CONFINED SPACES
Standards & Enforcement in Construction

By Daniel Gibney and Bryan Seal

CONFINED SPACES maintain a high prevalence across numerous sectors within the construction industry, which present significant acute hazards to life and health. Industries in which confined space entry may be required include sewer and water, highway, bridge, commercial and industrial building construction. OSHA designates an area as a confined space when three primary conditions are met:

1. must be large enough for a worker to successfully enter the space to conduct job operations,
2. must have limited means of ingress and egress, rendering it difficult to exit in an emergency situation, and
3. must not be designed for continuous employee occupancy.

Common examples of confined spaces in the construction industry include storm drains, manholes, crawl spaces and storage tanks.

KEY TAKEAWAYS

- **Confined spaces are widespread across the construction industry and present severe, often fatal hazards driven by limited entry and exit, poor natural ventilation, and the potential for toxic, flammable or oxygen-deficient atmospheres.**
- **Permit-required confined spaces represent an elevated risk to workers, as atmospheric hazards, engulfment potential and work-induced conditions can rapidly escalate into life-threatening emergencies without rigorous controls and planning.**
- **This article discusses the primary confined space hazards in construction, including atmospheric dangers, engulfment risks and the unique challenges associated with emergency response and rescue operations.**
- **This article discusses the regulatory framework and enforcement trends surrounding OSHA's 29 CFR 1926 Subpart AA, examining inspection and violation data to identify common compliance failures and opportunities to better protect confined space workers.**

Permit-Required Confined Spaces

While traditional confined spaces may present inherent hazards and complications to occupational EHS, permit-required confined spaces present unique life safety threats that require careful and prompt management to prevent serious injuries and fatalities. To be classified as a permit-required confined space, an area must first meet each of the three defining requirements of a confined space. A permit-required confined space must also present one or more of the following hazards (NCDOL, 2012):

1. contains or has the potential to contain a hazardous atmosphere,
2. contains a material that has the potential for engulfing an entrant,
3. has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section, or
4. contains any other recognized serious safety or health hazards.

These hazards may be present under normal conditions within the space either by design or through normal environmental factors. For example, a product stored inside a confined space may naturally cause changes to atmospheric conditions inside the space. The product's physical characteristics may create a high risk of engulfment or entrapment. Natural reactions inside the space, including oxidation (rusting) or bacterial metabolic processes, may also naturally impact atmospheric conditions (NCDOL, 2012), causing the space to meet permit-required confined space criteria. The demands of work operations inside a confined space, such as hot work or equipment operation, may cause the permit-required criteria to be met in confined spaces that would otherwise not be considered permit-required. In construction settings where

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confined space work is required, employers must ensure adherence to 29 CFR 1926 Subpart AA, Confined Spaces in Construction.

Atmospheric Hazards

One of the most prominent dangers to life and health while conducting confined space work is the presence of hazardous atmospheric conditions. At sea level, the expected concentration of oxygen found in ambient air is approximately 20.9%. Oxygen concentrations within confined spaces are highly susceptible to deviations. Under 29 CFR 1910.134, OSHA defines oxygen deficiency as an atmosphere with an oxygen concentration below 19.5%. Beneath this threshold, workers begin to exhibit signs of hypoxia. At oxygen concentrations below 16%, exposed workers start to develop rapid fatigue and decreased muscle coordination. At concentrations below 10%, nausea, vomiting and loss of consciousness are likely to occur (Rom, 1992). Even if the oxygen concentration of a confined space is greater than the oxygen deficiency threshold, any deviation from 20.9% indicates a potentially dangerous condition. A 0.1% decrease in oxygen concentration may indicate the presence of a toxin, carcinogen or other hazardous chemical (Edwards et al., 2022).

