NORTHWEST TERRITORIES & NUNAVUT

CODES OF PRACTICE

In accordance with the
Northwest Territories and Nunavut Safety Acts
and Occupational Health and Safety Regulations

EMPLOYER GUIDELINE

CONFINED SPACES

WSCC Workers' Safety & Compensation Commission | ᐃᓕᓴᕐᓂᐊᕐᓂᖅ ᐊᑦᑕᕐᓂᖅ ᐊᒥᓱᓕᕆᓂᖅ ᖃᓄᐃᓕᓐᓂᒃ

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Code of Practice

Employer Guideline
CONFINED SPACES

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If you would like this code of practice in another language, please contact us.

FOREWORD

The Workers' Safety and Compensation Commission (WSCC) produced this industry Code of Practice in accordance with subsections 18(3) and 18(4) of the Northwest Territories and Nunavut *Safety Acts.*

The WSCC acknowledges and thanks WorkSafe Alberta and the Ontario Ministry of Labour for information and resources used in the *Confined Spaces Employer Code of Practice Guideline*. This code of practice is an adaptation of WorkSafe Alberta's *Guideline for Developing a Code of Practice for Confined Space Entry* and the Ontario Ministry of Labour document *Confined Space Guidelines*.

The Code of Practice applies to all workplaces covered by the Northwest Territories and Nunavut *Safety Acts* and *Occupational Health and Safety Regulations*.

The *Employer Guideline Confined Spaces* code of practice relates to section 18 of the *Safety Act* and Part 3, section 14, Part 18, sections 273 to 282, Part 25, section 390, Part 30, section 453 of the *Occupational Health and Safety Regulations.*

IN EFFECT DATES:

Northwest Territories: June 1, 2015
Nunavut: May 31, 2016

UPDATED: April 30, 2021

Chief Safety Officer, WSCC

Copies of this code are available online from the WSCC at: **wscc.nt.ca** or **wscc.nu.ca**

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This publication refers to obligations under the workers' compensation and occupational health and safety legislation as administered by the Workers' Safety and Compensation Commission.
To ensure compliance with legal obligations always refer to the most recent legislation. This publication may refer to legislation that has been amended or repealed.
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or contact WSCC at 1-800-661-0792.

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WHAT IS A CODE OF PRACTICE?

WSCC codes of practice provide practical guidance to achieve the safety requirements of the Northwest Territories and Nunavut *Safety Acts* and related *Regulations*.

As per subsection 18(3) of the Northwest Territories and Nunavut *Safety Acts*, "For the purpose of providing practical guidance with respect to the requirements of any provision of this Act or the regulations, the Chief Safety Officer may approve and issue such codes of practice as he or she considers are suitable for that purpose."

WSCC codes of practice apply to workplaces in the Northwest Territories and Nunavut. The Chief Safety Officer approves codes of practice for use by all occupational health and safety (OHS) stakeholders. Codes of practice come into effect in each territory on the day they are published in the *Northwest Territories Gazette* and *Nunavut Gazette*.

Codes of practice do not have the same legal force as the *Safety Acts* and related regulations. A person or employer cannot face prosecution for failing to comply with a code of practice. However, in legal proceedings under the *Safety Acts* and related *Regulations*, failure to observe a code of practice may be a consideration when determining whether a worker or employer complies with the *Safety Acts* and related *Regulations*.

Employers and workers should follow WSCC codes of practice unless there is an alternative course of action that achieves the same or better occupational health and safety outcomes.

A Code of Practice

- Provides practical guidelines.
- Adapts to individual work sites.
- May serve as evidence.
- Should be followed unless there's a better way.

While also called a code of practice, employers write a confined space code of practice to explain safe procedures for confined space entry at a specific workplace. The employer's confined space code of practice applies only to the specific workplace and confined space hazard referenced their code.

DEFINITIONS

Chief Safety Officer: appointed by the WSCC, the Chief Safety Officer supervises and directs all WSCC safety officers in the Northwest Territories and Nunavut in carrying out and enforcing the *Safety Acts* and related regulations.

Confined Space: an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy, with a restricted means of entry or exit.

CSA Standards – the Canadian Standards Association (CSA) is an accredited standards development organization and certification body. The standards they develop define requirements for reducing the risk of workplace injuries. Canadian Safety Standards can be found at https://www.csagroup.org/.

CSA Confined Spaces Standard - the Canadian Standards Association standard CSA Z1006-16 - Management of Work in Confined Spaces.

Hazardous Confined Space: means a confined space that endangers or could endanger a worker entering into or already in the confined space, due to the design, construction or atmosphere of the space, the materials or substances in the space, the work activities or processes used in the space, or any other conditions relating to the space.

Inerting: filling a confined space with an inert gas (e.g. nitrogen, carbon dioxide or argon) to reduce oxygen levels, eliminating a fire or explosion hazard.

Personal Protective Equipment (PPE): means any clothing, device or other article that is intended to be worn or used by a worker to prevent injury or to facilitate rescue.

Purging: displacing contaminants inside a confined space by replacing them with fresh air. Purging results in atmospheric conditions acceptable for worker entry.

Ventilation: the continuous supply of fresh air into a confined space, resulting in atmospheric conditions acceptable for worker entry. Ventilation must continue while a worker is in a confined space, ensuring an acceptable atmosphere even in the case of an accidental release of contaminants.

Workplace: any building, mine, construction site, vehicle, field, road, forest or other space where a worker is working. If a worker is present (completing work at, near or in the space), the location it is a workplace, regardless of how frequently work occurs at the location.

INTRODUCTION

The *Employer Guideline - Confined Spaces* code of practice provides information about developing a written employer confined space code of practice. The employer must maintain their documentation.

A confined space is a space that may become hazardous to a worker because of:

- atmosphere (oxygen deficiency or enrichment, flammability, explosivity or toxicity);
- changing physical conditions or circumstances; or
- characteristics inherent in a particular workplace activity.

Confined spaces are found at most workplaces. Confined spaces include but are not limited to crawl spaces, attic spaces or industrial tanks. Even if workers frequently enter confined spaces, they are not meant for regular or continuous human occupancy. The employer confined space code of practice ensures that workers are aware of hazards and follow proper safe work practices.

