Confined Space Entry Requirements

Purpose
This document defines the minimum required control measures to reduce the risk of injury or illness related to conducting work in confined spaces.

Scope
Applicable to all Coca-Cola system locations (manufacturing, distribution, offices, laboratories and all other locations) worldwide that have confined spaces, with the exception of confined spaces that are not owned, managed, or maintained by the facility (for instance, in the case of a utilities sump that is controlled by a public utility).

Definitions
See Appendix I.

Requirements

1. Compliance
Implement management practices and controls in accordance with the stricter of Company requirements or applicable legal requirements related to confined spaces.

- Establish and maintain processes to identify, access and periodically verify compliance with current versions of these applicable legal requirements. These processes may be specific to confined spaces or part of a more comprehensive compliance process.

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1 “Applicable legal requirements” means any law, regulation, rule, requirement, standard, norm, decree or code applicable to the relevant facility and/or operation enacted, promulgated or issued by any governmental or regulatory agency or body at the National, Federal, State, Provincial, Municipal or other local level. It may also include relevant and applicable international or regional laws, regulations, rules and agreements, such as, but not limited to United Nations Guidelines and/or European Union (EU) Directives or Regulations, whether adopted into locally applicable law or directly applicable without the need for local adoption.
2. Hazard Identification & Risk Assessment
Conduct and document an initial assessment of the workplace to identify each confined space and the specific hazards associated with entry into each of the confined spaces.

The assessment:

- May be either a stand-alone document or included as part of a more comprehensive risk assessment;
- Must be updated whenever processes, equipment or facilities are added or modified in such a way that can create or change the risks and hazards associated with the entrance into confined spaces; and
- Must be reviewed at least annually to verify that it is current.

3. Confined Space Entry Program
Document, maintain and implement a Confined Space Entry program.

The program must cover all applicable sections of these Requirements and, based on the site’s risk assessment, clearly define the appropriate control elements necessary to enter confined spaces.

4. Hazard Communication
Alert personnel to the required confined space entry controls by posting permanent warning signs at or near the entrance to each confined space.

Signs must be:

- Prominent, readily distinguishable and understandable to all facility personnel; and
- Include wording similar to:

  DANGER
  CONFINED SPACE
  PERMIT REQUIRED FOR ENTRY

5. Control Access
Provide access controls, such as locks, seals, bolts or administrative controls, to discourage casual or unauthorized entry into the confined space, as indicated by the risk assessment and applicable to the space.
6. **Entry Permit**

Establish a permit program to control, monitor and document the entry into and work conducted in a confined space.

- If site personnel must enter confined spaces, then site management will designate one or more Entry Supervisor(s) whose role is to approve entry into a confined space by signing off on the permit and to ensure that confined space entries are conducted in accordance with all applicable requirements and specified control measures. The Entry Supervisor will immediately stop the confined space entry in the event that any permit requirements are no longer met.

- The entry permit must be completed and approved and the requirements of the permit communicated to all those involved in the entry before entry into a confined space.

- The minimum information to be documented includes:
  
  - Date, time, exact location and duration of the entry;
  - Description of the work to be done;
  - Baseline levels of oxygen, combustible gas and, if applicable, toxic gas;
  - Controls required and completed, as described in Requirement 7 below, including, as applicable:
    - Energy sources isolated and lines blocked;
    - Ventilation method (e.g. natural, mechanical exhaust, etc.);
    - Personal protective equipment;
    - Means of communication between the entrant and attendant; and
    - Rescue equipment, rescue services and means of rescue initiation
  - Signed verification by the Entrants, Attendants and the Entry Supervisor that the above have been completed and verified;
  - Duration of the permit; and
  - Post a copy of the permit at the entrance of the confined space or in the immediate work area at the space for the duration of the work in the space.

- A new permit must be issued whenever:
  - Work activity to be conducted in the space is not identified on the original permit;
  - Personnel involved in the entry are not included on the original permit;
  - Work lapses or is delayed for more than 30 minutes;
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- Work extends beyond the duration that is authorized in the permit (12 hours maximum); and
- Conditions in the space change or could be influenced by activities or conditions near the space.
  - Permits must be maintained for at least one year from the date of issue.

