VOSH PROGRAM DIRECTIVE: **02-065C** **ISSUED: 01 June 2018**

SUBJECT **Procedures and Interpretations Manual for the Virginia Telecommunications Industries Confined Space Standard, 16VAC25-70.**

Purpose This Directive provides consolidated procedures only for the uniform enforcement of the Virginia Telecommunications Industries Confined Space Standard, 16VAC25-70. The procedures for the repealed Virginia Construction Confined Space Standard are deleted.

This Program Directive is an internal guideline, not a statutory or regulatory rule, and is intended to provide instructions to VOSH personnel regarding internal operation of the Virginia Occupational Safety and Health Program and is solely for the benefit of the program. This document is not subject to the Virginia Register Act or the Administrative Process Act; it does not have general application and is not being enforced as having the force of law.

Scope This Directive applies to all VOSH personnel and specifically to Occupational Health and Safety Enforcement and Consultation Services personnel.

Reference VOSH Field Operations Manual *(01 November 2017)*

Cancellation VOSH Program Directive 02-065B *(15 September 1993)*

Effective Date 01 June 2018

Expiration Date Not Applicable – remains in effect until cancelled or superseded.

Action The Assistant Commissioner, Directors and Managers shall assure that policies and procedures established in this Directive are understood and uniformly administered by VOSH personnel.

C. Ray Davenport
Commissioner

Distribution:
Commissioner of Labor and Industry
Assistant Commissioner - Programs
VOSH Directors and Managers
VOSH DLS and OIS staff
Cooperative Programs Director and Manager
VOSH Compliance and Cooperative Programs Staffs
OSHA Region III and OSHA Norfolk Area Offices

Background

March 23, 1987: The Safety and Health Codes Board adopted the unique Virginia standard which regulated entry into confined spaces in General Industry and Construction Industry, as well as in the Telecommunications Industry. During the same meeting, the Board decided to split the proposed standard into two separate standards - one for General Industry and the Construction Industry and the other for the Telecommunications Industry. The decision to divide the Confined Space Standard resulted from written and oral comments received during the sixty-day comment period and public hearings held. On June 29, 1987, amendments to the standards for the construction and telecommunications industries were adopted.

June 21, 1993: The Safety and Health Codes Board adopted the new federal Permit-Required Confined Spaces Standard, 1910.146 *(58 Fed. Reg. 4462, January 14, 1993).* This new standard addressed confined space hazards in General Industry only. As a result of this adoption of the federal-identical General Industry Confined Spaces standard, the Board also was required to amend the state unique Virginia Confined Space Standards for General and Construction Industry to deleted its' General Industry component and renamed resulting standard as the "Virginia Confined Space Standard for the Construction Industry, CNSP.146". The Virginia unique standards for confined spaces remained in effect for only two industries: Construction and Telecommunications.

October 29, 2015: The Safety and Health Codes Board adopted the new federal-identical Confined Space Standard for Construction, 1926.1200, *et seq.* as well as the pre-existing related federal-identical standards for both Excavation - 1926.650; and Underground Construction – 1926.800. *(80 Fed. Reg. 25365, May 04, 2015)*. As a result the Board repealed the related three unique standards: Virginia Confined Space for Construction, Excavation, and Underground Construction. This resulted in leaving only the Virginia unique standard for Telecommunications, 16VAC25-70, as the sole regulation to be covered by this Program Directive.

Summary

A. The Virginia Telecommunications Industries Confined Space Standard defines a "confined space" as:

> "….any space not intended for continuous employee occupancy, having limited means of egress, and which is also subject to the accumulation of an actual or potentially hazardous atmosphere ...or a potential for engulfment."

B. With some limited exceptions, the final standard provides the following general practices and procedures for entry into and work inside a confined space:

1. The employer must implement a written entry permit system;

2. The employer must train each employee on the hazards of working in a confined space before the employee is authorized to enter a confined space (the employer must maintain the records of the most recent training program conducted);

3. Atmospheric testing must be conducted for oxygen level, flammability and toxic materials expected to be present;

4. All confined spaces must be flushed or emptied of all dangerous substances to the extent feasible and, in the case of a hazardous atmosphere, adequate ventilation must be provided; where telecommunications activities are conducted, all confined spaces must be mechanically ventilated in accordance with Bell System Practices for Testing and ventilating Manholes;

5. Electrical and mechanical hazards must be removed or prevented from causing a hazardous situation;

6. When necessary, an attendant shall be stationed immediately outside every confined space (a non-attendant entry is permitted in many cases);

7. The employee entering a confined space with a hazardous atmosphere must be provided with an appropriate retrieval device with a retrieval line and an appropriate respirator; and

8. Confined space entry work that occurs on a public thoroughfare must be done in accordance with requirements in the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, including any changes to the MUTCD adopted by VDOT.

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Standard with Citation and Compliance Guidelines

Attached is the Confined Space Standard for the Telecommunications Industry with guidelines to cite violations of individual paragraphs of the standards by VOSH compliance personnel, as well as to provide language to assist employers and employees in their efforts to comply with this standard. This standard provides a side-by-side format which permits the user in the same document to read the standard and know how the paragraphs have been interpreted.

STANDARD | **CITATION AND COMPLIANCE GUIDELINES**

Title 16. Labor and Employment

Agency 25. Safety and Health Codes Board

Chapter 70. Virginia Confined Space Standard for the Telecommunications Industry

16VAC25-70-10. Definitions.

Note: The following standard is unique for the enforcement of occupational safety and health within the Commonwealth of Virginia under the jurisdiction of the VOSH Program. The federal OSHA standard counterpart listed at 1910.268(o) does not apply; it does not carry the force of law and is not printed in this volume.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Attendant" means an individual with no other duties assigned to remain immediately outside the entrance to the confined space and who may render assistance as needed to employees inside the space.

See Section 50 of the standard for discussion. Also see §1910.268.

