities from Alberta Workplace Health and Safety or other applicable sources.

4) Overview of typical confined space hazards (e.g. atmospheres, noise, heat, solids entrapment, etc.) and hazard identification methods (e.g. gas testing, job safety analysis, field level risk assessment, etc.)

5) Overview of control methods: confined space monitoring, permits, isolation controls, lock out, purging, ventilation, shoring and atmospheric testing requirements.

It should be emphasized that confined space hazards should be eliminated whenever possible and practical to do so and that the use of personal protective equipment (PPE) should only be used as a "last line of defense" and only if it affords adequate protection to the End-User.

6) Overview of emergency planning requirements including evacuation procedures, lines of Communication and Rescue Plans.

2.3 Confined Space Entry Planning

1) The training program must include methods and examples of analyzing, eliminating, preventing, and controlling hazards associated with confined spaces. This should include, but not necessarily be limited to: engineering and/or administrative controls, PPE requirements, review of rescue and escape plans, and identification and control of workplace hazards.

2) End-Users must understand that the PPE they utilize for safe entry into a confined space must be inspected prior to entry and that PPE inspection must be documented (e.g. check list, job safety analysis, field level risk assessment, etc.).

3) End-Users must understand that specific work can create potential hazards and must be part of the hazard assessment for Confined Space entry. The training program must include a review and examples of the hazards associated with work activities including, but not necessarily limited to: welding/hot work, chemical handling, and safe use of compressed gases.

4) End-Users must understand the need for rescue and escape plans. Training content will include, but not necessarily be limited to: identifying an emergency contact, required rescue equipment, methods of communication and the responsibilities of each worker.

5) End-Users must understand the need for cleaning, purging, neutralizing, proper isolation, atmospheric testing, adequate ventilation, and entry authorization requirements.

6) End-Users must understand that all documents associated with a confined space entry must be retained as per Legislated requirements. (e.g. check lists, job safety analysis, field level risk assessment, permits, entry logs, safe entry tags, etc.).

2.4 Classification of Confined Space Entries

The training program must contain a class exercise that includes the a) definition, b) characteristics, c) training requirements, and d) examples of each of the following:

1) Confined Space Level One entry
2) Confined Space Level Two entry
3) Confined Space Level Three entry

2.5 Hazardous Atmospheres / Gas Testing

The training program must include an a) overview of the elements of hazardous atmospheres; b) associated terminology, and the c) importance of atmospheric testing. This must include, but not necessarily be limited to, an explanation of:

1) Toxic Atmospheres Immediately Dangerous to Life or Health (IDLH) and Occupational Exposure Limits (OEL) in regards to substances common to the industry including, but not necessarily limited to: carbon monoxide, hydrogen sulfide, sulfur dioxide, nitrogen and hazardous particulates.
2) Flammable (Explosive) Atmospheres including an explanation of Lower Explosive Limit (LEL), Upper Explosive Limit (UEL), and absolute limits for entry/evacuation.
3) Oxygen Enrichment related to Flammable (Explosive) Atmospheres.
4) Oxygen Deficient / Inert Atmospheres including causes and symptoms of Oxygen Deficiency.
5) An explanation of the rationale and need for Purging (see Appendix 1- Definitions).
6) Gas testing frequency; methods and frequencies will vary and be dependant upon area classification, nature of the work, adjacent work activities, and proximity to plant processes.

2.6 Isolations

The training program must include an overview of the **minimum** Legislated isolation requirements for entry into a confined space as outlined in Parts 5, 10, and 15 of the Alberta Occupational Health and Safety Code. The End-User must also have an understanding of the definition of “positive isolation”, typical energy sources, and isolation methods. The information must include, but not necessarily be limited to, the following:

1) Overview of Legislative isolation requirements for entry into a confined space
2) Definition of “positive isolation”
3) An understanding of the following typical energy sources:
    a) Mechanical;
    b) Hydraulic;
    c) Pneumatic;
    d) Electrical;

e) Radiation;

f) Chemical; and

g) The potential for the above to be residual or stored energy.

4) An understanding of the following typical isolation methods:

a) Blind / Blank;

b) Double block and bleed;

c) Misaligning or removing sections of line, pipe or ducts;

d) Lock out / tag out / verification; and

e) Immobilizing or disconnecting energy sources.