7. Confined Space Entry Controls

Implement control measures necessary to ensure the health and safety of the entrant during entry into the confined space, work within the confined space and egress from the confined space.

- Identify required control measures based on the site’s Confined Space Entry Program and a risk assessment of the specific confined space and the work to be done.
- Control measures must include those defined in Sections 7.1 through 7.4, as applicable.

7.1 Hazard Isolation
- Empty and clean confined spaces prior to entry, to the extent possible without entering.
- Isolate all energy sources according to the site’s procedures for the control of hazardous energy (lockout or tagging of equipment).
- Block and drain lines carrying potential hazards into the space, such as gas, water, steam or CIP chemicals, as necessary to protect entrants from inadvertent exposure. If valves cannot be locked out, piping carrying materials to or from a space must be disconnected and drained or have blank flanges inserted.
- Electrical tools and lighting sources used inside metal spaces or taken into wet or damp spaces must be positively grounded and utilize controls, such as low voltage (nominally less than 12 Volts), battery power or ground-fault interrupters, to minimize shock hazards.
- Select and use personal protective clothing and equipment based on the hazards to be encountered in the space.
- Ensure that access into and around confined spaces is free of debris and impediments to allow smooth egress.

7.2 Ensure a Safe Atmosphere
- No confined space entries are permitted unless the atmosphere within the confined space meets these minimum acceptable air quality standards:
  - Oxygen level not less than 19.5% by volume nor greater than 23.5% by volume;
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- Combustible gas concentration not greater than 10% of the lower explosive limit (LEL) of any combustible material in the space; and
- Toxic contaminant concentrations less than a recognized exposure limit, such as an ACGIH Threshold Limit Values or US OSHA Permissible Exposure Limit.

  o If used for Hot Work or other purposes, compressed gas cylinders are to be located outside the confined space, with the shut off valves accessible to the entry attendant. Remove gas hoses from the space and turn off the supply at the cylinder valve when personnel leave the space.

  o Continuous mechanical exhaust ventilation capable of ensuring that the minimum acceptable air quality standards (above) are maintained is required if:
    - Hot Work, as defined by the Hot Work Requirements, is being performed in the confined space;
    - There are emission sources in or near the confined space with the potential to compromise the minimum acceptable air quality standards;
    - Air monitoring results prior to or during entry show that natural ventilation is insufficient to ensure that the minimum acceptable air quality standards are maintained; or
    - The Entry Supervisor determines that mechanical exhaust ventilation is the most effective strategy to ensure that the minimum acceptable air quality standards are maintained.

  o Prior to each entry, without entering the space, use a direct reading monitor to quantitatively test the atmosphere to verify that the minimum acceptable air quality standards are met.
    - Atmospheric testing must be conducted according to the monitor manufacturer’s instructions and the technical specifications in Appendix II.
    - Monitoring must be conducted for oxygen and combustible gas concentrations in all circumstances.
    - Testing must also be conducted for any toxic contaminants that a risk assessment indicates may be present. At a minimum, this includes:
      - Ozone, if the confined space undergoes CIP with ozonated water; and
      - Carbon monoxide, if oil-lubricated air compressors are used to supply ventilation.
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- Conduct monitoring continuously or at regular intervals throughout the confined space entry if Hot Work is being conducted, or in other situations with the potential to generate hazardous atmospheres.

**WARNING:** No entry into a Confined Space shall be permitted when air monitoring results indicate oxygen, combustible gas or toxic contaminant concentrations outside the minimum acceptable air quality standards. Even with self-contained breathing apparatus, these atmospheres are considered too dangerous to enter.

If these levels are detected during a confined space entry event, while the entrant is already inside the confined space, the entrant will immediately exit the confined space.

