



**NASSAU COUNTY FIRE COMMISSION
OFFICE OF THE FIRE MARSHAL**

Nassau County Public Safety Center
1194 Prospect Avenue
Westbury, New York 11590
(516) 573-9900 / nassaucountyny.gov

Chief Fire Marshal
Scott D. Tusa

FIRE MARSHAL BULLETIN

April 5, 2016 (*REVISED*)

To: Nassau County Fire Departments, Town / City / Village Building Departments, Business and Property Owners, and NYS Licensed Alarm Contractors

From: **Assistant Chief Fire Marshal Michael F. Uttaro** - muttaro@nassaucountyny.gov

The recently approved addition of Article VIII to the Nassau County Fire Prevention Ordinance to address the needs for the life safety requirement of carbon monoxide detection in all new and existing commercial buildings within the County of Nassau has raised questions regarding the implementation of this new law, so the following is an explanation of the law and direction on its implementation. Carbon monoxide detectors/alarms required for existing buildings shall be installed by January 1, 2015.

SINGLE-STATION CARBON MONOXIDE ALARM. An alarm comprising an assembly that incorporates a sensor, control components, and an alarm notification appliance in one unit operated from a power source either located in the unit or obtained at the point of installation.

MULTIPLE-STATION CARBON MONOXIDE ALARM. A single-station carbon monoxide alarm capable of being interconnected to one or more additional alarms so that the actuation of one causes the appropriate alarm signal to operate in all interconnected alarms.

CARBON MONOXIDE ALARM. A single- or multiple-station carbon monoxide alarm responsive to carbon monoxide.

CARBON MONOXIDE DETECTOR. A device connected to an alarm control unit having a sensor that responds to carbon monoxide.

CARBON MONOXIDE DETECTION CONTROL UNIT. A component of the carbon monoxide detection system, provided with primary and secondary power sources, which receives signals from initiating devices or other carbon monoxide detection control units, and processes these signals to determine part or all of the required carbon monoxide detection system output function(s).

CARBON MONOXIDE-PRODUCING HVAC SYSTEM. The term "carbon monoxide-producing HVAC system" means a system that uses ducts to provide heat, ventilation and/or air-conditioning to all or any part of a commercial building, provided that:

- a) such ducts run from a carbon monoxide source to a classroom(s) and/or detection zone(s) served by such system; and/or
- b) such system is supplied with recirculated or makeup air from a classroom or detection zone that contains a carbon monoxide source.

CARBON MONOXIDE SOURCE. Any appliance, equipment, device or system that may emit carbon monoxide (including, but not limited to, fuel fired furnaces; fuel fired boilers; space heaters with pilot lights or open flames; kerosene heaters; wood stoves; fireplaces; and stoves, ovens, dryers, water heaters and refrigerators that use gas or liquid fuel), garages, and other motor vehicle related occupancies.

CLASSROOM. The term “classroom” means a room or area that:

- a) is located in a school (the term “school” includes public schools and private schools, including but not limited to religious schools);
or;
- b) is a place where classes are taught and is occupied or capable of being occupied by six or more persons (including students and teachers) at any one time. For the purposes of this definition, the term “school” means any building used, in whole or in part, for educational purposes, including but not limited to a building classified, in whole or in part, as Educational Group E under Chapter 3 of the BCNYS.

DETECTION ZONE. The term “detection zone” means a story of a commercial building. However:

- a) if a story is arranged so that two or more separate carbon monoxide-producing HVAC systems are used to serve separate portions of the story, each such portion of the story shall be deemed to be a separate detection zone;
- b) if a story contains one or more classrooms, each classroom shall be deemed to be a separate detection zone and the portion, if any, of the story that is not a classroom shall be deemed to be a separate detection zone;
- c) if a portion of a story is used as a garage, the portion used as a garage shall not be deemed to be a detection zone and the portion not used as a garage shall be deemed to be a detection zone; and
- d) if an entire story is used as a garage, such story shall not be deemed to be a detection zone.

MULTI-CRITERIA / MULTI-PURPOSE ALARM. An alarm that incorporates detection capabilities for more than one hazardous condition, such as fire, fuel gas, or carbon monoxide.

SIGNAL.

Carbon Monoxide Alarm Signal. A signal indicating a concentration of carbon monoxide at or above the alarm threshold that could pose a risk to the life safety of the occupants and that requires an immediate action.

Supervisory Signal. A signal indicating the need for action in connection with a pre-alarm condition, or in connection with the supervision of protected premises carbon monoxide safety functions or equipment, or the maintenance features of related systems.

Trouble Signal. A signal initiated by a system or device indicative of a fault in a monitored circuit, system, or component.

SYSTEM.

Carbon Monoxide Detection System. A system or portion of a combination system that consists of a control unit, components, and circuits arranged to monitor and annunciate the status of carbon monoxide initiating devices and to initiate the appropriate response to those signals.