Employers should consult workers when drafting an employer confined space code of practice, as workers often have a good understanding of confined space work. The assistance of safety professionals, occupational hygienists or engineers may also be useful, especially for complex tasks or workplaces.

The employer confined space code of practice must:

- identify the location and type of confined space at the workplace;
- identify the hazards to workers and provide applicable information about worker qualifications; and
- identify atmosphere controls, air testing, PPE, rescue procedures and any applicable entry permit system.

The employer must regularly review the confined space code of practice to ensure procedures are up-to-date and reflect current work activities.

REGULATORY REQUIREMENT

Working in confined spaces poses considerable risk to workers. Proper planning and strict adherence to safe work procedures, including not permitting or requiring workers to enter or work in confined space will reduce unnecessary risk and keep workers safe.

The *Occupational Health and Safety Regulations* outline how to plan for work in confined spaces.

In relation to young worker, under Part 3: General Duties, employers may not permit or require young workers under the age of 16 to enter a confined space.

Occupational Health and Safety Regulations **Northwest Territories and Nunavut** **Part 3 GENERAL DUTIES** **Young Persons** **14.** (1) An employer shall ensure that an individual under 16 years of age is not required or permitted to work (d) in a confined space;

PART 18 CONFINED SPACE ENTRY **Interpretation** **273.** In this Part, "hazardous confined space" means a confined space that endangers or could endanger a worker entering into or already in the confined space, due to (a) the design, construction or atmosphere of the space, (b) the materials or substances in the space, (c) the work activities or processes used in the space, or (d) any other conditions relating to the space. (*espace restreint dangereux*) **Identification of Confined Spaces and Hazards** **274.** If a worker could be required or permitted to work in a confined space, an employer, in consultation with the Committee or representative, shall identify (a) types of confined spaces at the work site that the worker could be required or permitted to enter; (b) types of hazards that are or could be present at each confined space; (c) alternative means to perform the work to be performed in the confined spaces that need not require the worker to enter the confined spaces; and (d) alterations to the physical characteristics of the confined spaces that could be necessary to ensure safe entrance to and exit from all accessible parts of each confined space. **Avoidance of Entry into Hazardous Confined Space** **275.** (1) If reasonably possible, an employer shall use an alternative means to perform work that will not require a worker to enter a hazardous confined space. (2) An employer shall take reasonable steps to prevent unauthorized entry into a hazardous confined space.
Requirements Before Confined Space Entered **276.** (1) If a worker will be required or permitted to work in a confined space, an employer shall, before requiring or permitting the worker to enter the confined space, (a) ensure that there is a safe entrance to and exit from all accessible parts of the confined space; and

(b) make reasonable alterations to the physical characteristics of the confined space necessary to ensure a safe entrance to and exit from all accessible parts of the confined space.

(2) In making alterations under paragraph (1)(b), an employer shall ensure that the structural integrity of the confined space is maintained.

277. (1) Before a worker is required or permitted to enter a hazardous confined space, an employer shall appoint a competent individual

(a) to assess the hazards;

(b) if a potentially hazardous atmosphere has been identified, to test the atmosphere of the hazardous confined space for

(i) oxygen enrichment or deficiency,

(ii) the presence of flammable or explosive substances, and

(iii) the presence and concentration of hazardous airborne chemical substances; and

(c) to determine whether

(i) work activities or processes will result in the release of toxic, flammable or explosive concentrations of substances during the worker's occupation of the confined space,

(ii) measures have been taken to ensure that the worker will not drown or become entrapped in liquid or free-flowing solid present in the confined space,

(iii) the entry of liquid, free-flowing solid or hazardous substance into the confined space in a quantity that could endanger the health or safety of the worker has been prevented,

(iv) all energy sources that present a hazard to the worker entering into, exiting from or occupying the confined space have been locked out, with the energy sources being put in a zero energy state,

(v) any hazards from biological substances are present in the confined space, and

(vi) the opening for entry into and exit from the confined space is sufficient to allow safe passage of the worker who is using personal protective equipment required by these regulations.

(2) When testing the atmosphere of a hazardous confined space in accordance with paragraph (1)(b), a competent individual shall use appropriate and properly calibrated instruments that have been tested to ensure that the instruments are capable of operating safely and effectively.

(3) A competent individual who carries out the activities described in paragraphs (1)(a) to (c) shall prepare a report in writing that sets out

(a) the results of the assessment, tests and determinations;

(b) any recommended special precautions and procedures to reduce the risk to a worker, that are to be followed by the worker entering into, exiting from or occupying the confined space; and

(c) any recommended personal protective equipment to be used by a worker entering the confined space.

Notice If No Hazard Found

278. If a confined space is identified as not being a hazardous confined space, an employer shall

(a) notify a worker who is required or permitted to enter the confined space that the confined space is not hazardous;

(b) arrange for a method of communication with a worker on entry to and exit from the confined space and at appropriate intervals while a worker is in the confined space;

(c) prepare a procedure for the removal of a worker who has become injured or incapacitated while in the confined space; and

(d) ensure that the ventilation in the confined space is adequate to maintain safe atmospheric conditions.

Entry Plan

279. (1) If a worker will be required or permitted to enter a hazardous confined space, an employer, in consultation with the Committee or representative, shall develop a hazardous confined space entry plan to ensure the health and safety of workers who enter or work in the hazardous confined space.

(2) A hazardous confined space entry plan must be in writing and must include

(a) the tests or measurements necessary to monitor for oxygen deficiency or enrichment or the presence and hazardous concentration of flammable or explosive substances;

(b) the identification of other hazards that could be present in the hazardous confined space and could endanger a worker in the space;

(c) the means, if any, of isolating the hazardous confined space;

(d) the means, if any, of ventilating the hazardous confined space;

(e) the procedures to enter, work in and exit from the hazardous confined space safely;

(f) the availability, location and proper use of personal protective equipment;

(g) the rescue procedures to be followed, including the number and duties of personnel and the availability, location and proper use of equipment;

(h) the means to maintain effective communication with a worker who has entered the hazardous confined space; and

(i) the availability, location and proper use of any other equipment that a worker could need to work safely in the hazardous confined space.