Simple asphyxiants exclusively cause asphyxiation by displacing oxygen levels in the surrounding atmosphere. Simple asphyxiants do not produce toxic effects in the human body upon inhalation. The most common simple asphyxiants encountered include carbon dioxide and nitrogen (Tan & Wang, 2005). Carbon dioxide has a molecular weight of 44.01 g/mol (NIST, n.d.), which is greater than the average molecular weight of ambient air (28.96 g/mol; ACGIH, 2019). Molecular weight is directly related to vapor density, which is the molecular weight of pure vapor or gas compared to an equal volume of dry air of the same temperature and pressure (Edwards et al., 2022). With a molecular weight greater than air, carbon dioxide subsequently has a greater vapor density, causing it to sink to low-lying areas. If present inside a confined space or low-lying area, carbon dioxide does not readily dissipate without implementing ventilation equipment. While not primarily regarded as simple asphyxiants, some hydrocarbons including propane and acetylene create the same effects in sufficient concentrations. In confined spaces, heating equipment and cutting torches may introduce these hydrocarbons into the atmosphere.

Chemical asphyxiants react with biological processes within the human body and interrupt the delivery and utilization of oxygen (Tan & Wang, 2005). Chemical asphyxiants can produce life-threatening health effects at significantly lower concentrations than simple asphyxiants. The most frequently encountered chemical asphyxiant in the occupational setting is carbon monoxide. Upon inhalation, carbon monoxide binds to hemoglobin in the blood, the same method by which oxygen is absorbed and transported to cellular tissues. Hemoglobin has an affinity for carbon monoxide 250 times greater than oxygen (Rose et al., 2017). Once carbon monoxide successfully binds to hemoglobin, oxygen molecules cannot be transported to bodily tissues, resulting in chemical asphyxiation. Carbon monoxide is a direct product of incomplete combustion, meaning that use of any type of combustion engine (including saws and other nonelectronic power tools) and any incomplete combustion during hot work operations produces a buildup of carbon monoxide.

In the construction industry, confined space workers may be exposed to numerous acutely toxic chemicals upon inhalation. Hydrogen sulfide, often referred to as "sewer gas," is a common toxic gas encountered during confined space operations, and is frequently found in manholes, sewers and other below-grade confined spaces. OSHA (n.d.c) regulates hydrogen sulfide exposure to a ceiling limit of 20 ppm. Hydrogen sulfide harms the nervous system, liver and kidneys (Bhomick & Rao, 2014). Hydrogen sulfide is also known for producing olfactory fatigue, rendering its odor alone as an unreliable method of detection.

Due to the minimal natural ventilation inherent with confined spaces, a space may risk developing a flammable or explosive atmosphere through the demands of work operations or unique characteristics of a specified confined space. When flammable gases or vapors mix with air, the mixture may become ignitable if the concentration reaches its flammable range. Using flammable gases or liquids within a confined space may create an atmosphere that burns rapidly upon contact with an ignition source.

The flammability risk often depends on the flammable range of the gas or vapor. The wider the flammable range of a specified gas or vapor, the greater the hazard. Methane is the primary ingredient in natural gas, making up at least 65% of the natural gas composition used by consumers (Eser, n.d.). According to the National Research Council Committee on Toxicology (1984), methane has a flammable concentration range of 5.3% to 14%. Acetylene, which may be used during hot work operations, possesses an extremely wide flammable range. Acetylene's lower explosive limit is 2.5%, and it is capable of undergoing explosive decomposition reactions at 100% concentration (MSHA, n.d.). While the properties of an individual gas or vapor determine its specific hazards, any flammable or potentially flammable atmosphere can become deadly if managed improperly.

