Confined Space Entry

March 10, 2019

Quick N Quality Projects LTD
Document Sender : Michelle Bryan

verified by approveme

Audit Trail Serial# 385b893a52d6d79c7ab54f8b6ce72a8b

Confined Space Entry

SCOPE

This Code of Practice governs the entry of any confined space by all employees, supervisors and contractors employed by Quick N Quality Oilfield LTD

Supervisors are responsible for ensuring that all employees and contractors under their direction and control are trained and work within the requirements of this Code of Practice at all times.

DEFINITIONS

Air Contaminants: Foreign substances in normal breathing air, which may be harmful to health. Measured in PPM, mg/m³ or f/cm³. Five (5) major types are dusts, mists, fumes, gases, and vapors.

Attendant: A person trained in confined space entry and emergency procedures and assigned to remain outside a confined space and provide assistance as required. Also called a safety watch or watchperson.

Biological Hazards: Infectious agents presenting a risk or potential risk to the well being of employees, either directly through inhalation, ingestion, or skin absorption.

Blank: A solid plate installed at the end of a pipe that has been physically disconnected from a piping system.

Blind: A solid plate installed through the cross-section of a pipe, usually at a flanged connection, and typically inside the flange bolt pattern.

Bonding: Electrically connecting elements of an installation to each other so that differences in electrical potential between the elements are minimized.

Competent: In relation to an employee, means adequately qualified, suitably trained and with sufficient experience, to safely perform work without or with only a minimal degree of supervision.

Competent Tester: A person capable of safely and accurately testing the atmosphere of a confined space and interpreting the test results.

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 and that may become hazardous to a worker entering it because

- of its design, construction, location or atmosphere,
- of the work activities, materials or substances in it,
- the provision of first aid, evacuation, rescue or other emergency response service is compromised, or
- of other hazards relating to it.

Confined Space Examples

* Tanks of all types

* Cold Feed bins

* Sanitary and storm sewer manholes and piping systems

* Concrete mixer truck drums

* Aggregate surge bins

* Aggregate feed bins

* Cement and fly ash silos

* Asphalt silos

verified by approveme

* Inside bulk trucks of all types

Double Block and Bleed: A method used to isolate a confined space from a line or pipe by physically closing two in-line valves and opening a “vented-to-atmosphere” valve between them.

Enclosed Space: Any enclosed area, other than a confined space, in which ordinary job hazards may be intensified.

Entrant: A person who enters a confined space to perform an assigned task.

Entry: Ingress by persons into a confined space which occurs upon breaking the plane of the confined space portal with any part of their body; and all periods of time in which the confined space is occupied.

Hazardous Atmosphere: Any atmosphere that is or has the potential to be oxygen-deficient, explosive or that contains a toxic or disease producing contaminant at levels greater than the Occupational Exposure Limit.

Hot Work: Work that produces arcs, sparks, flames, heat, or other sources of ignition.

Immediately Dangerous to Life and Health (IDLH): Concentration level of an atmospheric condition which would cause a person without respiratory protection to be fatally injured or would cause irreversible and in-capacitating effects on that person’s health.

Isolation:A process of physically interrupting, or disconnecting, or both, pipes, lines and energy sources from the confined space.

Lock-Out: A specific set of procedures for ensuring that a machine or system shut down for maintenance or repair or other reasons is secured against accidental start-up or movement of any part for the duration of the shut down.

Lower Explosive Limit (LEL):

The concentration of a gas, vapour or dust below which a flame or explosion does not occur on contact with a source of ignition. For gases and vapors, this is expressed as a percentage in air by volume, and for dusts is expressed as weight of dust per volume of air.

Occupational Exposure Limit (OEL): The maximum concentration of a substance to which an employee may repeatedly be exposed, eight hours per day, forty hours per week, without adverse health effects. The regulatory body having jurisdiction over the work sets the limit.

Oxygen-Deficient Atmosphere: An atmosphere where the oxygen content is less than 19.5 %.

Oxygen-Enriched Atmosphere: An atmosphere where the oxygen content is greater than 23.0 %.

Parts Per Million (PPM): Expression of the concentration of a contaminant in a medium. 10,000 ppm equals 1%.

Permissible Concentration (PC): The concentration of an airborne substance to which an employee is permitted to be exposed.

Personal Lock: A key-type of padlock issued to an employee, to be used only for locking energy sources in an inoperative or safe position. All personal locks are owned by Quick N Quality and are unique to the Lockout system.

Purging: Displacement of an atmosphere in a confined space by a fluid or gas.

Qualified Person : A person who by reason of training, education and experience is knowledgeable in the operation to be performed and is competent to judge the hazards involved and specify controls and/or protective measures.