(3) An employer shall ensure that the following workers are trained in and implement a hazardous confined space entry plan:

(a) a worker who is required or permitted to enter the hazardous confined space;

(b) a worker who attends a worker in the hazardous confined space under subsection 281(4) or subsection 281(5);

(c) a worker who could be required or permitted to implement the rescue procedures referred to in paragraph (2)(g).

(4) An employer shall make a copy of a hazardous confined space entry plan readily available at the entrance to the hazardous confined space.

The Regulations also address air quality concerns in confined spaces.

Purging and Ventilating of Unsafe Atmosphere

280. (1) In addition to the requirements of section 403 and subject to section 281, if a concentration of a toxic, flammable or explosive substance is present or an oxygen enrichment or deficiency exists in a hazardous confined space, an employer shall ensure that the hazardous confined space is

(a) purged and ventilated before a worker is required or permitted to enter the space, so that

(i) any hazard associated with a toxic, flammable or explosive substance is reduced to the extent that is possible or eliminated, and

(ii) an oxygen content of between 19.5% and 23% is assured; and

(b) continuously ventilated while the worker occupies the hazardous confined space, to maintain a safe atmosphere.

(2) If ventilation is used to reduce or eliminate a hazard under subsection (1), an employer shall ensure that a competent individual tests the atmosphere to determine that the confined space is safe for entry by workers

(a) before workers enter the confined space;

(b) if all workers have vacated the confined space, before any worker re-enters the confined space;

(c) on the request of a worker who is required or permitted to enter the confined space; and

(d) continuously if a condition in the confined space could change and put the workers' health or safety at risk.

When it is not possible to create a safe atmosphere, adhere to Part 7, Personal Protective Equipment. For more information see the codes of practice that address Personal Protective Equipment.

Precautions If Safe Atmosphere Not Possible

281. (1) If a hazardous confined space cannot be purged and ventilated to provide a safe atmosphere or a safe atmosphere cannot be maintained under section 280, an employer shall ensure that work is not carried out in the confined space unless it is carried out in accordance with the requirements of this section and section 403.

(2) An employer shall ensure that a competent individual continuously monitors the atmosphere in a hazardous confined space.

(3) An employer shall ensure that a worker is provided with and required to use a respiratory protective device that meets the requirements of Part 7 if

(a) the airborne concentration for a substance meets or exceeds the permissible contamination limit set out in Schedule O;

(b) oxygen deficiency or enrichment is detected; or

(c) the airborne concentration of any other substance could be harmful to the worker.

(4) An employer shall ensure that a worker in a hazardous confined space is attended by and in communication with another worker who

(a) has been adequately trained in the rescue procedures referred to in paragraph 279(2)(g);

(b) is stationed and remains at the entrance to the confined space unless replaced by another adequately trained worker; and

(c) is equipped with a suitable alarm to summon assistance.

(5) If entrance to a hazardous confined space is from the top
(a) an employer shall ensure that
(i) a worker uses a full-body harness and, if appropriate, is attached to a lifeline,
(ii) if a lifeline is used, the lifeline is attended by another worker who is adequately trained in the rescue procedures referred to in paragraph 279(2)(g), and
(iii) if reasonably possible, a mechanical lifting device is available to assist with a rescue and is located at the entry to the confined space while a worker is in the confined space; or
(b) an employer shall ensure that an alternate method of rescue is developed and implemented if the use of a full-body harness or lifeline would create an additional hazard.
(6) If flammable or explosive dusts, gases, vapours or liquids are or could be present in a hazardous confined space, an employer shall ensure that all sources of ignition are eliminated or controlled.
(7) An employer shall ensure that
(a) equipment necessary to rescue workers is readily available at the entrance to the hazardous confined space and used in accordance with the rescue procedures developed under paragraph 279(2)(g);
(b) the holder of a Level 1 first aid qualification certificate is available to provide immediate first aid; and
(c) personnel who are trained in the rescue procedures developed under paragraph 279(2)(g) and who are fully informed of the hazards in the confined space are readily available to assist in a rescue procedure.

When piping could discharge hazardous substances, the employer must ensure that equipment has the proper engineering to protect workers.

Piping Discharging Hazardous Substances

282. (1) If a worker could be required or permitted to work in a confined space into which piping could discharge a hazardous substance, an employer shall ensure that the piping
(a) has a blank installed that is sized for the proper pressure in the piping before the piping enters the confined space;
(b) is equipped with two blocking valves and a bleed-off valve installed between the blocking valves located so that bleed off does not contaminate the confined space; or
(c) is equipped with an approved safety device.
(2) If piping is equipped with two blocking valves and a bleed-off valve in accordance with paragraph (1)(b) or an approved safety device in accordance with paragraph (1)(c), an employer shall ensure that
(a) the valves in the flow lines are locked out in the "closed" position and the bleed-off valve is locked out in the "open" position;
(b) the valves are tagged to indicate that the valves must not be activated until the tags have been removed by a worker designated by the employer for that purpose; and
(c) the worker designated under paragraph (b)
(i) monitors the valves to ensure that they are not activated while a worker is in the confined space, and
(ii) records on the tag referred to in paragraph (b) the date and time of each monitoring and signs the tag each time the worker monitors the valves

No sandblasting in a confined space can take place without the approval of the Chief Safety Officer, who may impose certain conditions on when work can begin and how it must be done.

PART 25
SILICA AND ABRASIVE BLASTING
Sandblasting

390. (3) An employer shall ensure that sandblasting is not done inside a structure or confined space without

(a) first obtaining the written permission of the Chief Safety Officer; and
(b) complying with any conditions that the Chief Safety Officer specifies.

PART 30
ADDITIONAL PROTECTION FOR ELECTRICAL WORKERS

Portable Luminaires

453. (1) If a portable luminaire is used, an employer shall ensure that
(a) the electrical extension cord and fittings are approved for the intended use and are properly maintained; and
(b) the electrical extension cord is not used to supply power to equipment other than the portable luminaire, unless the cord meets the requirements of section 451.