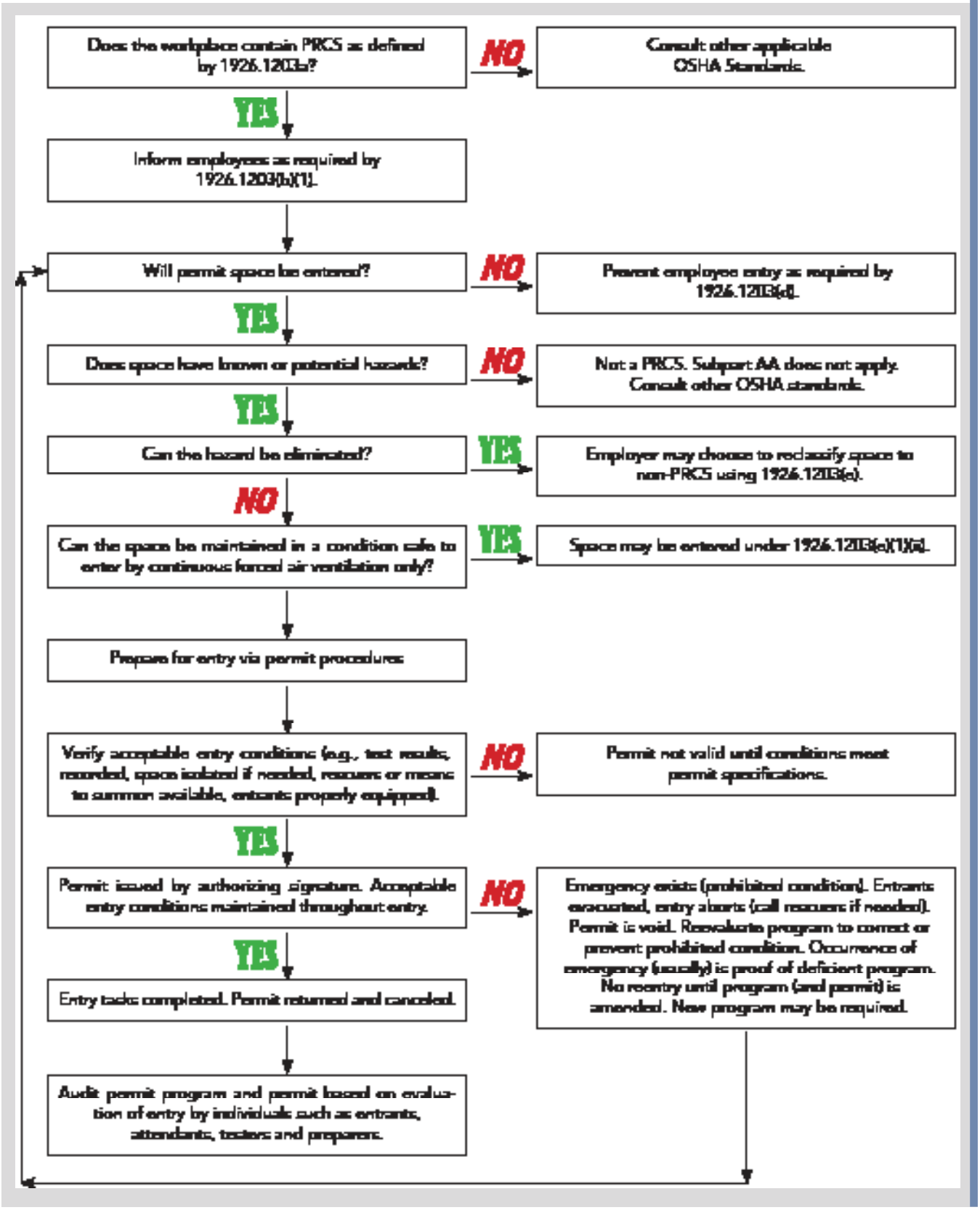
Some hot work operations may require the use of supplemental oxygen cylinders. Improper use of supplemental oxygen during confined space operations may release excess oxygen into the space's atmosphere. OSHA (2015) defines oxygen enrichment as an atmosphere that contains more than 23.5% oxygen by volume. As an oxidizer, oxygen does not burn; however, it supports the combustion of other flammable or combustible materials. All potential fuel sources ignite more readily and burn at high intensities inside an oxygen-enriched atmosphere.