"Blind" or "blinding" or "blanking" means the absolute closure of a pipe, line or duct, to prevent passage of any material (e.g., by fastening a solid plate or "cap" across the pipe).

See Section 30.A. of the standard.

"Calibration" or "Recalibration" means a laboratory or bench-top re-setting of alarm points, spans and zeros, if applicable, according to manufacturer's specifications. "Calibration" or "recalibration" shall be conducted by a factory authorized service center, a factory trained technician, or a trained company technician.

See Section 40.D. of the standard.

"Confined space" means any space not intended for continuous employee occupancy, having a limited means of egress, and which is also subject to either the accumulation of an actual or potentially hazardous atmosphere as defined in this subsection or a potential for engulfment as defined in this subsection. Confined spaces generally include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, manholes, underground utility vaults, acid tanks, digesters, ovens, kiers, pulpers, tunnels, and pipelines. Open top spaces more than 4 feet in depth such as pits, tubs, vaults and vessels may also be confined spaces if the three criteria above are met.

Burner service operations where employees work in under-house crawl spaces and tight boiler/furnace rooms will generally not be considered "confined spaces".

Trenches become confined spaces when they exceed four (4) feet in depth AND meet the three (3) criteria for all confined spaces: 1)the intent for occupancy; 2)limited egress; and 3) subject to actual or potential hazardous atmosphere.

See definitions of "hazardous atmosphere" and "engulfment".

"Engulfment" means the surrounding and effective capture of a person by finely divided particulate matter or a liquid. There is a potential for engulfment when such particulate matter or liquid exists in a sufficient quantity or at a sufficient pressure to surround a person before normal exit can be effected.

"Entrant" means any employee who enters a confined space.

"Entry" means any action resulting in any part of the employee's face breaking the plane of any opening of the confined space, and includes any ensuing work activities inside the confined space.

See Sections 30.A. and 40.A. of the standard.

"Entry permit" means the employer's written authorization for employee entry into a confined space under defined conditions for a stated purpose during a specified time.

See Section 60 of the standard.

"Field checked" means a method of checking an instrument for a proper response in the field. It is a check of the instrument's functionality and is a pass-fail or go/no-go check. When an adequate response is not obtained then the equipment should be removed from service and adjusted or repaired by a factory authorized service center, or a factory trained technician, or a trained company technician.

CSHO shall use checklist to determine when and if instrument was tested and properly calibrated.

See Section 40.D.of the standard.

"Ground-fault circuit interrupter" means a device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

See Section 80.B. of the standard.

"Hazardous atmosphere" means an atmosphere presenting a potential for death, disablement, injury, or acute illness from one or more of the following causes:

Factors which the "qualified person" onsite should consider to comply with this section include any of the limits designated in Subpart Z of 1910 and/or other available information, including SDSs, exposure monitoring results, duration of entry, actual or potential for fluctuating exposure levels, and any additional information which may indicate potential acute exposure problems.

(i) A flammable gas, vapor, or mist in excess of 10% of its lower explosive limit (LEL);

(ii) An oxygen deficient atmosphere containing less than 19.5% oxygen by volume or an oxygen enriched atmosphere containing more than 23% oxygen by volume;

(iii) An atmospheric concentration of any substance listed in Subpart Z of Part 1910 Standards above the listed numerical value of the permissible exposure limit (PEL); or

See preceding note.

(iv) A condition immediately dangerous to life or health as defined in this subsection.

"Immediately dangerous to life or health (IDLH)" means any condition that poses an immediate threat to life, or which is likely to result in acute or immediately severe health effects. See Appendix A for concentrations at which several chemicals exhibit IDLH effects.

IDLH is not only limited to inhalation hazards. For example, requirements of this definition were met where employees working in a process vessel (confined space) received serious chemical burns from contact with a high pH-level residue within the vessel and where such information was demonstrated by an acute clinical sign of a serious, exposure-related reaction which manifested within 72 hours of exposure.

"Immediate severe health effects" means that an acute clinical sign of serious, exposure-related reaction is manifested within 72 hours of exposure.

See "IDLH" definition above.

"Lockout or tagging" means placing locks or tags on the energy isolating device in accordance with 16VAC25-70-30 B of this chapter. Tags shall indicate that the energy isolated device shall not be operated until the removal of the tag.

Requirements of the General Industry Standard for the Control of Hazardous Energy Sources (Lockout/Tagout), 1910.147, apply to this standard and supplements this standard in that it assures uniformity and consistency needed to provide employees with equal safety and health protection from exposure to potentially hazardous energy sources in differing industrial sectors. See Sec.30.B.of standard.

"Qualified person" means a person who is trained to recognize the hazards of the confined space and how to evaluate those anticipated hazards and shall be capable of specifying necessary control measures to assure worker safety. The employer may designate an employee as employer representative for the purpose of assuring safe confined space entry procedures and practices at a specific site. The qualified person may also be the entrant when permissible according to 16VAC25-70-50 A of this chapter.

Where the employer has designated a "qualified person" and the qualified person has evaluated a confined space, the CSHO must determine if the qualified person's evaluation was reasonable under the conditions present at the time the evaluation was conducted.

The controlling factors in the qualified person's evaluation are the initial determination of whether a confined space exists as to first, does the space meet the definition?; and second, once a confined space is found to exist, were appropriate control measures taken? See Section 40 -Atmospheric Testing, Section 50. -Attendants and Rescue Teams; and Section 60. -Permit Systems, etc.

"Rescue team" means those persons whom the employer has designated prior to any confined space entry to perform rescues from confined spaces. A rescue team may consist of outside emergency personnel, provided the training requirements of 16VAC25-70-70 A 2 of this chapter have been met.

Rescue teams are required by Section 50.c. to be available where the qualified person has found a confined space to have an IDLH atmosphere, a hazardous atmosphere, or a potential for engulfment.