(2) An employer shall ensure that a portable luminaire used in a damp location or in a metallic enclosure, including a drum, tank, vessel or boiler,
(a) is operated at a potential of not more than 12 V; or
(b) is supplied by a circuit that is protected by a Class A ground fault circuit interrupter.

DEVELOPING THE EMPLOYER CONFINED SPACE CODE OF PRACTICE

Customize employer confined space codes of practice to specific confined spaces. When hazards for confined spaces at a single workplace are similar, one code of practice is acceptable. An example situation where one employer code of practice can be written with the purpose of applying to multiple confined spaces is a community sewage system.

Employers must evaluate each hazard that workers may be exposed to in a confined space. For each hazard, identify the possible controls that workers require to protect themselves. For example, inerting may displace flammable gases or mechanical ventilation may improve the air quality in a space.

For an example *Employer Confined Space Code of Practice Work Sheet* see Appendix A

An employer confined space code of practice contains more than just procedures for entering a space. Employer confined space codes of practice also include the following sections as appropriate:

- a description of applicable confined spaces at the worksite (locations and type of confined space);
- reasons for work requiring confined space entry;
- identification of hazards that may be present in the confined spaces;
- worker training requirements and proof of training when necessary;
- an entry permit system (see the entry permit system section for more information);
- procedures for each type of confined space entry and the work inside the confined space;
- atmospheric testing procedures;
- ventilation, purging or inerting procedures;
- procedures for isolating hazardous substances or equipment;
- an emergency response plan;
- monitoring worker roles and responsibilities;
- recordkeeping requirements.

See below for explanations of some of the sections listed above. Discussions of the remaining sections are throughout this document.

ATMOSPHERIC TESTING

This section explains who tests the atmosphere prior to a worker entering a confined space. This section also details what substances to test for, when continuous testing occurs, what instruments to use for testing, how to calibrate testing instruments, and how to maintain testing records.

VENTILATION, PURGING OR INERTING

The employer confined space code of practice must describe when ventilation, purging or inerting is necessary and the specific processes and materials required to effectively vent, purge or inert the atmosphere. If using ventilation, purging or inerting, the code of practice must describe how to alert workers should the system fail.

ISOLATING HAZARDOUS SUBSTANCES

Isolating hazardous substances is important prior to entering a confined space. Isolation prevents hazardous substances from entering the confined space and ensures that any equipment inside a confined space is not hazardous to workers. The employer confined space code of practice must describe how to isolate confined spaces from hazardous substances.

EMERGENCY RESPONSE PLAN

An employer confined space code of practice must include the employer's confined space emergency response plan, explaining:

- the PPE workers will use in an emergency;
- how to maintain communication among workers in an emergency;
- what equipment is available to workers in the event of an emergency rescue; and
- what first aid and emergency rescue certification monitoring workers possess.

MONITORING WORKER RESPONSIBILITIES

Anyone monitoring workers in a confined space must be present at or near the entrance to the confined space in order to respond to potential emergency situations. An employer confined space code of practice must describe when to use a monitoring worker and the duties of monitoring workers during the confined space entry and in the event of an emergency.

RECORD KEEPING

It is beneficial for employers to keep detailed records of confined space entries, including but not limited to work procedures, confined space entry permits and test results. The employer confined space code of practice must state what records to keep and for how long the records will be kept.

For additional information about worker safety, see the *Hazard Assessment* code of practice and the *Personal Protective Equipment Respiratory Protection* code of practice at wscc.nt.ca or wscc.nu.ca

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IDENTIFYING CONFINED SPACE WORK HAZARDS

Employers must complete a hazard assessment, described in the *Hazard Assessment* code of practice, to evaluate all potential workplace hazards. The employer must identify the controls used to protect workers for each hazard.

1. IDENTIFY CONFINED SPACES

The first step to preparing an employer confined space code of practice is to inspect the workplace and identify all confined spaces that workers might enter for planned or unplanned maintenance or in the event of an emergency. Employers must post signs warning workers and other people of the presence of confined work spaces.

2. IDENTIFY HAZARDS IN THE CONFINED SPACES

To prepare an employer confined space code of practice, employers must know what potential hazards exist. Review the hazard assessment on a regular basis and revise it if conditions at the workplace change. Workplaces change upon the introduction of new work processes or when work processes or operations change. Employers must involve workers in the hazard assessment process.

Hazards in confined spaces generally fall within four categories:

- Atmospheric
- Safety
- Work-related
- Human

Atmospheric Hazards

Atmospheric hazards occur for a number of different reasons, including but not limited to:

- an accumulation of flammable, combustible or explosive agents;
- when the oxygen content in the atmosphere of a confined space is less than 19.5% or more than 23% by volume; or
- an accumulation of atmospheric contaminants. This could result in acute health effects up to and including death or interfere with a worker's ability to escape from a confined space.

Atmospheric hazards include but are not limited to:

- explosive gases or vapours;
- toxic gases or vapours;
- oxygen level content;
- fumes;
- dusts;
- mists;
- smoke; and
- biological contaminants (e.g. animal droppings or mould).

There are a number of ways to deal with atmospheric hazards. Reduce the oxygen content of the air in confined spaces by welding or brazing or absorption by grain, soils or bacteria. Inert gases can also dilute or displace the air in the confined space. During purging, pumping an inert gas into a confined space forces out (purges) flammable or explosive vapours or gases. Fresh air replaces the inert gas before the workers enter the space.