Engulfment

Another significant life safety and health threat to confined space workers is the potential for engulfment by materials inside the space. Confined spaces such as sewers, manholes and product storage containers may be filled with liquid or solid materials. According to 29 CFR 1926.1202, engulfment is the surrounding and effective capture of a person by a liquid or finely divided

FIGURE 1

DECISION FLOW CHART ON PRCS IN CONSTRUCTION



(flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing or suffocation. Nearly any liquid or flowable solid may engulf a confined space worker when conditions allow. In sewer construction work, the elimination of engulfment hazards is frequently not feasible to attain.

Rescue & Emergency Response

A significant danger to the safety and health of confined space personnel is the high risk brought on by confined space emergencies and rescue situations. Confined space incidents are notorious for resulting in the fatalities of the entrant(s) requiring rescue and personnel attempting to conduct rescue operations. An article published in *Safety Science* compiled data from numerous confined space fatality studies (Selman, et al. 2019). One of these studies compiled data from the Census of Fatal Occupational Injuries to review all confined space fatalities in the U.S. from 1997 to 2001. The study found that a total of 458 confined space fatalities occurred during this time, 25 of which included rescuer fatalities (Selman et al., 2019).

A separate study included in the article compiled data from the National Traumatic Occupational Fatalities. This study found that from 1980 to 1989, a total of 670 total confined space fatalities occurred across 585 incidents in the United States (Selman et al., 2019). While data did not differentiate between entrant and rescuer deaths, 72 of the 585 incidents were responsible for two or more deaths (Selman et al., 2019). A frequent cause of multiple fatalities at confined space incidents is the attempted rescue by untrained or unauthorized workers. This includes improperly trained rescuers, unauthorized entrants and attendants attempting to make rescues that require entry.

Under 29 CFR 1926.1211, employers are required to select a confined space rescue service that is properly trained and equipped and capable of completing the rescue in an acceptable time frame for the hazards present. The two most common options employers choose are calling the fire department or training company personnel in confined space rescue operations. Each of these options presents unique difficulties.

Sites that plan to dial 9-1-1 upon developing a confined space emergency rely entirely on the quantity and capabilities of nearby emergency services. These resources may change drastically based on the state, county and specific geographic region in which the jobsite is located. NFPA 1710 and 1720 provide standards for the organization and deployment of career and volunteer fire service personnel. These standards cover fire suppression, emergency medical services and special operations incidents. Special operations incidents require special training and equipment, including hazardous materials, water, trench and confined space rescue. NFPA 1710 states that career fire departments should ensure that they have adequate personnel, equipment and resources to deploy for confined space incidents. Typically, career fire departments are equipped with sufficient staffing and equipment to successfully manage confined space rescue incidents;

TABLE 1

SUMMARY OF TOP 10 CITED INDUSTRIES BY NAICS CODE

Summary of top 10 most cited industries by NAICS code, January 2015 to January 2025. Percentages are calculated using a total of 518 inspections.

NAICS code	Description	Frequency (#)	Percentage
237110	Water and sewer line and related structures construction	120	23.2%
236220	Commercial and institutional building construction	65	12.5%
238220	Plumbing, heating and air-conditioning contractors	44	8.5%
238910	Site preparation contractors	37	7.1%
238320	Painting and wall covering contractors	26	5.0%
238210	Electrical contractors and other wiring installation contractors	22	4.2%
238990	All other specialty trade contractors	21	4.1%
237310	Highway, street and bridge construction	19	3.7%
238310	Drywall and insulation contractors	11	2.1%
562910	Remediation services	10	1.9%
Total		375	72.4%

however, equipment may be housed in a specialized location, extending the time of response greater than a non-special operations incident.