*Where employers have established an effective policy prohibiting employee entry into confined spaces having IDLH atmosphere, hazardous atmosphere, or a potential for engulfment, then: (a) a rescue team is not required; and (b) a rescue team would not have to practice removing victims from confined spaces on an annual basis. However, the qualified person and all other employees required to enter confined spaces **must** be trained in emergency and rescue methods and procedures.*

"Retrieval line" means a line or rope secured at one end to a worker's safety belt, chest or body harness, or wristlets with the other end secured to an anchor point or lifting device located outside the entry portal. The anchor point shall not be a motor vehicle. Retrieval lines must be of sufficient strength to remove an entrant when necessary.

See Section 90.A.1. of the standard.

"Zero mechanical state" means that the mechanical potential energy of all portions of the machine or equipment is set so that the opening of the pipes, tubes, hoses or actuation of any valve, lever, or button, will not produce a movement which could cause injury.

The Lockout/Tagout standard requires that all energy isolating devices needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy sources(s), Section 1910.147(d)(2). See Section 30.B

16VAC25-70-20. Scope and Application.

A. This chapter prescribes basic mandatory practices and procedures which employers must establish and use for employee entry into and work within confined spaces.

B. This chapter applies to all employers with employees covered by 29 CFR 1910.268.

CSHO's investigation shall determine whether employer's work activities in the confined space involve activities which are the same as or similar to activities performed by the telecommunications industry, such as Comcast, Sprint, or Verizon. If employer's activities are similar to those performed by telecommunications workers, the CSHO must document similarities, and violations found shall generally be cited under Section 1910.268(t). An example of work similar to tasks performed by the telecommunications industry includes the direct handling of transmission lines or fiber optic cables.

If CSHO's investigation provides documentation of work activities which are not directly associated with or similar to tasks performed by telecommunications workers, the violations noted shall generally be cited under Section 1910.146. An example of work in confined spaces not similar to, or the same as, principal duties of the telecom industry may be a vault or manhole repair to include the use of epoxies or concrete sealants.

NOTE: *Section 1910.268--Telecommunications-applies to work performed at telecommunications centers, (i.e., work including the installation, operation, maintenance, rearrangement, and approval of communications equipment and other associated equipment in telecommunications switching centers) and at telecommunications field installations (i.e., work including the installation, operation, maintenance, rearrangement, and removal of conductors and other equipment used for signal or communication service, and of their supporting or containing structures, overhead or underground, on public or private rights of way, including buildings or other structures).*

16VAC25-70-30. Preparation.

Entry into a confined space shall not be made unless the qualified person has assured that the following procedures have first been completed.

Before an entry is permitted into a confined space, the qualified person shall assure that all pumps or lines which may convey flammable, injurious, or incapacitating substances into a space be disconnected, blinded, double blocked and bled, and also that all fixed mechanical devices and equipment capable of causing injury shall be placed at zero mechanical state (ZMS).

A. All pumps or lines which may convey flammable, injurious, or incapacitating substances into a space shall be disconnected, blinded, double blocked and bled, or effectively isolated by other means to prevent the development of dangerous levels of air contamination

This paragraph normally will be cited as "serious".

or oxygen deficiency within the space. The closing of valves alone, or the closing of valves and locking or tagging them, is not considered effective protection. The disconnection or blind shall be so located or done in such a manner that inadvertent reconnection of the line or removal of the blind are effectively prevented.

It is not the intent of this standard to treat "conduits" which house electrical or telecommunications cables as "lines" which may convey flammable, injurious or incapacitating substances into a space. Thus, "conduits" are not required to be "disconnected, blinded, double blocked and bled, or effectively isolated by other means "as part of the confined spaces preparation procedures."

The term "double block and bled" or "double block and bleed" is a procedure in general industry to isolate a confined space from a line duct or pipe by locking or tagging open to the outside atmosphere a drain or bleed in the line between the two closed valves. This procedure is added as an additional acceptable method for effectively isolating pumps or lines which may convey flammable, injurious or incapacitating substances into a space to prevent the development of dangerous levels of air contamination or oxygen deficiency within the space. Accident investigation data has attributed death to a flammable, injurious, or incapacitating substance which leaked past ingle valve seals and into confined spaces.

Water at normal temperatures (i.e., 120°F. or less) is an inert substance and does not fall within Section 30.A. with respect to being a flammable, injurious or incapacitating substance, and it will not lead to the development of dangerous levels of air contamination or oxygen deficiency within a space. For specific details, refer to DOLI interpretation dated 11/6/1987.

See the Lockout/Tagout standard, Section 1910.147.

B. All fixed mechanical devices and equipment that are capable of causing injury shall be placed at zero mechanical state (ZMS). Electrical equipment, excluding lighting, shall be locked out in the open (off) position with a key-type padlock except in cases where locking is impossible; in such cases equipment shall be properly tagged in accordance with 16VAC25-90-1910.145(f). The key shall remain with the person working inside the confined space.

This paragraph normally will be cited as "serious".

C. All confined spaces shall be emptied, flushed, or otherwise purged of flammable, injurious, or incapacitating substances to the extent feasible. Initial cleaning shall be done from outside the confined space to the extent feasible.

This paragraph normally will be cited as "serious".

The major emphasis of this paragraph is placed on physical substances existing in a confined space. To a certain extent, this part also addresses substances in the form of vapor, mists, dusts, gases, etc., due to the requirement for purging; however, Section 30.D. more specifically addresses this form of hazard. In summary, this paragraph means a confined space shall be prepared prior to entry by the removal of substances which are flammable, injurious, or incapacitating. The intent is to ensure that all substances exhibiting hazardous characteristics are removed from the confined space to the extent

feasible. The failure of an employer to obtain the proper equipment for an entry does not, in itself, make cleaning and purging requirements infeasible. The feasibility of this paragraph must be investigated by the CSHO during the inspection.