Safety Hazards

Safety hazards include but are not limited to:

- entry and exit points;
- machinery hazards where the worker may be trapped (e.g. drive belts, augers, mixers, agitators, conveyor belts, etc.);
- piping and distribution systems (e.g. steam lines, liquid distribution lines);
- residual chemicals (e.g. dry material may remain stuck to the surface of storage tanks not completely emptied or purged);
- engulfment (dry bulk materials such as grain, sand, flour, fertilizer and sawdust can trap or bury workers);
- uncontrolled introduction of steam, water or other gas or liquid;
- everyday electrical equipment usually thought to be safe (e.g. flashlights);
- visibility (improperly or inadequately lit spaces);
- physical obstacles (e.g. cross bracing, baffle plates, piping);
- walking or working surfaces (e.g. hot or slippery);
- traffic around the confined space;
- temperature extremes (e.g. working in freezers or boilers or areas with steam or heat distribution pipes);
- humidity;
- vibration (e.g. equipment or tools such as impact hammers, motors, etc.);
- radiation (e.g. ultraviolet or infrared sources from welding, cutting, brazing or x-ray systems).

Work-related Hazards

Work-related hazards are hazards that are inherent and unavoidable in the course of a person's work. A fire hazard that exists while welding is an example of a confined space work-related hazard.

Human Hazards

Human hazards are hazards that exist because of the physical and mental condition of a worker. For example, workers may have phobias (e.g. claustrophobia, fear of heights) that interfere with their ability to work in confined spaces or they may require use of bulky PPE causing heat stress and fatigue.

As a result of human physical and mental hazards, some workers cannot work in confined spaces. Employers should consider and address the physical and mental condition of workers during the hazard assessment process. When necessary, a fitness-to-work assessment done by a qualified professional can determine if it is safe for workers to perform work in a confined space.

For an example *Confined Space Hazard Assessment Work Sheet* see Appendix B

WORKER TRAINING

Work in confined spaces requires effective training programs that ensure everyone is aware of the hazards and safe work practices. Supervisors, workers and first aid providers must receive training applicable to the specific confined space entry. Trainers hired from outside the organization or qualified trainers from within an organization can provide training.

An employer confined space code of practice may contain specific training requirements for confined space entry work or it may reference other employer documents that address worker training. In either scenario, an employer confined space code of practice should document or reference:

TRAINER REQUIREMENTS

Trainers must be knowledgeable about:

- the confined spaces associated with the work activity;
- hazards associated with the work activity;
- safe work procedures;
- how to test and monitor the atmosphere in the confined space;
- PPE required for the work activity;
- first aid training requirements; and
- emergency first aid and response and rescue.

WORKER TRAINING REQUIREMENTS

Worker training requirements must include the following for each category of worker entering the confined space:

- safe work procedures for entry into the confined space;
- safe work procedures for working inside the confined space;
- hazard assessment;
- an understanding of how to properly use control measures to protect workers (engineering controls, administrative controls or PPE); and
- what to do in an emergency.

TRAINING REQUIREMENTS FOR WORKERS WHO PROVIDE FIRST AID AND EMERGENCY RESPONSE AND RESCUE

Workers providing first aid in an emergency must receive appropriate first aid training. Emergency response and rescue training can be part of a company's overall emergency preparedness and response plans, but must address how to safely remove injured workers from a confined space.

In addition to information detailing training requirements for trainers and workers, an employer confined space code of practice must also include procedures for evaluating the effectiveness of training and timelines or criteria for retraining.

ENTRY PERMIT SYSTEM

A confined space entry permit provides information about required work, work conditions and hazards of a confined space. An employer ensures that all requirements for confined space entry are addressed when all sections on an entry permit system are complete. Employers may use a generic format if workplace confined spaces are similar and have similar hazards. However, an entry permit specific to that confined space must be issued if the confined space is not normally entered.

A CONFINED SPACE ENTRY PERMIT MUST CONTAIN:

- a list naming each worker entering the confined space, the reason for entry and the name of the person monitoring their work;
- the location of the confined space;
- the time period the entry permit is valid;
- the nature of the work being done in the confined space;
- safety precautions taken; and
- the supervisor's signature.

Employers can include additional information if they believe the information is necessary or is a benefit to worker safety.

For an example *Confined Space Entry Permit* see Appendix C

ENTRY AND EXIT

Safe entry and exit from a confined space is as important as safe confined space work practices. Employers must ensure they are providing their workers with suitable tools for entering and exiting a confined space during normal conditions and in an emergency. An example of a suitable tool for entering and exiting a confined space is a ladder used to enter and exit a containment tank.

Employers must also consider the size of openings used to enter and exit a confined space. Best practice recommends that entrance and exists be at least 60 cm (24 inches) in diameter and have openings that can lock in an open position, preventing workers from getting trapped inside the confined space.

Employers must provide their workers with PPE appropriate to safely enter and exit the workplace.

HOT WORK IN CONFINED SPACES

Working in a confined space can be very dangerous. Hot work can be particularly dangerous if the proper precautions are not taken.

Hot work is work that produces a source of ignition, like flame from a welder's torch.

Employers and workers must properly purge, ventilate or inert the confined space when doing hot work. Do this before starting the hot work to reduce the level of combustible dusts, mists or other airborne particles.

The following precautions must be taken before performing hot work:

- purge, ventilate or inert the space to maintain an atmosphere less than 5% of the lowest explosive limit;
- continuously purge, ventilate or inert the space to maintain an oxygen concentration less than 23%;
- continuously monitor the atmosphere;
- write an entry permit describing the type of hot work occurring and the procedures in place to ensure worker safety;
- create an effective warning system and quick exit procedure should the atmosphere move toward unsafe levels; and
- identify and make available proper PPE for use when performing hot work in confined spaces

RESCUE PLANS, PROCEDURES AND EQUIPMENT

Worker safety is always paramount. Therefore, workers must not enter or operate inside a confined space if proper safety procedures are not in place.

Employers are responsible to develop emergency rescue plans prior to workers entering a confined space. Emergency rescue plans and procedures are specific to individual confined spaces, depending on the hazards noted during the confined space hazard assessment. In some cases confined space entry results in an emergency situation requiring emergency response personnel to enter the confined space. If there is the potential for such a scenario, the employer confined space code of practice and the entry permit must include information about emergency PPE requirements and necessary rescue actions. Employer emergency rescue plans cannot rely on fire or ambulance services as the primary response method for confined space emergencies.

Emergency rescue plans must indicate whether rescue teams are available at the confined space entry or at another location. Regardless of their location, emergency response teams must be within a reasonable distance to quickly respond to any emergency.