2.7 Entry Authorization

The training program must provide an understanding of the requirements of the RCOP for Confined Space Entry, the purpose of a permit system, and an overview of the requirement for a competent Confined Space Monitor. Emphasis must be placed on the requirement for every worker who is involved in any aspect of a Confined Space entry to comply with the site/space specific practices and procedures.

2.8 Signage/Tagging

The training program must provide a clear understanding of the different signage and entry tags used for Confined Spaces as outlined in the RCOP for Confined Space Entry.

Emphasis must be placed on the significance of “Danger Do Not Enter” Signage which is placed over the opening prior to vacating a post and when an evacuation of the confined space is initiated due to an event that may compromise the conditions of the confined space. The “Danger Do Not Enter” signage means absolutely NO person enters the confined space at which such signage is posted.

3.0 KNOWLEDGE TESTING

It is important that the knowledge evaluation and test topics are covered to ensure End-Users have acquired the necessary knowledge upon completion of the Confined Space Entry Training Program. End-Users must demonstrate knowledge and proficiency regarding confined space entry by successfully completing a theory-style examination covering the minimum training content as outlined under Sections 2.3, 2.4, 2.5, 2.6, 2.7, and 2.8 of this Standard.

The End-User must demonstrate knowledge by individually answering questions on topics that include, at a minimum, but are not necessarily limited to:

1) Legislative requirements as they apply to confined spaces.

2) Hazard analysis including the identification of control methods and emergency planning.

3) Classification, characteristics, and examples of all entry levels.

4) Understanding of the terminology regarding hazardous atmospheres.

5) Understanding of the employer's responsibilities to provide site specific information on codes of practice, procedures/work practices, authorization/permits, signage/tagging, and additional training requirements.

6) Understanding of the employee's/worker's responsibilities to obtain site specific information on procedures/work practices, authorization/permits, signage/tagging, and additional training requirements.

7) Understanding of the employer's and the employee's responsibilities with regards to the inspection of, and document retention for, PPE utilized for confined space entry.

4.0 RE-CERTIFICATION PROCESS

The OSSA does not currently require re-certification with respect to Confined Space Entry training. However, it is the policy of the OSSA to review each Standard every three years following its endorsement by the Members and the OSSA reserves the right to revise the re-certification requirements at any time.

5.0 APPENDIX I - DEFINITIONS

1) **"Accreditation" or "Accredited"** means authorization, in writing, from the OSSA that a Training Provider's Program meets the minimum requirements of a particular Safety Training Standard. Accreditation may be withdrawn by the OSSA any time. In order to be a Safety Training Provider of a Standard, an Organization's Accreditation must be current.

2) **"Atmosphere"** means the gases, vapors, mists, fumes and dust within a Confined Space.

3) **"Blind/Blank"** means a secured device that physically prevents the possibility of flow or leakage.

4) **"Board of Directors"** means the Board of Directors as appointed by the Owners of the OSSA that provide, in writing, endorsement for initial documents of, and approval for any revisions or exceptions to, a Safety Training Standard and/or Regional Code of Practice.

5) **"Confined Space"** means an enclosed or partially enclosed space with a restricted means of entry or exit that is not designed or intended for continuous human occupancy, and due to:

   - its design, construction, location, or atmosphere;
   - the work activities, materials or substances in it;
   - the compromised nature of providing first aid, evacuation, rescue or other emergency response services within it; or
   - other hazards relating to it; may become dangerous to the life, health, or safety of a worker who enters it.

6) **"Confined Space Level 1"** means a Confined Space that is Immediately Dangerous to Life or Health (IDLH). This includes, but is not necessarily limited to, a Confined Space characterized by an Oxygen Deficiency, Flammable (Explosive) Atmospheres, and/or concentrations of toxic substances.

7) **"Confined Space Level 2"** means a Confined Space that is not Immediately Dangerous to Life or Health, but has the potential for causing injury and illness if preventive measures are not used.

8) **"Confined Space Level 3"** means a Confined Space in which the potential danger to life or health would not require any special modifications of the work procedure.

9) **"Confined Space Monitor"** means a person capable of summoning rescue assistance and whose responsibility it is to remain outside the Confined Space while maintaining communication with those working inside the Confined Space.

10) **"Contract Instructor"** means an individual or Organization, independent of an Accredited Training Provider, that has completed a "Train-the-Trainer" program with an Accredited Training Provider, signed all legal agreements, and has otherwise met the requirements set out in this Standard.

11) **"End-User"** means a worker required to engage in Confined Space entry.