D. Where the existence of a hazardous atmosphere is demonstrated by tests performed by the qualified person, the confined space shall be mechanically ventilated until the concentration of the hazardous substances is reduced to a safe level, and ventilation shall be continued as long as the recurrence of the hazards is possible or appropriate personal protective equipment, as defined in Subpart I of the Virginia Standards for General Industry (16VAC25-90-1910) and Subpart E of the Virginia Standards for Construction Industry (16VAC25-175-1926), shall be used by all employees during entry.

This paragraph normally will be cited as "serious".

This paragraph provides emphasis on atmospheric change-over within a confined space. The standard requires an assessment of the atmosphere within a confined space prior to entry. As such, when a hazardous atmosphere has been determined, the confined space shall be supplied ventilation in order to provide an air exchange ensuring safe levels prior to entry.

The mechanical ventilation shall be located in an unconfined space with the blower intake away from traffic and sources of exhaust fumes and the blower exhaust away from the confined space opening. The blower shall be located a minimum of five feet from the confined space opening to avoid returning purged air into the confined space.

Compliance Officers must document ventilation conditions while onsite and must attempt to document ventilation conditions existing prior to their arrival.

E. When the confined space entry occurs on a public thoroughfare, warning devices, barricades, and traffic cones shall be used for the protection of workers and shall conform to the American National Standards Institute D6.1-1978, "Manual on Uniform Traffic Control Devices for Streets and Highways."

This section is superseded by the VDOT Chapter 6 supplement to the MUTCD wherein "...All workers are prohibited from entering a permit required confined space without proper training, permits, atmospheric testing and authorization..." This paragraph normally will be cited as "serious".

16VAC25-70-40. Atmospheric Testing.

A. Where mechanical ventilation is utilized in accordance with subsection C, the qualified person shall assure that each confined space into which an employee may be required to enter is tested immediately prior to entry using direct reading instruments or go/no-go instruments with preset values, with remote sampling capacity for the following conditions:

1. Potential flammable hazard; and
2. Toxic materials known or expected to be present.

See the definition of "calibration" or "recalibration". See Section 40.D.

In the absence of mechanical ventilation as specified in subsection C, the qualified person shall also test for

oxygen levels prior to entry. The testing of the atmosphere for a particular toxic material is not necessary where the presence of that material is known by virtue of a previous test and appropriate personal protective equipment to protect against that material is utilized.

B. When an attendant has been assigned, as prescribed by 16VAC25-70-50 A., a qualified person shall perform atmospheric testing during occupancy at intervals dependent on the possibility of changing conditions, but in no case less frequently than hourly. Atmospheric test results must be recorded on the permit at least hourly in accordance with 16VAC25-70-60 B.

This paragraph normally will be cited as "serious". The reference to Section 50.A. in this paragraph should be to Section 50.B.

If hourly testing is required and subsequent testing is not provided for, cite for subsequent testing. If no testing is done, cite once for atmospheric testing, not subsequent testing.

Testing requirements in this paragraph and in paragraph 6.A.2. of this standard, which prescribe hourly measurement and recording, are not applicable if the entrant is wearing continuous monitoring equipment that otherwise meets the requirements of this standard.

C. When a non-attendant entry is permitted, as allowed by 16VAC25-70-50 A, at least one entrant shall use a continuous monitoring device equipped with an alarm and capable of evaluating oxygen concentrations and combustible gas concentrations in the confined space. When large confined spaces are entered, a sufficient number of monitoring devices shall be either worn or located in the work area to adequately monitor the atmosphere. Where continuous mechanical ventilation which conforms to the Bell System Practices for Testing and Ventilating Manholes [§ 620-140-501 (4.01-7.05) (1976)] is utilized, monitoring for oxygen concentrations in the confined space shall not be required.

This paragraph normally will be cited as "serious".

D. Each atmospheric testing instrument shall be calibrated according to the manufacturer's instructions or, if no manufacturer's specifications exist, at least yearly, and field checked immediately prior to its use. Instruments which are out of calibration or fail a field check cannot be used until they are properly calibrated.

Field checking an atmospheric testing instrument once daily prior to its use does meet the minimum requirements of this paragraph for "field checked". However, calibration requirements shall be addressed separately. This standard requires that confined space monitors be approved as "intrinsically safe" as defined in 1910.307(c)(1). Employer's use of noncertified monitoring equipment is a violation of VOSH standards.

An employer could be charged with a criminal violation under §40.1-49.4(K) of the Code of Va. if the employer were found to have willfully violated 1910.307(c)(1) by using noncertified monitoring equipment and the equipment malfunctioned because it was not properly certified; and the violation resulted in the death of an employee.

16VAC25-70-50. Attendants and Rescue Teams.

A. The qualified person shall evaluate each confined space that an employee may be required to enter by identifying and evaluating the hazards and potential hazards of that space. The qualified person then may allow an employee to make an unaccompanied, non-attendant entry into a confined space which has no potential for engulfment or IDLH atmosphere, and only low potential for hazardous atmosphere, provided the requirements of 16VAC25-70-40 C are met.

This paragraph normally will be cited as "serious".

Rescue teams are required to be available where the qualified person has found a confined space to have an IDLH atmosphere, a hazardous atmosphere, or a potential for engulfment.

B. An attendant shall be stationed immediately outside every confined space which has been found to have an IDLH atmosphere, a hazardous atmosphere or a potential for engulfment. The attendant shall be trained as directed by 16VAC25-70-70 A 2, be within sight or call of the entrant, and have the means available to summon assistance.

This paragraph normally will be cited as "serious".

C. Rescue teams shall be available where the confined space has been found to have an IDLH atmosphere, a hazardous atmosphere or a potential for engulfment.

This paragraph normally will be cited as "serious".

*Where employers have established an effective policy prohibiting employee entry into confined spaces having IDLH atmosphere, hazardous atmosphere, or a potential for engulfment, then: (a) a rescue team is not required; and (b) a rescue team would not have to practice removing victims from confined spaces on an annual basis. However, the qualified person and all employees required to enter confined spaces **would have** to be trained in emergency and rescue methods and procedures.*

16VAC25-70-60. Permit Systems.