Employers must ensure that first aid and emergency response and rescue workers receive proper training as part of an overall workplace emergency plan. Emergency training for workers must include:

- first-aid and cardiovascular resuscitation;
- knowledge of emergency plans and procedures; and
- knowledge of how to use confined space rescue equipment.

While the *Occupational Health and Safety Regulations* do not require specific emergency rescue training for worker, employers should provide their workers with the knowledge necessary to ensure the safe rescue of anyone needing quick removal from a confined space.

CHECKLIST FOR A WRITTEN HAZARDOUS CONFINED SPACE ENTRY PLAN

A hazardous confined space entry plan must be in writing and must include:

- tests or measurements necessary to monitor for oxygen deficiency or enrichment or the presence and hazardous concentration of flammable or explosive substances;
- identification of other hazards that could be present in the hazardous confined space and could endanger a worker in the space;
- means, if any, of isolating the hazardous confined space;
- means, if any, of ventilating the hazardous confined space;
- procedures to enter, work in and exit from the hazardous confined space safely;
- availability, location and proper use of personal protective equipment;
- the rescue procedures to be followed, including the number and duties of personnel and the availability, location and proper use of equipment;
- the means to maintain effective communication with a worker who has entered the hazardous confined space; and
- the availability, location and proper use of any other equipment that a worker could need to work safely in the hazardous confined space.

APPENDIX A – EXAMPLE EMPLOYER CODE OF PRACTICE WORKSHEET

Employer Confined Space Code of Practice Work Sheet

Date: _____

Company Name: _____

Work Site: _____

Confined Space Location: _____

Confined Space Identification Number: _____

Employer Confined Space Code of Practice Prepared By:

Name: _____ Telephone Number: _____

Description of the Confined Space:

Work planned in the Confined Space:

Description of Hazards:

Atmospheric: _____

Safety: _____

Work Procedures:

_____

Human Factors:

_____

Employer Confined Space Code of Practice Work Sheet

Worker Training Requirements

How many workers work in the confined space?: _____

Describe worker training requirements/ courses:

_____

_____

_____

_____

_____

Entry Permit

Attach sample entry permit to this employer confined space code of practice.

Work Procedures

1. Testing the atmosphere

Test for: _____

Equipment: _____

Equipment calibration: _____

Test frequency:

Before entry _____

During entry _____

After entry _____

Other : _____

_____

_____

_____

2. Entry into the confined space

Who has authorization to enter?

_____

_____

Employer Confined Space Code of Practice Work Sheet

Work Procedures Continue

Entry/exit procedure:

3. Description of work to be done in confined space:

4. List of required tools and equipment:

Employer Confined Space Code of Practice Work Sheet

5. Required personal protective equipment:

Respiratory Protective Equipment	Type
Protective Clothing	Type
Footwear	Type
Headwear	Type
Protective Eyewear	Type
Protective Eyewear	Type
Gloves	Type

Other:

If other describe

_____

_____

_____

_____

6. Traffic hazards

Are there any traffic hazards related to this confined space entry? Yes □ No □

If yes, describe controls:

_____

_____

_____

_____

Ventilation, Purging, Inerting, Isolation

Ventilation Yes □ No □

If yes, describe the procedures:

Employer Confined Space Code of Practice Work Sheet

Purging

Yes ☐ No ☐

If yes, describe the procedures:

Inerting

Yes ☐ No ☐

If yes, describe the procedures:

Isolation

Yes ☐ No ☐

If yes, describe the procedures:

Employer Confined Space Code of Practice Work Sheet

Monitoring Worker

Must a monitoring worker be physically present at the confined space? Yes ☐ No ☐

If no, the monitoring workers must be near the confined space. What is the maximum distance a monitoring worker can be from the confined space?

What are the monitoring worker's duties?

What actions does the monitoring worker take in an emergency?

Describe communication procedures:

Employer Confined Space Code of Practice Work Sheet

Emergency Response Procedures:

Emergency Contact Numbers:

_____ _____

_____ _____

Describe emergency procedures:

List of rescue equipment (include personal protective equipment for rescue workers):

Worker training requirements:

Record keeping requirements:

Recordkeeping:

Code of Practice reviewed by: _____

Code of Practice update frequency: _____

Describe any past incidents that have occurred in this confined space entry:

Employer Confined Space Code of Practice Work Sheet

Has an emergency rescue been required during an entry into this confined space? If yes, explain.

Actions taken to prevent future incidents:

Other comments:

APPENDIX B – EXAMPLE: CONFINED SPACE HAZARD ASSESSMENT WORKSHEET

Confined Space Hazard Assessment Work Sheet

Location of work: _____

Description of tasks for completion: _____

_____

_____

_____

Entry date: _____

Atmospheric Hazards	**Yes**	**No**
Explosive atmosphere (gases, vapours, fine dusts)		
Oxygen deficiency		
Oxygen enrichment		
Toxic gases or vapours		
Dusts, mists, fumes		
Smoke		
Biological agents		
Other		

If yes to 1 or more atmospheric hazards, please provide specific information about those hazards

_____

_____

Safety Hazards	**Yes**	**No**
Entry/Exit		
• Small/narrow openings		
• Steep openings		
• Entry/Exit at height		
• Angled openings		
• Exits into traffic or machinery		
Machinery/mechanical equipment		
Piping and distribution systems		
Residual chemicals or materials		

Confined Space Hazard Assessment Work Sheet

Safety Hazards	**Yes**	**No**
Pressure systems		
Electrical hazards		
Poor Visibility		
Physical obstacles		
Walking/working surfaces		
Temperature extremes		
• Heat stress		
• Cold stress		
Humidity		
Noise		
Vibration		
Radiation Type?		
Other Type?		
Work Related Hazards		
Hot work Type?		
Sandblasting		
Bonding operations		
Grinding		
Cutting		
Use of solvents, corrosive chemicals or cleaners		
Use of paint/spray painting		
Repairs		
Installation		
Inspection		
Emergency rescue/first aid		

Human Factors

Comments: _____

_____

_____

APPENDIX C – CONFINED SPACE ENTRY PERMIT

CONFINED SPACE ENTRY PERMIT Permit number ________ Date: ________

Location and Description of Confined Spaces

____

____

Work Planned in the Confined Space

____

____

Scheduled Entry Start Time:	Scheduled Exit Time:
____________________ Day Date Time (am or pm)	____________________ Day Date Time (am or pm)

Workers Entering:

Worker or Monitor* Name	Initial	Entry Time (am or pm)	Exit Time (am or pm)

☐ **Check if a monitoring worker must be present before starting work in the confined space.**
*A monitoring worker must sign and be present if the above box is checked.

