



# CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

**GDS-CO2**

F.D. Permit Number

Date

Description of Work: _____		Lbs. of Carbon Dioxide _____	
Project Name: _____		Address: _____	
Suite: _____	City: _____	Zip: _____	
Contractor: _____		Contractor's License/Type #: _____	
Address: _____		City: _____	State: _____ Zip: _____
Contact Person: _____		Phone No. ( ): _____	Email: _____

**OFFICE USE ONLY: DO NOT COMPLETE BELOW THIS LINE**

We have reviewed the proposed **Gas Detection System** construction documents and specifications. Our review is to ensure compliance with the minimum code requirements related to fire and life safety as set forth in the 2022 California Fire Code. The following comments shall apply to this application:

- Rooms or areas with insulated liquid carbon dioxide systems with more than 100 pounds of carbon dioxide used in **beverage dispensing** applications shall require either mechanical ventilation installed in accordance with CFC 5004.3 or a gas detection system complying with CFC 5307.2. (CFC 5307.3.1)

The carbon dioxide detection system shall be designed as follows:

1. Activates an audible and visible supervisory alarm at a normally attended location upon detection of a carbon dioxide concentration of 5,000 ppm.
2. Activates an audible and visible alarm within the room or immediate area where the carbon system is installed upon detection of a carbon dioxide concentration of 30,000 ppm. (CFC 5307.3.2)

Carbon dioxide sensors shall be installed within 12 inches of the floor in rooms or indoor area locations where leaking gases are expected to accumulate, or other approved locations. (CFC 5307.3.2)

- A gas detection system complying with Section 916 CFC shall be provided in rooms and indoor areas in which a **carbon dioxide enrichment** process is located, and in other areas where carbon dioxide is expected to accumulate. Carbon dioxide sensors shall be provided within 12 inches of the floor in the area where the gas is expected to accumulate or leaks are most likely to occur. The system shall be designed as follows:

1. Activates an audible and visible supervisory alarm at a normally attended location upon detection of a carbon dioxide concentration of 5,000 ppm.
2. Activates an audible and visible alarm within the room or immediate area where the carbon system is installed upon detection of a carbon dioxide concentration of 30,000 ppm. (CFC 5307.3.2)

(Continued Over)

Fee computed by: \_\_\_\_\_ Amount Due: \$ \_\_\_\_\_

Received by: \_\_\_\_\_ Amount Received: \$ \_\_\_\_\_

Cash  Credit  Check No. \_\_\_\_\_ Invoice No. \_\_\_\_\_

- The activation of a **carbon dioxide enrichment system** low level gas detection system alarm shall automatically:
  1. Stop the flow of carbon dioxide to the piping system.
  2. Activate the mechanical exhaust ventilation system.
  3. Activate an audible and visible supervisory alarm signal at an approved location within the building.

The activation of a carbon dioxide enrichment system high-level gas detection system alarm shall automatically:

1. Stop the flow of carbon dioxide to the piping system.
  2. Activate the mechanical exhaust ventilation system.
  3. Activate an audible and visible **evacuation alarm** both inside and outside of the carbon dioxide enrichment area in which the carbon dioxide containers are located.  
(CFC 5307.4.3.1)
- Gas detection system equipment shall be designed for use with the carbon dioxide gases being detected and shall be installed in accordance with manufacturers' instructions. (CFC 916.3)
  - Permanent power connection to the building electrical power supply is required. Cord connection is permitted provided it is to an un-switched receptacle using an approved restraining method that secures the plug to the receptacle. (CFC 916.4)
  - Standby or emergency power shall be provided or the gas detection system shall initiate a trouble signal at an approved location if the power supply is interrupted. (CFC 916.5)
  - Hazard identification signs shall be posted at the entrance to the room and indoor areas where the **carbon dioxide enrichment** process is located and at the entrance to the room or indoor area where the carbon dioxide containers are located. The sign shall not be less than 8 inches in width and 6 inches in height and indicate:

CAUTION – CARBON DIOXIDE GAS  
VENTILATE THE AREA BEFORE ENTERING.  
A HIGH CARBON DIOXIDE (CO<sub>2</sub>) GAS CONCENTRATION  
IN THIS AREA CAN CAUSE ASPHYXIATION.  
(CFC 5307.4.5)

- Inspection and testing of gas detection systems shall be conducted not less than annually. Sensor calibration shall be confirmed at the time of sensor installation and calibration shall be performed at the frequency specified by the sensor manufacturer. (CFC 916.11)
- Gas sensors and gas detection systems shall not be connected to the fire alarm systems unless approved and connected in accordance with the fire alarm equipment manufacturer's instructions. (CFC 916.10)
- Audible and visible alarm signals associated with a gas detection alarm shall be distinct from the fire alarm and carbon monoxide alarm signals. (CFC 916.8)

Contact the Fire District at **925-941-3300 x3902** (minimum **two** working days' notice required) to schedule the **Gas Detection Test** available Monday through Thursday excluding holidays.

***On the morning of the inspection, a confirmation telephone call made to the Fire District at 925-941-3300 is necessary between 8:00 and 8:30 AM. Otherwise, the inspection will be cancelled.***

**Approval does not relieve the designer / contractor from complying with all applicable fire code requirements, nor does it abrogate the requirements of other authorities having jurisdiction.**

Approved as submitted                       Approved with Comments                       Denied, Resubmittal Required

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_