A. The employer shall develop and implement a written entry permit system for all confined space entries which includes a written permit procedure that provides the following minimum information:

This paragraph normally will be cited as "serious" because of the importance of permit information to rescue operations. However, items omitted from permit might be considered "other than serious" or "de minimus" if otherwise readily available.

1. The minimum acceptable environmental conditions which are acceptable to the employer for entry and work in the confined space;

Section A. makes two requirements of the employers:

(1) that employer develop a written entry permit system for all confined space entries;

and

(2) that the employer implement the written entry permit system for all confined space entries.

2. A record of atmospheric test results conducted prior to entry and at least hourly thereafter when an attendant is required;

The testing requirements in subparagraph 60.A.2 and paragraph 40.B. of this standard, which prescribe hourly measurement and recording, are not applicable if the entrant is wearing continuous monitoring equipment that otherwise meets the requirements of this standard.

3. The last calibration dates for the oxygen detector and combustible gas indicator being used;

This paragraph normally will be cited as "other than serious" or "de minimus" if the last calibration date for the oxygen detector and combustible gas indicator being used can be determined by other documentation.

4. The signature of the qualified person responsible for securing the permit and reviewing conditions prior to entry;

See "16VAC25-70-60A." guidelines above.

5. A written description of the location and type of work to be done;

See "16VAC25-70-60A." guidelines above.

6. Each permit shall be dated and carry an expiration time of not more than 12 hours; the permit may be extended for another 12-hour period pending recertification of acceptable conditions.

See "16VAC25-70-60A." guidelines above.

B. Entry permit forms shall be retained until the corresponding entry has been successfully completed.

This paragraph normally will be cited as "serious".

C. The permit may be on a pre-printed form or incorporated into a work order, a log book, or any other format, as long as each contains the minimum information required by subsections A. 1. to A. 6. of this section.

Normally, this paragraph will not be cited due to the use of the verb "may" instead of "shall" which does not make the instruction in this item "C" required or mandatory.

16VAC25-70-70. Training.

A. The employer shall inform his employees of the hazards of working in confined spaces by providing specific training to employees before they may be authorized to enter a confined space.

This paragraph normally will be cited as "serious" where there is a complete lack of training.

Where some training has been provided but the CSHO determines it to be inadequate, classification of the violation shall be determined by evaluating such things as the type of hazard involved, the type of training that is lacking, employee experience in working with confined spaces, etc.

1. General. The employer shall assure that the qualified person and all employees who may be required to enter a confined space have received training covering the following subjects:

a. Hazard recognition;

b. Use of respiratory protection equipment if the use of such equipment will be required. Training requirements are specified in 16VAC25-90-1910.134;

Where employers have established an effective policy prohibiting employee entry into confined spaces having IDLH atmosphere, hazardous atmosphere, or a potential for engulfment, then: (a) a rescue team is not required; and (b) a rescue team would not have to practice removing victims from confined spaces on an annual basis. However, the qualified person and all other employees would have to be trained in emergency and rescue methods and procedures.

See Section 50.C.

c. Use of atmospheric testing devices for those employees required to perform atmospheric tests. Training shall cover field checks as specified by the manufacturer, normal use, and specific limitations of the equipment;

This paragraph normally will be cited as "serious".

d. Lockout and tagging procedures;

This paragraph normally will be cited as "serious".

e. Use of special equipment and tools;.

This paragraph normally will be cited as "serious".

f. Emergency and rescue methods and procedures.

This paragraph normally will be cited as "serious". Employer must provide training for the qualified person and all employees who may be required to enter a confined space in emergency and rescue methods and procedures.

2. Rescue Teams. Rescue Teams shall be trained to use the equipment they may need to perform rescue functions assigned to them.

This paragraph normally will be cited as "serious".

a. At least annually rescue teams shall practice removing victims through openings and portals of the same size, configuration and accessibility as those of spaces from which an actual rescue could be required.

This paragraph normally will be cited as "serious".

b. The attendant or at least one member of each rescue team shall hold current certification in basic first aid and CPR (Cardio-Pulmonary Resuscitation).

This paragraph normally will be cited as "serious".

B. The employer shall maintain the records of the most recent training program conducted. These records shall include the dates of the training program, the instructors of the training program, and the employees to whom the training was given.

This paragraph normally will be cited as "other than serious". Employer shall not be cited again for failure to maintain training records if he is initially cited for lack of training in Section 70.A.

16VAC25-70-80. Special Equipment and Tools.

A. No sources of ignition shall be introduced into a confined space until the implementation of the appropriate provision of this section has ensured that dangerous air contamination due to flammable or explosive substances, or both, does not exist.

This paragraph normally will be cited as "serious".

B. All electrical cords, tools, and equipment shall be inspected for visually detectable defects before use in a confined space. In the absence of low voltage circuits and equipment or double insulated tools, equipment shall be of the heavy duty insulation type or ground fault circuit interrupters shall be used. Temporary lighting shall conform with 16VAC25-175-1926.405(a)(2)(ii)(G).

This paragraph normally will be cited as "serious".

C. No fan or other equipment used for removing flammable gases or vapors shall create an ignition hazard.

This paragraph normally will be cited as "serious".

D. Cylinders of compressed gases shall never be taken into a confined space, and shall be turned off at the cylinder valve when not in use. When to be left unattended, the torch and hose shall be removed from the confined space. Open end fuel gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas-consuming device.

This paragraph normally will be cited as "serious".

Exempt from this rule are cylinders that are part of self-contained breathing apparatus or resuscitation equipment.

16VAC25-70-90. Tripods, Safety Harnesses, Retrieval Lines and Respiratory Protection.