NFPA 1720 standards require that volunteer fire departments ensure adequate training and equipment for any special operations services they choose to provide. This standard does not require any volunteer departments to possess confined space rescue capabilities. Instead, volunteer departments may organize automatic mutual aid agreements for other jurisdictions to respond with their confined space rescue team. Especially in highly rural areas, confined space rescue personnel and equipment may not be nearly as readily available as in urban areas. The U.S. is undergoing a staffing crisis for volunteer fire service personnel. In 1984, there were 897,750 volunteer firefighters nationwide. By 2020, this number dropped to 676,900, while the total call volume tripled (NVFC, 2022). In regions predominantly staffed by volunteers, adequate availability of personnel is highly dependent on the time of day and week. Therefore, while OSHA requires rescue personnel to be able to provide sufficient resources in a timely manner, unfortunately, many emergency service organizations may be unable to fulfill these requirements.

The development of an on-site confined space rescue team removes uncertainties in ensuring adequate manpower and the possibility of an excessively delayed response time. However, developing an on-site rescue team requires significant forethought and planning. Internally trained rescue personnel must be capable of meeting the same training and operational standards set forth by 29 CFR 1926.1211. Employers are also required to pay for their personnel training and purchase their own confined space rescue equipment, which may be difficult for smaller companies.

Regulation

The first efforts to create a federal construction industry confined space standard were made in 1980 when OSHA issued an advance notice of proposed rulemaking (OSHA, 2015). Despite receiving 75 comments on the advance notice of proposed rulemaking, OSHA did not take further action to develop a new standard.

In 1993, OSHA issued a final ruling for federal confined space regulations. These regulations were found under 29 CFR 1910.146, which were exclusively under OSHA's general industry standard. Soon after, OSHA submitted a draft for a proposed confined space standard in the construction industry (OSHA, 2015). The proposed standard was developed due to concern that 29 CFR 1910.146 was ineffective at managing the confined space hazards associated with the construction industry. Following the submission of the proposed standard, the standard underwent a lengthy review process requiring OSHA to submit a new draft in 1998.

Years later, on Aug. 3, 2015, OSHA's final ruling of new federally enforceable regulations on confined spaces in the construction industry became effective. The updated legislation introduced Subpart AA, an entirely new confined space regulation under 29 CFR 1926. Before this ruling, the only piece of confined space legislature in the construction industry was a broad standard indicating that employees should be trained on confined space hazards, necessary precautions and PPE use.

The new 29 CFR 1926 Subpart AA was written to meet the same major requirements as 29 CFR 1910.146 while considering the provisions needed for construction-specific legislation. OSHA reviewed previous letters of interpretation from the general industry confined space standard to ensure clear language, avoiding difficulties in enforcement. The new subpart accounted for technological and equipment advancements, allowing future hazards to be controlled appropriately. Before the implementation of the final rule, OSHA estimated that 29 CFR 1926 Subpart AA would reduce confined space fatalities in the construction industry by 96% and reduce direct costs in the U.S. construction industry by $93.6 million each year (OSHA, 2015).

In summary, 29 CFR 1926 Subpart AA consists of 13 standards outlining the legal requirements of construction sector employers. The subpart applies to all OSHA-accountable construction disciplines and sites featuring one or more confined spaces. The subpart does not apply to industries that are covered under other subparts within 29 CFR 1926, including excavations, underground construction, caissons, coffer dams, compressed air and diving. Subpart AA outlines all standard operating requirements employers are required to uphold during confined space operations (Figure 1, p. 22). It requires employers to develop permit-required confined space (PRCS) programs and determines the required objectives such programs must accomplish. Subpart AA determines the required content included in a confined space permit, along with the expected procedures toward successful permit implementation. Employers are also required to provide training for all employees working on jobs covered under the OSHA confined spaces in construction standards. Subpart AA

TABLE 2

VIOLATIONS CITED IN CONSTRUCTION BY TYPE

Summary of 29 CFR 1926.1200 violations cited in the construction industry by inspection type, January 2015 to January 2025.