Pre-Entry Authorization (Check items below, applicable to your confined space entry permit)

Oxygen-Deficient Atmosphere	☐	Engulfment	☐	Energized Electric Equipment	☐
Oxygen-Enriched Atmosphere	☐	Toxic Atmosphere	☐	Entrapment	☐
Hot Work (Welding/cutting)	☐	Flammable/Explosive Atmosphere	☐	Hazardous Chemical	☐

Other______________________

SAFETY PRECAUTIONS

Self-Contained Breathing Apparatus	☐	Lifelines	☐	Signs Posted	☐
Air-Line Respirator	☐	Respirators	☐	Clearance Secured	☐
Flame Resistant Clothing	☐	Lockout/Tagout	☐	Lighting	☐
Ventilation	☐	Fire Extinguishers		Ground Fault Interrupter	☐
Protective Gloves	☐	Barricade Area	☐	Other____________________	

Remarks

ENVIRONMENTAL CONDITIONS

Required Tests	**Date/Time**	**Re-Testing**	**Date/Time**
Oxygen ________________ %	_________ a/p	Oxygen ________________ %	_________ a/p
Lower Explosive Limit ______ %	_________ a/p	Lower Explosive Limit ______ %	_________ a/p
Toxic Atmosphere __________________________		Toxic Atmosphere __________________________	
Instruments Used ___________________________		Instruments Used ___________________________	

Signature of worker conducting safety checks____

☐ **ENTRY AUTHORIZATION** – All actions and/or conditions for safe entry have been performed

Person in charge of entry ____

☐ **ENTRY CANCELLATION** – Entry has been completed and all entrants have left the space

Person in charge of entry ____

APPENDIX D – OHS REGULATIONS

The New Occupational Health and Safety Regulations are in effect in the Northwest Territories as of June 1, 2015 and March 29, 2016 in Nunavut. The Regulations PDF document is streamlined to make it easier to find information relating to specific workplace topics.

TABLE OF CONTENTS

The *Table of Contents* available at wscc.nt.ca under OHS Regulations Table of Contents gives an overview of the regulations.

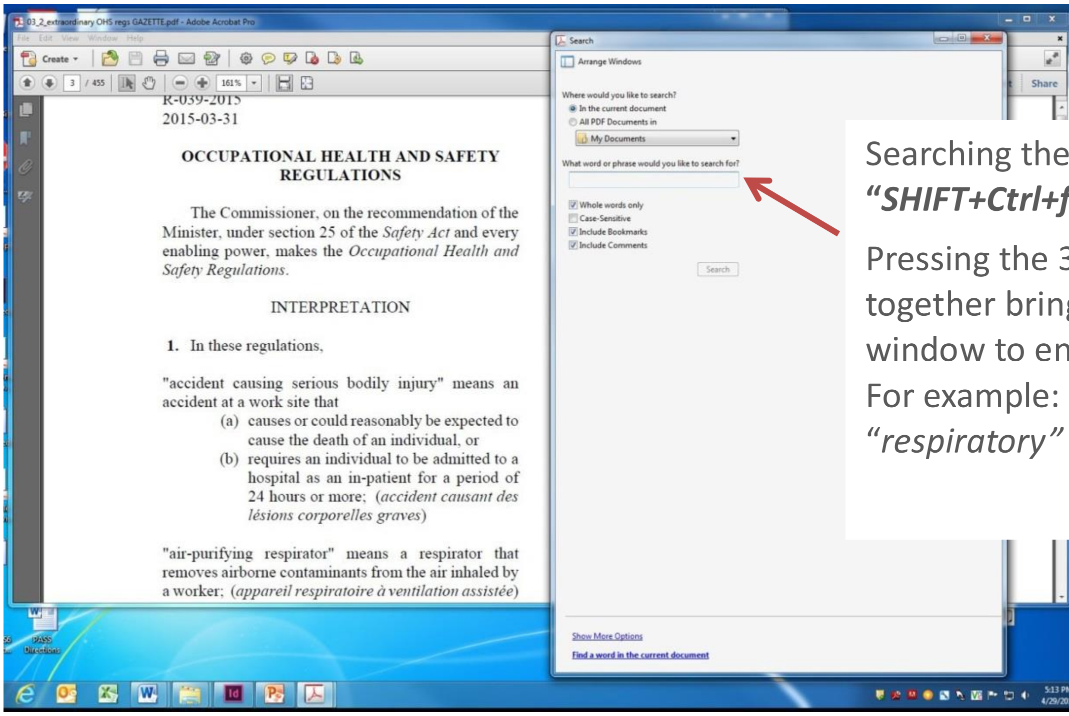
The *OHS Regulations* start with preliminary matters of interpretation and applications. They are organized into Parts to relating to types of requirements, for example, *Part 2: REPORTING*, and specific workplace topics, for example, *PART 18: CONFINED SPACE ENTRY.*