A. Where the existence of an IDLH atmosphere, a hazardous atmosphere or potential for engulfment has been demonstrated by the qualified person, the following requirements shall also apply:

1. An appropriate retrieval device with retrieval line shall be used by any entrants, except where the retrieval lines themselves could cause a hazard because of structures, equipment, or becoming entangled with other lines inside the confined space. Where a retrieval line is used, the free end of the retrieval line shall be secured outside the entry opening either by another person holding the line or by securing it in some other manner.

This paragraph normally will be cited as "serious".

2. When entry is made through a top opening, a hoisting device such as a tripod shall be provided for lifting employees out of the space.

This paragraph normally will be cited as "serious".

B. When a person is required to enter a confined space which has either an IDLH atmosphere or a hazardous atmosphere there shall be either a positive-pressure self-contained breathing apparatus or a combination positive-pressure air-line respirator with an auxiliary self-contained air supply immediately outside the entrance to the confined space.

This paragraph normally will be cited as "serious".

C. When persons must enter a confined space which contains either an IDLH atmosphere or a hazardous

This paragraph normally will be cited as "serious".

atmosphere without a retrieval line attached, then each entrant shall be supplied with and wear a MSHA/NIOSH approved positive pressure self-contained breathing apparatus.

16VAC25-70-100. Effective Date and Start Up Date.

A. Effective date - July 1, 1987.

B. Startup date - Enforcement of 29 CFR 1910.268(t) requirements for continuous mechanical ventilation will begin November 15, 1987. Enforcement of all other portions of 29 CFR 1910.268(t) will begin July 1, 1988. Appendix B lists those subsections of 29 CFR 1910.268(o) to be amended or deleted effective July 1, 1988.

APPENDIX A

Concentrations at which some common substances exhibit immediately dangerous to life or health (IDLH) effects. Appendix A is a non-mandatory appendix. According to The National Institute for Occupational Safety and Health (NIOSH) the levels listed below represent a maximum concentration from which one could escape within 30 minutes without any escape-impairing symptoms or any irreversible health effects. These levels were published by NIOSH in September 1985 and are subject to frequent change. This list is not meant to be all inclusive but rather is meant to list some of the more frequently encountered chemicals in confined spaces.

Appendix A	
CHEMICAL NAME	**IDLH LEVELS***
Ammonia	500 ppm
Benzene	2,000 ppm
Butadiene	20,000 ppm
2 - Butanone	3,000 ppm
Carbon dioxide	50,000 ppm
Carbon monoxide	1,500 ppm
Carbon tetrachloride	300 ppm
Chlorine	25 ppm
Chlorobromomethane	5,000 ppm
Chloroform	1,000 ppm
Cresol	250 ppm
Cyclohexane	10,000 ppm
Dichlorodifluoromethane	50,000 ppm
Dichloromonofluoromethane	50,000 ppm
Ethyl acetate	10,000 ppm
Fluorotrichloromethane	10,000 ppm
Heptane	4,250 ppm
Hexane	5,000 ppm
2 - Hexanone	5,000 ppm
Hydrogen chloride	100 ppm
Hydrogen sulfide	300 ppm
Isopropyl alcohol	20,000 ppm
Liquefied petroleum gas	19,000 ppm
Methyl alcohol	25,000 ppm
Methyl cellosolve	2,000 ppm
Methyl cellosolve acetate	4,500 ppm
Methyl chloroform	1,000 ppm
Methylene chloride	5,000 ppm
Nitric oxide	100 ppm
Nitrogen dioxide	50 ppm

Octane	3,750 ppm
Ozone	10 ppm
Pentane	5,000 ppm
Petroleum distillates mixture	10,000 ppm
Phenol	100 ppm
Phosgene	2 ppm
Propane	20,000 ppm
Sodium hydroxide	200 mg/M^3
Stoddard solvent	5,000 ppm
Styrene	5,000 ppm
Sulfur dioxide	100 ppm
1, 1, 2, 2, - Tetrachloro-1, 2 - difluroethane	15,000 ppm
Toluene	2,000 ppm
Toluene-2, 4-diisocyanate	10 ppm
Trifluoromonobromomethane	50,000 ppm
Turpentine	1,900 ppm
Xylene	10,000 ppm
*Reference NIOSH/OSHA Pocket Guide to Chemical Hazards DHEW (NIOSH) Publication No. 78-210	

Statutory Authority:

§ 40.1-22(5) of the Code of Virginia.

Historical Notes

Derived from VR425-02-30, eff. November 15, 1987; amended, eff. July 1, 1988.

Appendix B

Amendments and Deletions to 29 CFR 1910.268(o), Telecommunication Standard for General Industry, to Become Effective July 1, 1988 and to Coincide with the Start Up Date of 1910.268(t):

APPENDIX B. Amendments and deletions to 29 CFR 1910.268(o), Telecommunication standard for General Industry, to become effective July 1, 1988 and to coincide with the start-up date of 1910.268(t):

Telecommunications, 1910.268	
1910.268(o)	Amended to apply 1910.268(t) to the ventilation and testing for gas in manholes and unvented vaults.
1910.268(o)(1)(ii)	Deleted
1910.268(o)(1)(ii)(a)	Deleted
1910.268(o)(1)(ii)(b)	Deleted
1910.268(o)(1)(ii)(c)	Deleted
1910.268(o)(2)	Amended to apply 1910.268(t) to entry of manholes and unvented vaults.
1910.268(o)(2)(i)	Deleted
1910.268(o)(2)(i)(a)	Deleted
1910.268(o)(2)(i)(b)	Deleted
1910.268(o)(2)(ii)	Deleted
19l0.268(o)(2)(ii)(a)	Deleted
1910.268(o)(2)(ii)(b)	Deleted
1910.268(o)(2)(ii)(c)	Deleted
1910.268(o)(2)(ii)(d)	Deleted
1910.268(o)(2)(ii)(e)	Deleted
1910.268(o)(2)(iii)(a)	Deleted
1910.268(o)(2)(iii)(b)	Deleted
1910.268(o)(3)	Deleted
1910.268(o)(5)	Deleted
1910.268(o)(5)(i)	Deleted
1910.268(o)(5)(ii)	Deleted

Statutory Authority:
§ 40.1-22(5) of the Code of Virginia.
Historical Notes
Derived from VR425-02-30, eff. November 15, 1987; amended, eff. July 1, 1988.