Combination Carbon Monoxide Detection System. A carbon monoxide detection system in which components are used, in whole or in part, in common with a non-carbon monoxide signaling system, and in which components are not used as part of a fire alarm system.

Combination System. A fire alarm system in which components are used, in whole or in part, in common with a non-fire signaling system.

Household Carbon Monoxide Detection System. A system of devices that uses a control unit to produce an alarm signal in the household for the purpose of notifying the occupants of the presence of concentrations of carbon monoxide that could pose a life safety risk.

Reference Standards:

NFPA 70-2008	National Electric Code
NFPA 72-2013	National Fire Alarm and Signaling Code
NFPA 720-2015	Installation of Carbon Monoxide (CO) Detection and Warning Equip.

Installation Requirements:

New Commercial Occupancies:

- Carbon monoxide detectors shall be installed as part of a combination system in new occupancies that require a fire alarm system to be installed. These device installations shall be submitted as part of the fire alarm system plan submission with the required fees and paperwork.
- New occupancies that do not require the installation of a fire alarm system shall install carbon monoxide detection system with the required fees and paperwork.

Existing Commercial Occupancies:

- Where a fire alarm system is maintained within an existing occupancy, the carbon monoxide detector(s) shall be interconnected to the existing fire alarm system, as part of a combination system. These devices shall be installed by a NYS licensed alarm company and shall have a letter sent to the Nassau County Fire Marshal's Office on the

installer's letterhead verifying their installation and meeting the requirements of the Nassau County Fire Prevention Ordinance.

Exceptions:

1. Interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind.
 2. Carbon monoxide detector / alarms in existing areas are not required to be interconnected where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes.
- Where an existing occupancy does not maintain a fire alarm system, 10-year battery-operated or hard-wired carbon monoxide alarms shall be installed as required and shall be UL listed (or equivalent listing agency).

Additional Requirement and Installation Information

1. Detection zones required to be provided with carbon monoxide detection.

Carbon monoxide detection shall be provided in each detection zone which is located in a commercial building and in which at least one of the following triggering conditions exists:

Triggering Condition 1: The presence of any carbon monoxide source in a detection zone shall be a triggering condition for such detection zone.

Triggering Condition 2: The presence in a detection zone of a duct opening or other outlet from a carbon monoxide-producing HVAC system shall be a triggering condition for such detection zone. However, the presence in a detection zone of a duct opening or other outlet from a carbon monoxide-producing HVAC system shall not be deemed to be a triggering condition for such detection zone if:

- Carbon monoxide detection is provided in the first room or area served by each main duct leaving the carbon monoxide source in such carbon monoxide-producing HVAC system and
- The signals from the carbon monoxide detection equipment in the first room or area served by each such main duct are automatically transmitted to an approved location.

Triggering Condition 3: The presence of a garage or other motor-vehicle-related occupancy in location that is adjacent to a detection zone shall be a triggering condition for such detection zone. The presence of an adjacent garage or other motor-vehicle-related occupancy shall be a triggering condition even if there are no openings, penetrations, or air transfer openings between the detection zone and the adjacent garage or other motor-vehicle-related occupancy.

2. Placement of carbon monoxide detection. Where a detection zone is required by to be provided with carbon monoxide detection, the carbon monoxide detection shall be placed as follows:

- Detection zones less than 10,000 square feet. Where carbon monoxide detection is required to be provided in a detection zone having an area less than 10,000 square feet, the carbon monoxide detection shall be placed in a central location within such detection zone.
- Detection zones 10,000 square feet or larger.

Where carbon monoxide detection is required to be provided in a detection zone having an area 10,000 square feet or larger, carbon monoxide detection shall be placed in a central location within such detection zone and at such additional locations within such detection zone as may be necessary to assure that no point in the detection zone is more than 100 feet from carbon monoxide detection.

3. Carbon monoxide detectors/alarms are considered life safety devices and therefore, devices installed as part of a combination system, a carbon monoxide detection system or a carbon monoxide combination system, shall send alarm, supervisory and trouble signals to the alarm control panel.
4. Carbon monoxide detectors/alarms shall be located and installed on the ceiling in the same room as permanently installed fuel burning appliances, as defined in **Triggering Condition 1**, as long as such installation is not contrary to manufacturer's specifications.
5. Ceiling mounted carbon monoxide detectors/alarms shall be located a minimum of twelve (12) inches from any wall or as specified by manufacturer's specifications.
6. Wall mounted carbon monoxide detectors/alarms shall be minimum of eighty (80) inches off the finished floor and at least six (6) inches from the ceiling or as specified by manufacturer's specifications.
7. A single or multiple station combination carbon monoxide / smoke alarm shall not be deemed to satisfy the requirements of this ordinance.

Exception: Individual tenant units within a residential occupancy.