Inspection type	Frequency (#)	Percentage
Planned	184	35.5%
Referral	111	21.4%
Complaint	88	17.0%
Fatality/catastrophe	63	12.2%
Unprogrammed-related	46	8.9%
Programmed-related	15	2.9%
Accident	4	0.8%
Unprogrammed-other	3	0.6%
Follow-up	2	0.4%
Program other	2	0.4%
Total	518	100.0%

TABLE 3

TOP 10 CITED VIOLATIONS OF 29 CFR 1926.1200

Summary of top 10 most frequently cited violations of 29 CFR 1926.1200, January 2015 to January 2025, which accounted for approximately 55% of all violations involving PRCS.

Standard	Description	Frequency (#)	Percentage
1926.1203(a)	Identification of all on-site confined spaces	300	18.9%
1926.1207(a)	Duty of employer to provide training	138	8.7%
1926.1203(d)	Employer requirements for identified confined spaces	95	6.0%
1926.1205(a)	Permit preparation before entry	72	4.5%
1926.1203(b)(1)	Confined space signage	63	4.0%
1926.1203(e)(2)(ii)	Air monitoring before entry	54	3.4%
1926.1204(b)	Program requirements to identify and evaluate hazards before entry	48	3.0%
1926.1204(c)	Program requirements to implement safe entry practices and procedures	43	2.7%
1926.1204(i)	Program requirements for summoning rescue and emergency services	40	2.5%
1926.1203(e)(2)(i)	Guarding of confined space openings	27	1.7%
Total		880	55.5%

outlines all duties and responsibilities delegated to authorized entrants, attendants and entry supervisors. Confined space permits are required to include procedures for summoning or providing rescue personnel. Lastly, 29 CFR 1926.1211 provides minimum requirements for rescuers eligible to fulfill the emergency response role in a confined space permit.

OSHA Inspection Data

All OSHA inspections between January 2015 and January 2025 that resulted in violations of the confined spaces in construction standard, 29 CFR 1926.1200, were downloaded from OSHA's Enforcement Data website. The corresponding violation data was downloaded on Jan. 22, 2025, and matched to the inspection records using the inspection activity numbers. The first inspection occurred on Aug. 17, 2015, which resulted in a violation of 29 CFR 1926.1200. During this time, 518 inspections resulted in 1,585 violations. A summary of the inspections by the top 10 most frequently cited industries by NAICS code is shown in Table 1 (p. 23). These 10 industries accounted for approximately 72% of all inspections that resulted in violations of 29 CFR 1926.1200.

Nearly 25% of all inspections that resulted in violations of the standard occurred in the construction of water and sewer lines and related structures. Types of work being performed in the water and sewer line industry include worksites engaged in constructing water and sewer lines, mains, pumping stations, treatment plants and storage tanks. The work may include new work, reconstruction, rehabilitation and repairs. Specialty trade contractors are included in this industry if they are engaged in activities primarily related to water, sewer lines and construction of related structures. All structures (including buildings) that are integral parts of water and sewer networks (e.g., storage tanks, pumping stations, water treatment plants, and sewage treatment plants) are included in this industry (U.S. Census Bureau, 2022).

OSHA conducts workplace inspections for various reasons. OSHA conducts inspections targeting specific high-hazard industries or occupations or when a new standard is enacted after creating a national emphasis program. These inspections are planned. Other types of inspections include referrals from consultation programs, health departments or first responders. Employee complaints are another inspection type. These three inspection types accounted for nearly 75% of the inspections, resulting in 29 CFR 1926.1200 violations. The OSH Act requires all employers to notify their local OSHA office when an employee dies or is hospitalized while working. More than one in ten inspections with 1926.1200 violations were due to death or hospitalization.