Documents Incorporated by Reference (16VAC25-70):
Bell System Practices for Testing and Ventilating Manholes, § 620-140-501(4.01-7.05), 1976.

Appendix C

CONFINED SPACE ENTRY INVESTIGATION PROCEDURES FOR TELECOMMUNICATION

When considering whether an area or specific item is a confined space, various points must be Investigated. The first is the definition criteria.

"Confined Space," as defined by this Virginia standard, means

A. any space not intended for continuous employee occupancy and

B. has a limited means of egress and

C. is subject to either the accumulation of an actual or potentially hazardous atmosphere, as defined, or has a potential for engulfment.

For this standard to be applicable, the CSHO must determine that the requirements of A & B are met and that at least one of the requirements of C is present.

A thorough investigation addressing each part shall be conducted and, if applicable, show why the space is not meant for continuous employee occupancy and demonstrate the characteristics of limited means of egress. Normally, these two parts of the definition will be easy to establish and can be documented by photographs, employer interviews concerning function of the space, current entry procedures, etc. It is important, however, for the CSHO not to take these parts for granted since they are often an employer defense after the issuance of citations.

Once these two parts of the Standard's definition have been satisfied the CSHO must investigate the factors that contributed to an actual or could contribute to a potential hazardous atmosphere. Each item listed under the definition for hazardous atmosphere must be investigated and documented, separately, showing why these conditions might occur or might not occur. Factors such as pre-existing and existing ventilation, physical substances with the space, physical condition and composition of the space, existing lateral sources upstream and downstream from the space, work conducted in the space, etc., should be documented in order to establish whether or not a hazardous atmosphere might exist.

The fourth item listed under the definition of hazardous atmosphere is the condition immediately dangerous to life and health, IDLH, as defined. To some the definition of IDLH means exposure, through inhalation, to a toxic substance at a level which would pose an immediate threat to the life or health of an individual. When investigating confined space issues, consideration should be given to conditions within the confined space which could result in acute or immediately severe health effects. For instance, a worker may be exposed to lime in a tank which could result in serious caustic burns to the worker's skin. Should this worker demonstrate a serious, exposure-related reaction to lime within 72 hours of exposure, it could be classified as an immediate severe health effect which falls under the definition of "immediately dangerous to life or health."

The potential for engulfment must also be documented in accordance with the definition showing the basis for the determination. Once the area in question is considered to be a confined space, the CSHO must satisfy the definition of entry in order to fully apply the Confined Space standard.

Attached to this directive is a list of questions which the CSHO can use to aid the overall documentation of the case. The list of questions is not all inclusive, but if used, should help the CSHO in two ways:

- Help establish and document case facts; and
- Demonstrate additional questions which should be addressed.

This list of questions is not mandatory incorporated but should be incorporated into the investigation through the professional judgement of the CSHO or Supervisor.

QUESTIONS TO ASK TO AID CASE DOCUMENTION

1. Who made the assessment the space was either a confined space or not?
2. When was the assessment made?
3. Where was the assessment made?
4. What was the outcome of the assessment?
5. How did the company or qualified person arrive at this assessment?
6. What steps (cleaning, testing, permits, etc.) were taken prior to entry?
7. Who directed these steps to be taken?
8. Why were the employees directed to do these steps?
9. What training did employees receive prior to entry?
10. When was it received?
11. What did it consist of?
12. Who attended?
13. Who taught? (If employee lacks training, specifically what parts?)
14. Are other entry's made?
15. When?
16. How often?

17. For what purpose?

18. What type monitoring equipment is used?

19. Ask the attendant or qualified person to demonstrate usage of the equipment?

20. Have they received training on equipment?

21. When?

22. Who taught it?

23. Who was in attendance?

24. How often has the qualified person had to use it?

25. Who calibrates the monitoring equipment?

26. When is it done?

27. Show how calibration is done?

28. Record overall condition of equipment?

29. If employees are required to use equipment are they trained?
If so, how?

30. What planning was done prior to commencement of operation to provide for temporary lighting, ZMS, electrical isolation, cleaning and flushing of space, permits, other set-up of supplies and necessary tools to perform job? Answers to this could show there was a pre-planning stage in which employer should have considered issue of confined space hazards.

31. Are there blueprints which were used during pre-planning stage which show measurements of space, travel path within space, in-coming lines and what they may convey, external hazard sources which show sewer lines, gas lines, electrical lines, steam lines, etc.

32. Who attended pre-planning meetings?

33. When was pre-planning held?

34. Records of pre-planning activities?

35. If other employers are involved on-site what are their records?

36. Do they enter the area of question?

37. If so, do they follow confined space procedures for entry into same confined space(s).
(NOTE: This may show industry recognition.)

38. What was condition of space prior to entry?

39. What was introduced into the space due to the work operation?

40. What potential hazards are associated with the confined space? (Toxics, combustibles, 02 enrich/def. – elect, engulfment, physical hazards.)

41. What is the origin or source point of the hazard?

42. How many employees entered?

43. What did they perform in space?

44. Where were they positioned in space?

45. Who entered?

46. How long were they in?

47. How was communication set-up between attendant and entrants?

48. Weather conditions on day of entry or incident?
(Interview management/employees and access weather records from local airport or weather service to document.)