Respirable (Compressed) Air: Compressed breathing air that meets the requirements of CSA Standard Can # Z180.1-00 “Compressed Breathing Air and Systems”.

Shall: Denotes a mandatory requirement.

verified by approveme

Should: A recommendation that is a sound safety and health practice; it does not denote a mandatory requirement.

Short Term Exposure Limit (STEL): The maximum concentration of a contaminant to which an employee may be exposed for a 15 minute period. The authority having jurisdiction over the work establishes this limit.

Upper Explosive Limit (UEL): The concentration of a gas or vapour above which a flame does not occur on contact with a source of ignition.

Ventilation: The displacement of an atmosphere in a confined space by clean fresh air using approved air moving equipment.

Zero Energy State: State in which a machine, system or process has been rendered incapable of start-up or movement. Zero Energy State means the elimination or control of:

- electrical power
- hydraulic fluids under pressure
- compressed air or vacuum
- energy stored in springs
- potential energy from suspended parts
- steam
- capacitors
- any other sources that might cause unexpected mechanical movement (e.g., thawing or freezing, unstable ground, static electricity, equipment balance).

RESPONSIBILITES

Entry Supervisor

* Conduct a hazard assessment prior to entry.

* Ensure that the entrants and attendant are trained and competent to do the work.

* Ensure that the entrant(s) are aware of the hazards of the confined space as well as their duties and responsibilities.

* Ensure that a competent tester does the atmospheric tests.

* Coordinate the entry and communications.

* Ensure appropriate PPE is selected and used.

* Ensure that safety and rescue plans are in place.

* Ensure that the conditions of the safe work plan and the permit are followed.

* Authorize the entry to the confined space.

* Suspend the permit if conditions change or the entry procedure is not being followed.

Entrant(s)

* Help with the hazard assessment.

* Know hazards and symptoms of exposure.

* Maintain communication with the attendant.

* Notify the attendant if unacceptable conditions occur.

* Be qualified to operate the atmospheric monitoring equipment.

* Follow the safe work plan.

verified by approveme

Attendant

* Know and recognize the potential hazards and monitor activities inside and outside of the confined space.

* Monitor the entrants and keep the permit up to date.

* Constantly be in communication with the entrants.

* Must never leave their station unless replaced by another qualified attendant.

* Order the entrants to leave the confined space if:

* there is a permit violation

* there are unacceptable conditions, either inside or outside of the confined space

* the attendant has to leave their station or can no longer perform their duties.

* Must know how to operate the retrieval equipment to perform non-entry rescues.

HAZARD ASSESSMENT

All employees and supervisors who are engaged in a Confined Space Entry, shall, before entry, participate in a Hazard Assessment. The hazards that may be encountered, the means of eliminating or controlling the hazards and the rescue equipment and plan must be identified and documented.

The Hazard Assessment shall be reviewed and adjusted if necessary at least on a daily basis or as conditions warrant, to take into consideration any changes from the original Hazard Assessment.

ATMOSPHERIC HAZARDS

Flammable or Explosive Atmosphere

Fire or explosion can occur when a source of ignition makes contact with a flammable material in air. Ignition sources include flames, welding arcs, hot surfaces, and sparks from metal impact, motors or static electricity. Flammable materials include gases and vapors that are between their upper and lower explosive limits and concentration of dust above the lower explosive limit.

Oxygen Deficiency

Normal air contains 20.9% Oxygen by volume. Air is considered oxygen deficient at levels below 19.5%. Exposure to levels between 14% and 17% is likely to result in impaired judgment, euphoria and fatigue. Unconsciousness and death will occur in minutes at levels below 6%. Deficiency may result from oxygen consumption due to rust formation, bacterial action, combustion or absorption, or displacement by other gases.

Oxygen Enrichment

An atmosphere is considered oxygen enriched at levels above 23.0%. Oxygen-enriched atmospheres increase the flammability of materials. Enrichment can be caused by improper isolation of oxygen lines, accidental ventilation of the space with oxygen instead of air or leaks from welding equipment.

Toxic Atmosphere

An atmosphere that contains gases or vapors in excess of the Occupational Exposure Limit or Permissible Concentration.

PHYSICAL HAZARDS

Biological Substances

A substance that causes disease; such as bacteria or viruses in sanitary sewers, Hanta virus from mouse urine and droppings in buildings and attics or moulds and spores in heating and ventilating systems.

verified by approveme

Drowning in Liquids

The presence of any liquid that has the potential to drown an entrant.

Electrical Equipment

Tools or appliances that are powered by electricity. Electrical shock can result from defective cords, welding cables, or other electrical equipment. Work done in Confined Spaces constructed of metal or in wet conditions is particularly dangerous.