OSHA inspection data from January 2015 to January 2025 identified 1,585 violations of the confined spaces in construction standards. As could be expected, the most frequently identified type of inspection in which the confined spaces in construction standard was cited was a planned inspection (35.5%, Table 2). This is expected due to OSHA's construction-focused inspections initiative started in August 1994 and revised on Sept. 20, 1995 (OSHA, 1995). This initiative focused the compliance officer's attention on the four major hazards that account for more than 90% of construction site injuries and deaths. These four hazards include:

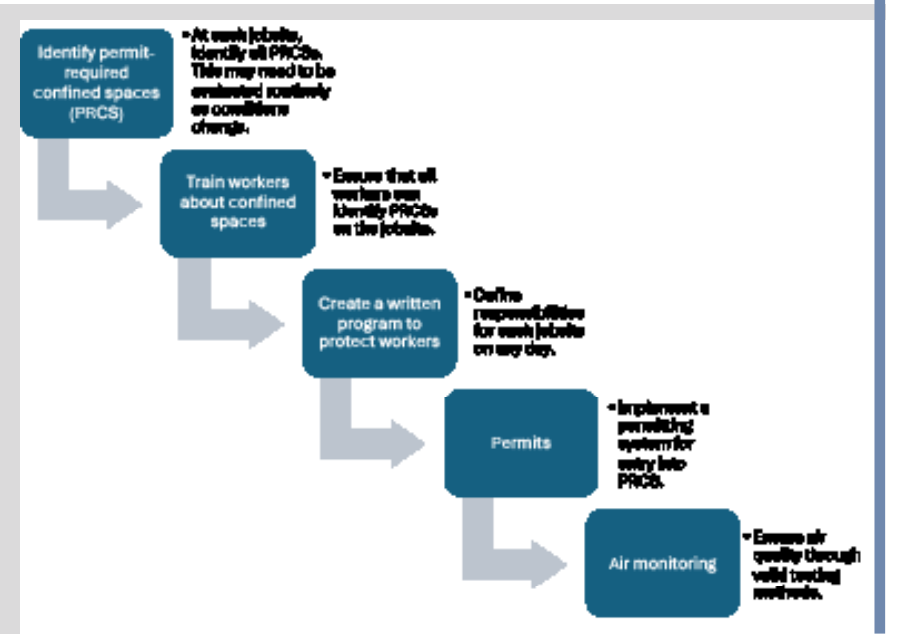
- falls (e.g., floors, platforms, roofs),
- struck by (e.g., falling objects, vehicles),
- caught in/between (e.g., cave-ins, unguarded machinery, equipment), and
- electrical (e.g., overhead power lines, power tools and cords, outlets, temporary wiring).

TABLE 4
SUMMARY OF VIOLATIONS BY TYPE IN CONSTRUCTION

Summary of violations by type in the construction industry, January 2015 to January 2025.

Violation type	Frequency (*N*)	Percentage
Serious	1104	69.7%
Other than serious	448	28.3%
Repeat	22	1.4%
Willful	6	0.4%
Unknown	5	0.3%

FIGURE 2
KEY TAKEAWAYS FROM ENFORCEMENT DATA



The second most frequently identified type of inspection that resulted in violations of 29 CFR 1926.1200 was referrals (21.4%). The number of inspections conducted by this category could be due to first responders being called to help extricate workers trapped in confined spaces.

OSHA Violation Data

Examining the specific OSHA confined spaces in construction standards violated, 121 individual paragraphs have been cited. The top 10 most frequently cited violations of 29 CFR 1926.1200 accounted for approximately 55% of all violations involving PRCS (Table 3, p. 24). The standard with the most significant number of violations (18.9%) was 29 CFR 1926.1203(a), which states:

> Before it begins work at a worksite, each employer must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

Confined spaces often pose serious health hazards to construction workers, if not imminent danger. These effects can result in serious injury and death.

The standard with the second highest number of violations (8.7%) was 29 CFR 1926.1207(a), which states:

> The employer must provide training to each employee whose work is regulated by this standard, at no cost to the employee, and ensure that the employee possesses the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this standard. This training must result in an understanding of the hazards in the permit space and the methods used to isolate, control or in other ways protect employees from these hazards, and for those employees not authorized to perform entry rescues, in the dangers of attempting such rescues.