49. Did any employees have pre-existing medical conditions?
(Hearing loss, claustrophobic, diabetic, epileptic)

Appendix D

VIRGINIA TELECOMMUNICATIONS INDUSTRIES
CONFINED SPACE STANDARD CHECKLIST

PREPARATION

1. Qualified Person
   a. Qualified Person? Name _____
   b. Training? _____

2. Pumps and Lines Isolated
   a. Method used? _____
   b. Inadvertent Reconnection Possible? _____

3. Mechanical Devices at Zero Mechanical state (ZMS)
   a. Lockout/Tagout Procedures? _____
   b. Location of Lockout Key? _____

4. Purging Confined Space of Contaminants
   a. Method Used? _____
   b. Outside Cleaning Procedures? _____

5. Mechanical Ventilation Used (1910.146)? _____

6. Mechanical Ventilation Used (1910.268 (t) only)
   a. Bell System Practices? _____
   b. Location of Blower? _____

7. Traffic Control Devices (1910.268 (t) only)

   ANSI D6.1-1991 Requirements? _____

ATMOSPHERIC TESTING

1. Qualified Person Conducting Tests? _____

2. Direct Reading Instruments with Remote Sensors? _____

   _____

3. Sampling

   a. oxygen? _____

   b. Flammability? _____

   c. Toxic Material? _____

   d. Previous Testing? _____

4. Testing Frequency? _____

5. Ventilation and Oxygen Testing (1910.268 (t) only; Bell System Practices)? _____

   _____

6. Monitoring Equipment Calibration? _____

   _____

ATTENDANTS AND RESCUE TEAMS

1. IDLH Potential Atmosphere in Confined Space? _____

2. Attendant Present? Location? _____

3. Rescue Team Available? _____

PERMIT SYSTEM

1. Written Permit System? _____

2. Environmental Conditions for Entry into confined Space? _____

   _____

3. Record of Atmospheric Test Results? _____

4. Calibration Dates for Monitoring Equipment? _____

5. Signature of Qualified Person? _____

6. Written Description of Location and Work Process? _____

_____

7. Date of Permit and Expiration Time? _____

TRAINING

1. Qualified Person and Person and Employees with Access to confined Space _____

_____

a. Hazard Recognition? _____

b. Respiratory Protection Program (Elements of 1910.134)? _____

_____

c. Use of Atmospheric Testing Devices? _____

_____

d. Lockout/Tagout Procedures? _____

e. Use of Special Equipment and Tools? _____

_____

f. Emergency and Rescue Procedures? _____

2. Rescue Team Trained for Specific Rescue Functions? _____

_____

a. Annual Training/Practice? _____

b. CPR Certified? _____

3. Training Records Maintained? _____

SPECIAL EQUIPMENT AND TOOLS

1. No Source of Ignition? _____

   a. Lights? _____

   b. Tools? _____

2. Electrical Cords, Tools & Equipment Inspected for Visible Defects? _____

   _____

3. Cylinders of Compressed Gas in Confined Space? _____

   _____

4. Oxy-Acetelene Hoses Removed From Confined Space? _____

TRIPODS, SAFETY HARNESSES, RETRIEVAL LINES AND RESPIRATORY PROTECTION

1. Appropriate Retrieval Devices Present (IDLH Atmosphere)? _____

   _____

2. Hoist for Top Entry Present? _____

3. SCBA's or Supplied Air and Escape SCBA Present? _____

   _____

Appendix E

QUALIFIED PERSON INTERVIEW STATEMENT

Date _____ Time _____ CSHO ID/RPT # _____

Inspection # _____

Employee Name _____Phone _____

Address _____

Occupation _____

Employer Name _____ Employed from _____ to _____

(___) Credentials Presented (___) Discrimination Explained

Union (yes/no) If yes, bargaining unit _____

address & phone _____

_____

Haz. Com.: Access to written program? _____ Access to MSDS? _____

Hazards of chemicals & precautions explained? _____

Labeling system explained? _____ Training? _____

CONFINED SPACE

1. Does workplace meet definition of confined space? _____

2. If YES, is the qualified person trained to recognize and evaluate confined space hazards? _____

   Detail: _____

3. Is the qualified person capable of specifying necessary control measures to assure worker safety? _____

   Detail: _____

INSPECTIONS

4. Has the qualified person conducted tests immediately prior to entry into the confined space to determine the existence of a hazardous atmosphere in the confined space? _____

   If NO, why not? _____

5. If YES, describe the types of tests and the results received. _____

   _____

6. Were direct reading instruments with remote sampling capacity used in testing? _____

   If YES, Results: _____

   _____

   If NO, why not? _____

   _____

7. Was testing performed to determine the following conditions?:

   _____ oxygen level
   _____ potential flammable hazard
   _____ toxic materials known or expected to be present

   Results: _____

   _____

(NOTE: Atmospheric testing for particular toxic material is unnecessary where the presence of that material is known by virtue of previous test and appropriate PPE is utilized to protect against that material.)

8. Did qualified person perform atmospheric testing at intervals during occupancy? _____

   If NO, why not? _____

   _____

   If YES, were test results recorded on permit at least hourly? _____

   Results: _____

_____

9. Did qualified person assess need for mechanical ventilation in confined space in accordance with written permit system requirements? _____

   Detail: _____

   _____

Additional questions for the qualified person:

10. What is the size and shape of the space? _____

    _____

11. How large is the entry portal? _____

12. What is (or was) in the confined space? _____

    _____

13. How was the confined space cleaned and/or purged? _____

    _____

14. What hazards could be generated during the work being performed in the confined space?

    _____

15. Is the equipment or machinery in the confined space capable of producing any hazards?

    _____

    If YES, what type of hazards? _____

    _____

16. Are there dust, gases, vapors, mists, or fibers present which could lead to an explosion if an ignition source were present? _____

    _____

    If YES, please detail: _____

    _____

17. Will the mechanical ventilation system being used be adequate or will channeling occur?

    _____

18. Are there any residues such as rust, slime, mold, etc., in the space which could create additional problems? _____

If YES, please detail: _____

_____

Notes: _____

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