### 7.3 Entry Attendant

- An Attendant must be positioned at the entrance to the confined space during the entire duration of a confined space entry, and must:
  - Maintain effective and continuous visual contact and communication with each Entrant
  - Maintain an accurate count of Entrants in the space;
  - Remain at the entrance of the confined space until the confined space entry has been completed, or until relieved by another trained Attendant;
  - Monitor activities inside and outside the space to determine if it is safe for Entrants to remain in the space. This may include atmospheric monitoring as specified above;
  - Prevent unauthorized personnel from entering the space and prevent activities near the entrance that could endanger the Entrants;
  - Direct Entrants to exit the space when the Attendant:
    - Detects a condition violating permit requirements;
    - Detects the behavioral effects of hazard exposure in an entrant;
    - Detects a situation outside the confined space that could endanger the authorized entrants; or
    - Cannot effectively and safely perform all the duties required.
  - Initiate Emergency Response as described below.
7.4 Emergency Response Plan

Prior to the issuance of each entry permit, the Entry Supervisor will ensure that effective procedures and the necessary equipment and rescue providers are in place to complete the following actions without endangering rescuers or other personnel:

- Retrieve an Entrant in the event that the Entrant is unable to leave the confined space under their own power; and
- Retrieve an Entrant, or provide respiratory protection in accordance with the Respiratory Protection Requirements, within 3 minutes of an indication that the atmosphere in the confined space does not meet the minimum acceptable air quality requirements.

At a minimum, these procedures and equipment must include:

- Use of a full body harness with D-ring attached to a retrieval line for each Entrant involved in a top or side entry over 1.22 meters (4 feet) from the bottom of the confined space;
- Identifying and ensuring availability of Rescuers capable of providing the necessary services; and
- Means for the Attendant to instantly initiate rescue and emergency procedures as soon as the Attendant determines that Entrants need to escape from the space. Attendants may assist with non-entry retrieval, but may not leave the confined space or enter it (if trained to do so) unless relieved by another Attendant.

8. Maintenance, Inspection and Calibration

Implement maintenance, inspection and calibration programs as needed to ensure that any site equipment required to comply with Requirement 7 above will perform as intended, including:

- The air monitoring device must be checked, calibrated, and maintained per the manufacturer’s required frequencies and procedures; and
- Any equipment to be used for ventilation, communication with entrant, initiation of emergency response or emergency retrieval for a particular confined space entry must be maintained per the manufacturer’s required frequencies and procedures, and visually inspected or tested immediately prior to entry.
9. Training
Ensure that employees and other affected personnel are adequately trained to perform their roles and responsibilities with regard to confined space entry.

Training must include:

- Initial awareness training for all employees regarding confined space recognition, potential hazards and requirement for entry permit;

- Documented training for all personnel involved in the entry into a confined space, including Entry Supervisor, Entrants, Attendants and Rescuers. Training must:
  - Be conducted prior to assigning associates to new confined space entry duties;
  - Cover, at a minimum:
    - All aspects of the site’s Confined Space Entry Program, including their roles and responsibilities;
    - Expected hazards associated with the site’s confined spaces and recognition of probable air contaminant overexposure symptoms; and
    - As appropriate to their role, use and inspection of confined space entry equipment including air monitors and any equipment used for ventilation, communication with entrant, initiation of emergency response and emergency retrieval.

- Refresher training:
  - For any individuals who have not participated in a confined space entry in the prior 12 months;
  - When there are additions or changes to the site’s Confined Space Entry Program, confined space entry hazards or related procedures; or
  - When there is evidence of deficiencies in employees’ knowledge regarding performance of their roles and responsibilities,

- An annual simulated rescue practice, with participation from each member of any on-site rescue team, if the site provides internal rescue services; and

- Ensuring that contractors understand and follow site requirements regarding confined space entry, in compliance with the Contractor and Visitor Management Requirements.
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References
Confined Space Entry Guidelines ES-RF-105
OSHA Standards 29 CFR 1910.146, "Permit Required Confined Spaces"
American National Standard Safety Requirements for Confined Spaces ANSI Z117.1-1989
Contractor and Visitor Management Requirements ES-RQ-110
Hazardous Energy Control Requirements ES-RQ-160
Hot Work Requirements ES-RQ-170
Respiratory Protection Requirements ES-RQ-210