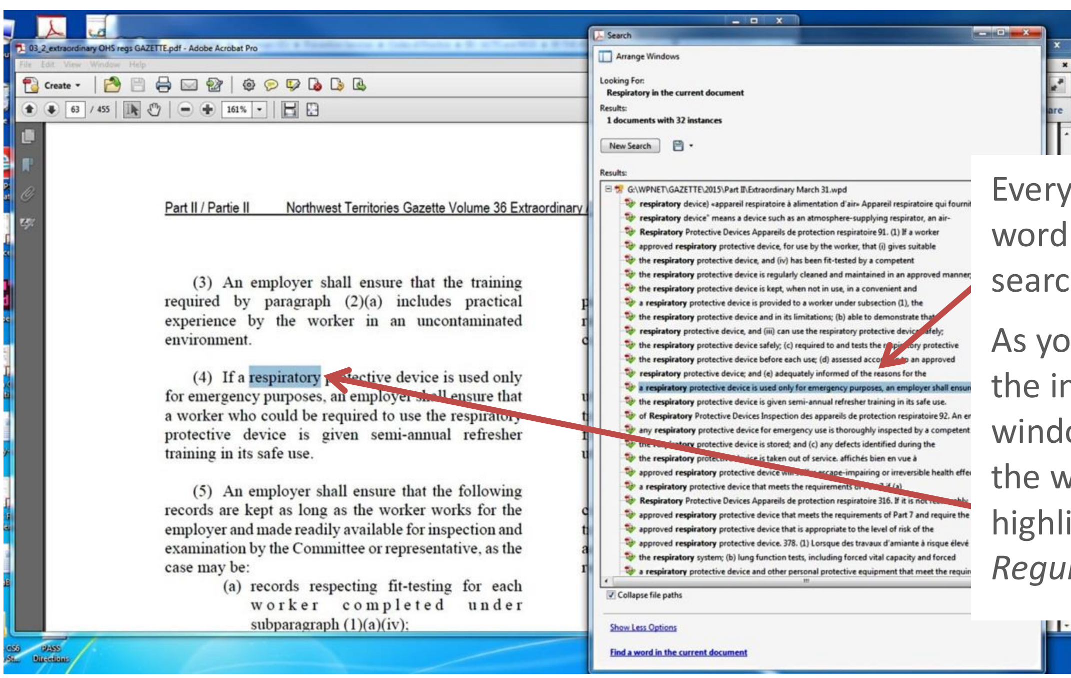
TABLE OF CONTENTS **TABLEAU DES MATIÈRES**

A collapsed view of the table of contents shows the Parts and the numbered regulations sections that fall under each part.

READING THE OHS REGULATIONS

The OHS Regulations are available for download at wscc.nt.ca. The PDF has a searchable function that allows users to enter a topic and search the entire document for every instance of that word or phrase.





APPENDIX E – OHS REGULATION WRITTEN PLANS, RECORDS, AND LOGS

Documenting work activity helps ensure employers, supervisors and workers know and follow safe procedures; properly inspect and maintain equipment; and have appropriate training to perform their work. Documentation required by the Regulations must be written and available to workers at work sites and submitted to the Joint OHS Committee.

PLANS

PART 3
GENERAL DUTIES

- Occupational Health and Safety Program
- Plan for the control of hazardous substances
- Plan for training workers

PART 6
GENERAL HEALTH REQUIREMENTS

- Exposure Control Plan

PART 8
NOISE CONTROL AND HEARING

- Hearing Conservation Hearing

PART 9
SAFEGUARDS, STORAGE, WARNING SIGNS AND SIGNALS

- Fall Protection Plan
- Traffic Control Plan

PART 18
CONFINED SPACE ENTRY

- Entry Plan

PART 20
DIVING OPERATIONS

- Diving Plan
- Diving Contingency Plan

PART 24
ASBESTOS

- Asbestos Control Plan

PART 26
FIRE AND EXPLOSION HAZARDS

- Fire Safety Plan

PART 32
ADDITIONAL PROTECTION FOR FIREFIGHTERS

- Plan for Response to Emergency Incident

RECORDS

Part 2
REPORTING

- Annual Statistical Report*
- Notice of Accident Causing Serious Bodily Injury*
- Notice of Dangerous Occurrence*

PART 6
GENERAL HEALTH REQUIREMENTS

- Cleaning and Maintaining Ventilation System

PART 8
NOISE CONTROL AND HEARING CONSERVATION

- Measurement of Noise Levels
- Daily Exposure Exceeding 85 dBA L_{ex}

PART 9
SAFEGUARDS, STORAGE, WARNING SIGNS AND SIGNALS

- Designated Signalers
- Locking Out

PART 11
POWERED MOBILE EQUIPMENT

- Inspection and Maintenance

PART 12
SCAFFOLDS, AERIAL DEVICES, ELEVATING WORK PLATFORMS AND TEMPORARY SUPPORTING STRUCTURES

- Maintenance and Inspection

PART 13
HOISTS, CRANES AND LIFTING DEVICES

- Log Book

PART 20
DIVING OPERATIONS

- Diver's Personal Log

PART 21
CHEMICAL AND BIOLOGICAL SUBSTANCES

- Precautions for Certain Substances

PART 23
RADIATION

- Records of Dose

PART 24
ASBESTOS

- Inspection
- Labelling and Placarding
- Blasting Enclosures

PART 26
FIRE AND EXPLOSION HAZARDS

- Flammable or Explosive Substance in Atmosphere
- Hot Work

PART 31
ADDITIONAL PROTECTION FOR HEALTH CARE WORKERS

- Ethylene Oxide Sterilizers

** Employer must submit to the Chief Safety Officer and provide copies to the Joint OHS Committee, removing names of the workers from the document. See* Part 2 *of the OHS Regulations for other reporting* requirements.

ACKNOWLEDGEMENTS

The Workers' Safety and Compensation Commission of the Northwest Territories and Nunavut appreciates the participation of stakeholders in occupational health and safety developments.

If you have any question or comments, please contact Prevention Services at

1-867-920-3820 or 1-800-661-0792.

Codes of Practice, other safety publications, the *Safety Acts* and related regulations are available on WSCC websites:

Northwest Territories wscc.nt.ca

Nunavut wscc.nu.ca

Code of Practice

Employer Guideline
CONFINED SPACES

Workers' Safety & Compensation Commission | ᐃᖃᓗᐊᕐᓂᖅ ᐊᑦᑕᓇᖅᑐᓂᒃ ᐊᑐᕐᓇᖅᑐᒃᑯᓗᒃ ᖃᐅᔨᓴᖅᓯᒪᔪᖅ

WSCC Emergency Reporting
24-hour Incident Reporting Line

1 800 661-0792