12) **"Flammable (Explosive) Atmosphere"** means an atmosphere containing a flammable gas or vapor at a concentration between the Lower Explosive Limit (LEL) and the Upper Explosive Limit (UEL).

13) **"Hazard"** means a source of danger or risk.

14) **"Hot Work"** means work in which a flame is used or sparks or other sources of ignition may be produced including:

- Cutting, welding, burning, air gouging, riveting, drilling, grinding, and chipping;
- Using electrical equipment not classified for use in a hazardous location; and
- Introducing a combustion engine to a work process.

15) **"Immediately Dangerous to Life or Health (I.D.L.H.)"** means an oxygen deficient atmosphere or an atmospheric concentration of any harmful substance that poses an immediate threat to life or health or may cause irreversible or delayed adverse health effects or may interfere with an individual's ability to escape from a dangerous atmosphere.

16) **"Inerting"** means intentionally flooding the atmosphere inside a Confined Space with an inert gas in order to eliminate the potential for the of ignition of flammable vapors inside a Confined Space but thereby creating an oxygen deficient atmosphere.

17) **"Instructor"** means individuals that are employees of the Accredited Training Provider and are providing training under an Accredited Training Program.

18) **"Isolation"** means a process whereby the Confined Space is removed from service and completely protected against the inadvertent release of material by the following:

- Blanking/Blinding;
- Misaligned sections of all lines and pipes;
- Double block and bleed system;
- Electrical lock out of sources of power; or
- Blocking or disconnecting mechanical linkage

19) **"Legislation"** means all municipal and local laws, statutes, ordinances, by-laws, regulations, orders, directives and decisions rendered by any ministry, department or administrative or regulatory agency relating in any way to the health and safety of workers in the Province of Alberta;

20) **"Lower Explosive Limit (LEL)"** means the **minimum** concentration of flammable vapor in air at which the propagation of flame occurs on contact with a source of ignition.

21) **"Members"** means the member or subscriber Organizations of the OSSA and includes their respective employees, officers, directors, shareholders, ownership groups and successors and assigns, including, without limitation, Syncrude Canada Ltd., Suncor Energy Inc. and Albian Sands Energy Inc.;

22) **"Occupational Exposure Limit (OEL)"** means the maximum concentration of a substance to which a person may be exposed for specific lengths of time as defined by the OH&S Act, Regulations, and Code.

23) **"OH&S Act, Regulations and Code"** means the *Occupational Health and Safety Act*, R.S.A 2000, c. 0-2, as amended, and regulations and codes enacted or adopted thereunder.

24) **"Organization(s)"** means and includes any individual, corporation, partnership, firm joint venture, syndicate, association, government, governmental agency or board or commission or authority, and other forms of entity or organization.

25) **"OSSA Members and Employees"** means the OSSA and its employees, agents, contractors, and Members of the OSSA.

26) **"Oxygen Deficiency"** means a condition characterized by an Atmosphere where the oxygen content is less than 19.5% by volume at sea level.

27) **"Oxygen Enriched"** means a condition characterized by an Atmosphere where the oxygen content is greater than 23% by volume at sea level.

28) **"PPE"** means personal protective equipment.

29) **"Purging"** means the method by which gases, vapors or other airborne impurities are displaced from a confined space.

30) **"Re-Certification"** means the process of verifying that a worker continues to maintain the proficiency requirements as specified in the original Accredited Training Program. This process will include re-testing of knowledge requirements and/or challenging a proficiency exam.

31) **"Regional Code of Practice (RCOP)"** means a Code of Practice, endorsed by the OSSA, governing the practices, procedures and safety training standards, to be followed at each of the OSSA Owner sites. This Code may be amended by the OSSA from time to time.

Note: Any new Legislative requirements shall take precedent over the Regional Code immediately upon the coming into force in Alberta of the new requirements.

32) **"Rescue Personnel"** means qualified emergency response personnel.

33) **"Rescue Plan"** means a plan developed that addresses rescue equipment, location of this equipment, Rescue Personnel requirements, and means of communication and implementation of rescue.

34) **"Standard"** means the minimum acceptable content requirements for an end-user that is set out in an OSSA Safety Training Standard, as amended by the OSSA from time to time.

35) **"Training Provider(s)"** means those Organizations that have received Accreditation status, in writing, from the OSSA to provide a Safety Training Program.

36) **"Upper Explosive Limit (UEL)"** means the maximum concentration of flammable vapor in air at which the propagation of flame occurs on contact with a source of ignition.