Engulfment by Free Flowing Solids

Granular materials such as sand, cement and other normally loose materials can form bridges that can collapse if jarred.

Entrapment

The internal shape or dimensions change to a narrower cross section such that the shape could cause an entrant to become trapped.

Falls

Falls from elevation or on grade. The presence of a substance or condition that could cause an entrant to loose traction and fall.

Falling objects

Tools, equipment or materials that can fall on a worker inside a Confined Space. There may be a danger of being struck by falling objects, particularly where other workers or an access way are located above the entrant(s).

Inadequate working space

Internal dimensions such that a worker cannot do their assigned tasks comfortably in the confined space.

Inflow or outflow of liquids or solids

Piping, conveyors of all types or ductwork that could introduce or withdraw a substance from the confined space.

Insects or Vermin

Insects such as bees or wasps and animals such as snakes or rats.

Mechanical (moving) Equipment

Equipment such as agitators, mixers, blenders or augers. The equipment may move or start and therefore must be locked out. Even when the power is shut off and locked out, unsecured equipment can move if stood upon, or used as a brace for leverage or subjected to maintenance procedures which create an imbalance.

Noise

Noise produced in confined spaces can be particularly harmful because of reverberation from nearby walls. It can also interfere with communication between the entrant(s) and the attendant.

Openings

Holes or pits in the floor or bottom of a confined space that an entrant could fall into or out of.

Pressurized lines or components

Piping or portions of a system that are normally under pressure or that can become pressurized during the entry.

verified by approveme

Stored Energy

Energy that has the potential to be released, for example; electricity in capacitors, energy in a compressed spring or pressure in a pressurized hydraulic or air system.

Structural failure

Catastrophic failure of the supporting structure or any portion of a confined space.

Temperature extremes

High or low temperatures that can cause cold or heat related disorders. Temperature extremes can be caused by process, the work being conducted or by atmospheric conditions.

Toxic Substances or Last Contained

Substances that are covered by WHMIS and can be present from sources such as:

* The process or contents that normally occur in the confined space.

* Work activity in the confined space.

* Waste materials in the confined space.

* Residues left when the confined space is emptied.

Traffic

Movement of road or rail mounted vehicles that could affect the safety of the entrants in the confined space.

Work by others outside of the space

Activities by others that could affect the safety of the entrants in the confined space.

ISOLATION and LOCKOUT

All confined spaces must be isolated and in a Zero Energy State before the entry begins. It is the responsibility of the employees and supervisors involved in the confined space entry to ensure equipment has been isolated prior to commencing work.

Isolation can be accomplished by:

BLANKING or BLINDING

* The introduction of a solid plate at the flange connection of any piping system. The blank/blind material must be compatible with the product in the piping system and capable of withstanding any pressures imposed on the blank/blind.

* The blank/blind(s) must be installed as close as possible to the confined space and the disconnected lines drained or vented.

* The blank/blind(s) must be clearly marked to show that they have been installed and are not to be removed.

LOCKOUT

Piping systems are not the only components that must be isolated. All sources of energy or systems which could introduce product, harmful or otherwise must be shut down, tested and locked out, to achieve a Zero-Energy state. It is the responsibility of the employees to ensure that the equipment is properly shut down and locked out, prior to placing their personal locks on the equipment.

Some examples of components that must be shut down and locked out:

* Piping

- Steam
- Air
- Hot oil

* Conveyors which introduce or draw product from a confined space.

* Agitators for process vessels

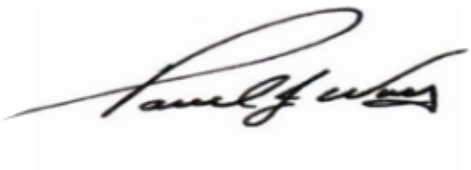
* Heating coils

* All drive components, regardless of the power transmission system.

* In some instances flue dampers may be either open or closed depending on the process, but they must be locked in the proper position.

* Shutting down and locking out may have to be supplemented with physical blocks, stops, or restraints, to prevent equipment from moving.

Warning: It may be necessary to lock out several forms of energy in several locations to achieve a zero-energy state.



X

Signature Certificate

Document name: Confined Space Entry

Unique Document ID: A3598F49D2C8B58B9B582F75B5A3661F97103084

LEGALLY SIGNED USING WPesignature
Build. Track. Sign Contracts.

Timestamp	Audit
February 4, 2016 7:25 am MDT	Confined Space Entry Uploaded by Michelle Bryan - pwurz.qnq@outlook.com IP 69.168.160.97

This audit trail report provides a detailed record of the online activity and events recorded for this contract.