8. In dwelling units, sleeping units and sleeping areas, carbon monoxide detectors/alarms shall be installed as specified in the Fire Code of New York State.
9. Occupancies shall require additional carbon monoxide detectors/alarms in every assembly room accommodating fifty (50) or more occupants.
10. Single- and multiple-station carbon monoxide alarms shall initiate a temporal four (4) alarm sequence upon activation of the device. Carbon monoxide detectors interconnected to combination systems shall be permitted to initiate a temporal three (3) alarm sequence. Smoke and fire detection shall take precedence.
11. Carbon monoxide detectors/alarms shall be located a minimum of three (3) feet from all air registers.

NYS Licensed Alarm Company Compliance and NCFM Notification Procedures

When adding carbon monoxide detectors to an **existing approved** fire alarm system, the NYS licensed alarm company shall submit a letter on their company letterhead stating that *"In accordance with the Nassau County Fire Prevention Ordinance, Article VIII, there have been ____ of detectors added to the existing approved fire alarm system. The detectors have been installed and tested in conformance with NFPA 720 2015 and NFPA 72 2013 and this combination system has a valid fire alarm permit issued by Nassau County Fire Marshal's Office."* Manufacturer's cut sheets for these detectors shall be included with this letter. There is no fee or plan requirement for this work and there will be no approval letter sent by Nassau County Fire Marshal's Office to the premise.

Carbon monoxide detectors added to existing conventional, zone type, fire alarm systems shall be programmed to have these detectors zoned separately as to transmit an alarm signal to the approved supervising station specifically identifying the carbon monoxide detector alarm activation. If an existing fire alarm control panel is at its capacity, an additional conventional sub panel will be permitted to be installed specifically for these required carbon monoxide detectors with the requirement of plans and fees.

Carbon Monoxide Detection Frequently Asked Questions

1. Are carbon monoxide detectors/alarms required?

Carbon monoxide detectors/alarms are required in one- and two-family dwellings and townhouses as specified in the Residential Code of New York State and regulated by the local building authority.

All other occupancies (to which the following questions apply) are regulated by the Fire Code of NYS and the Nassau County Fire Prevention Ordinance, and are required to have carbon monoxide detectors/alarms.

2. Are carbon monoxide detectors/alarms required even if no source is present?

Yes, carbon monoxide detectors/alarms are required even if no source is present.

3. What types of carbon monoxide detectors/alarms are permitted?

All carbon monoxide detectors/alarms shall be UL listed; and may be interconnected as a carbon monoxide detection system, a combination system, or utilize 10-year sealed battery-operated alarm(s), depending on the situation and location requirements.

4. Where must carbon monoxide detectors/alarms be located?

The locations of carbon monoxide detectors/alarms are specified in the Fire Code of New York State and the Nassau County Fire Prevention Ordinance. All detector/alarm locations must comply with manufacturer's specifications.

5. Are there any prohibited locations for carbon monoxide detectors/alarms?

Carbon monoxide detectors shall not be located where prohibited by manufacturer's specifications. Depending on manufacturer, prohibited locations may include in kitchens, furnace rooms and garages, specifically where carbon monoxide detectors/alarms cannot be located farther than 3 meters (9.8 feet) away from the source. In small rooms with a source, it may not be possible to add devices. Carbon monoxide detectors/alarms shall not be located within ducts.

6. Who may install carbon monoxide detectors/alarms?

A NYS licensed alarm installer must perform all work when the newly added devices are interconnected to a fire alarm and smoke detection system, or in new occupancies where a carbon monoxide detection system is required. In existing occupancies where single- or multiple-station alarms are permitted, the occupant may install 10-year sealed battery-operated alarms, or a licensed electrician may install hard-wired carbon monoxide alarms.

7. Do plans need to be submitted to the Nassau County Fire Marshal's Office prior to installation?

Plans shall be submitted to the Nassau County Fire Marshal's Office prior to installation where a new fire alarm and smoke detection system is also required, or where a fire alarm and smoke detection system is already present and the building is undergoing alternations, repairs or construction which impact said system. Additions to an existing fire alarm and smoke detection system shall require a detailed letter from the NYS licensed alarm installer.

8. If a plan submission is not required, what else must be sent to the Nassau County Fire Marshal's Office?

If plans are not required, the installer of the devices must send a letter on business letterhead to the Nassau County Fire Marshal's Office stating the location and address of the work. This letter shall include the device type, quantity, location, make and model, and any additional relevant information such as device programming, power supervision, compatibility, cut sheets, etc.

9. What alarm signal must carbon monoxide detectors sound?

Carbon monoxide detectors attached to a combination system, shall be permitted to sound a temporal three alarm sequence. Carbon monoxide detection systems and single- and multiple-station alarms, where permitted, shall sound a temporal four alarm sequence from their integrated or accessory sounder and provide a supervisory signal if attached to a combination system.