The standard with the third highest number of violations (6.0%) was 29 CFR 1926.1203(d), which states:

> If any employer decides that employees it directs will enter a permit space, that employer must have a written permit space program that complies with 1926.1204 implemented at the construction site. The written program must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

OSHA violations can also be classified by type of violation. The type classifications include (OSHA, 2020):

•Willful: A willful violation is defined as a violation in which the employer either knowingly failed to comply with a legal requirement (purposeful disregard) or acted with plain indifference to employee safety.

•Serious: A serious violation exists when a workplace hazard could cause an accident or illness that would most likely result in death or serious physical harm, unless the employer did not know or could not have known of the violation.

•Repeated: An employer may be cited for a repeated violation if the employer has been cited previously for the same or a substantially similar condition and for a serious violation.

•Other-than-serious: A violation that is directly related to job safety and health but is not serious in nature is classified as other-than-serious.

Nearly 70% of the violations were classified as serious (Table 4, p. 25). Along with the potential health ramifications serious violations can have on an employee, serious violations also affect the imposed penalties. In 2025, inspectors may assess OSHA fines of up to $16,550 for each serious violation. They can adjust penalties based on the seriousness of each violation, the employer's previous history, the size of the business, and the employer's good faith (OSHA, 2020). These findings suggest that most violations for 29 CFR 1926.1200 were of a significant level that would most likely result in death or serious physical harm.

Discussion & Conclusions

Confined spaces often pose serious health hazards to construction workers, if not imminent danger. These effects can result in serious injury and death. The construction industry is very knowledgeable about the hazards of confined spaces, as shown by the publication of research and statistics regarding confined spaces in the industry. Confined space hazards are identified across many construction industry sectors spanning utility, industrial, commercial and residential applications.

To address the many life-threatening hazards associated with confined spaces in the construction industry, OSHA promulgated 29 CFR 1926 Subpart AA to drastically reduce serious injuries and fatalities at the expense of confined space job operations. The standard provides a comprehensive outline for confined space operations, which maintains requirements set forth by prior general industry legislature and expands to address construction-specific hazards. Specific responsibilities are determined for employers, authorized entrants, attendants and entry supervisors. The standard requires employers to identify all confined spaces at a site where entry may be required. It requires employers to monitor and evaluate confined spaces to ensure safe entry. Employers must implement appropriate engineering controls if hazardous conditions are present to render the space safe to enter.

An analysis of OSHA enforcement on 29 CFR 1926 Subpart AA determined that many construction industry sectors exhibiting complex confined spaces were cited for many hazards. As expected, the most inspected industry sectors were sewer and water contractors, commercial building construction, and plumbing, heating and air conditioning contractors. Among all 518 inspections conducted from 2015 to 2025, 184 inspections were planned, meaning that OSHA is taking consistent action to ensure that compliance is being met. The second most frequent

inspection type was referral, which are typically from significant hazards identified from other federal, state or local organizations. This means that government organizations not primarily responsible for occupational EHS are identifying and reporting hazardous conditions at jobsites.

In the construction industry, confined space operations were most frequently cited when employers did not identify all confined spaces at a site where one or more employees could enter. The second most frequently cited hazard was when employers failed to provide employees with adequate training, allowing them to fully understand confined space hazards and conduct safe operations therein. The third most cited hazard occurred when employers did not provide a written confined space program where confined space entry was deemed necessary. Figure 2 (p. 25) provides key takeaways from the review of the data to help safety professionals protect their workers.

To ensure that serious injuries and fatalities are prevented and mitigated, employers should ensure compliance with all regulations found under 29 CFR 1926. Employers should primarily ensure that the hazard identification and recognition practices of confined spaces are implemented. Doing so allows employers to eliminate or mitigate confined space hazards long before employee entry is required. These actions can improve conditions that authorized confined space workers will be subjected to through their standard course of work. **PSJ**

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