Revision History

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Summary of Change</th>
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<tbody>
<tr>
<td>01-Jan-2010</td>
<td>Revised document released as part of the TCCMS Redesign - Governance Reset. This document contains content from the previous version with reformatting and significant rewording.</td>
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<tr>
<td>3-July-2007</td>
<td>Modified scope to exclude spaces not owned/managed by site; For consistency with other requirements: changed compliance statement, added SOP requirement, signs to be in local language statement; Changed wording for permit duration, ventilation; Moved monitoring criteria from Guidelines to Requirements to better ensure that monitoring is properly conducted; Removed emergency equipment listings—redundant</td>
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<tr>
<td>23-Aug-2006</td>
<td>Removed Appendices to guidelines, added contractor verification requirements, added audit requirement and record retention requirement and made minor word change to compliance requirement</td>
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<tr>
<td>24-June-2005</td>
<td>Initial issue</td>
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Appendix I

Definitions

Confined Space: Any enclosure, such as a tank, silo, sugar bin, filter, manhole, sump, pit, service room, boiler, tanker truck or hopper that meets all four of the following conditions:

- Is large enough and so configured that a person can bodily enter the space and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Is not designed for continuous human occupancy; and
- Presents known or potential serious hazards, including, but not limited to, one or more of the following:
  - An atmosphere that is oxygen deficient, flammable, toxic or otherwise immediately dangerous to life and health; or contains a combustible dust;
  - Actual or potential entry of a liquid, granular or pelletized material having potential for engulfment; i.e., trapping, crushing, suffocating or drowning;
  - An internal configuration such that a person could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; or
  - Any other recognized and serious safety or health hazard, such as, but not limited to, mechanical or electrical hazards.

Confined Space Entry: Occurs when any part of the entrant’s body breaks the plane of a confined space opening, with the intent to fully enter the confined space, or if the entrant’s head breaks the plane of the confined space opening. The ‘entry’ covers the time from first entry until the entrant has fully exited the confined space.

Entrant: A person trained and authorized by facility management to enter a confined space.

Attendant: A person positioned outside the confined space who is trained and authorized by facility management to monitor Entrants in a confined space, as well as the surrounding area.

Entry Supervisor: A person trained and authorized by facility management to approve entry into a confined space and ensure that entries into confined spaces are conducted in accordance with all applicable requirements.

Rescuer: A person trained and authorized by facility management to conduct rescue operations within a confined space.
Appendix II

Confined Space Atmospheric Testing

Following are technical requirements for testing devices and techniques:

1. Operate testing devices within the manufacturers' specified temperature and humidity ranges.

2. Conduct monitoring in the order: (1) Oxygen, (2) Combustible Gases and (3) Toxic Contaminants, if discrete devices are used.

3. Conduct initial monitoring remotely without entering the confined space.

4. Conduct monitoring throughout the entire space and at various levels within the confined space.

5. Use direct reading portable gas detectors to monitor for Oxygen levels and Combustible Gases.

6. Test Toxic Contaminants using colorimetric detector tubes, organic vapor analyzers, photo ionization detectors or other direct reading portable devices specifically calibrated for the contaminant.

7. Ensure that all portable electric sampling devices are certified as electrically intrinsically safe by nationally recognized testing laboratories, such as Underwriters Laboratories, Factory Mutual systems or Canadian Standards Association.

8. Follow the manufacturers' instructions regarding sampling and response times. In the absence of specific time response information for any gas detector, use 2 minutes as a minimum sampling time.

9. Unless it is possible to calibrate LEL Monitors using gas/vapor mixtures of the expected contaminant, monitors intended for general above ground use must be calibrated to pentane or hexane, and those for below grade use must be calibrated to methane.

10. Adjust portable gas detectors with visible/audible alarms so that warning signals are consistent with the unacceptable air quality conditions.

11. Do not use portable gas detectors for Oxygen or Combustible Gases that draw air by hand aspiration (i.e., rubber squeeze bulb).