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BULLETIN NO.
99-3

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Subject: **Carbon Monoxide Alarms**

Reference: **N.J.A.C. 5:23-3.20, 3.21, 6.4, 6.5, 6.6, 6.7, 6.21A, 6.25A, 6.26A, 6.27, and 6.31**

P.L. 1999, c. 15 -- approved by Governor Christine Todd Whitman on February 8, 1999 -- calls for the Department of Community Affairs to promulgate rules for the installation of carbon monoxide (CO) alarms in hotels, multiple dwellings, and rooming and boarding homes. These rules were adopted on August 16, 1999. The statute also requires that the Commissioner determine whether similar provisions should be applied to one- and two-family homes. In the April 7, 2003 New Jersey Register, the Department adopted regulations that provide for installation of CO alarms in one- and two-family homes. The rules are incorporated in the sections referenced above. The purpose of this bulletin is to provide code officials with the pertinent information from NFPA 720 and UL 2034 for approval of the installation of CO alarms.

As per the regulations, CO alarms are required to be provided in the immediate vicinity of **all** sleeping rooms in all buildings of Groups I-1, R-1, R-2, R-3, R-4, and R-5 that contain fuel-burning appliances or have attached garages. Open parking structures, as defined by the Building Subcode, are not considered attached garages.

There are two alternatives to the installation of a CO alarm in every dwelling unit. They are as follows:

Alternative #1: Common Area Alarms. If installation is not triggered by 1, 2, or 3 below, a common area CO alarm may be installed. If this option is chosen, monitored or interconnected alarms must be installed in the rooms, corridors, or lobby adjacent to the room containing the fuel-burning appliance, in the immediate vicinity of any ventilated shaft (e.g., stair shaft, elevator shaft, or ventilation shaft) on the floor containing the fuel-burning appliance, and within two stories above and below. All common area CO alarms must be interconnected or monitored. If this alternative is chosen, the units listed below still need individual alarms.

1. The dwelling unit or guest room contains a fuel-burning appliance or has an attached garage; or

2. The dwelling unit or guest room is connected by ductwork or ventilation shafts to a room containing a fuel-burning appliance or to an attached garage; or

3. The dwelling unit or guest room is only one story above or below any story that contains a fuel-burning appliance or has an attached garage, or is on the floor of the fuel-burning appliance or the floor that has the attached garage.

Alternative #2: Monitored Alarms. The building may be provided with a monitored CO alarm system. These alarms must be placed in every room containing a fuel-burning appliance, and connected to an alarm monitoring station that is staffed at all times by a trained and qualified person. CO alarms and fire alarms may be incorporated into a common monitored system, provided that authorities would be able to distinguish each alarm type.

The following table indicates the areas of the building that are required to be provided with a CO alarm in the vicinity of sleeping rooms in each dwelling unit or guest room based upon the compliance option chosen:

	No Common Area or Monitored Alternative	Alternative #1: Common Area System	Alternative #2: Monitored Alarms
Dwelling unit or guest room contains a fuel-burning appliance or has an attached garage	X	X	X
Dwelling unit or guest room is connected by ductwork or ventilation shaft to a room containing a fuel-burning appliance or to an attached garage	X	X	
Dwelling unit or guest room is only one story above or below any story that contains a fuel-burning appliance or has an attached garage, or is on the floor of the fuel-burning appliance or the floor that has the attached garage	X	X	
All other dwelling units or guest rooms contained within the building	X		

The following is an example of a building configuration and the alarm requirements or options:

A seven-story hotel (Group R-1) contains gas dryers in the laundry room on the first floor. There are no vertical shafts or duct work connecting the laundry room and any of the guest rooms. There are three suites on the seventh floor that contain gas fireplaces. If the designer chooses not to provide any of the alternative protection, all of the guest rooms are required to be provided with CO alarms in the immediate vicinity of the sleeping areas. If the designer chooses to install Alternative #1, Common Area Alarms, in addition to the common area alarms, all guest rooms on the first, second, sixth, and seventh floors are required to be provided with CO alarms within the guest rooms. This is based upon the requirement that units within one floor above and below the floor containing fuel-burning appliances are required to be provided with alarms. If the designer chooses to install Alternative #2, Monitored Alarms, only those guest rooms that contain fuel-burning appliances are required to be provided with alarms within the guest room. In this case, alarms would be required in the seventh floor suites with gas fireplaces, as well as in the laundry room.

UL 2034 and NFPA 720

The CO alarm is required to be manufactured, listed, and labeled in accordance with UL 2034 entitled, "Single- and Multiple-Station Carbon Monoxide Alarms." Each device shall have a label indicating that it meets this requirement.

In the locations specified above, the alarms are required to be installed as follows:

1. The device is permitted to be a battery-powered, hard-wired, or plug-in type.
2. If installing an electrically operated device, the AC power source is required to be supplied from either a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting. Operation of a switch (other than a circuit breaker) or a ground-fault circuit interrupter is not permitted to cause loss of power to the alarm.
3. The alarm may be located on the wall, ceiling, or other location as specified in the manufacturer's installation instructions.
4. The device is required to be supported independently of its attachment to wires.
5. For alarms installed in the vicinity of sleeping rooms, the alarm notification appliance is required to be clearly audible in all bedrooms over background noise levels and with all intervening doors closed, with a minimum rating of 85dBA at 10 feet (3m). If the alarm is intended to notify occupants in the same room, the sound pressure level is permitted to be 75dBA at 10 feet.

Under most situations, compliance with the requirements listed above should be acceptable for approval of the installation. However, should a situation arise that

is not addressed above, please refer to NFPA 720 for additional installation requirements.

For your information, Kidde Safety has recalled some CO devices. The models that have been recalled are the "Nighthawk" and the "Lifesaver." The Nighthawk models included in this recall are all models manufactured between November 8, 1998 and March 9, 1999. The date of manufacture is on the back of the unit as year, month, and day. "NIGHTHAWK" and "Carbon Monoxide Alarm" are written on the front of the unit. If only "Carbon Monoxide Alarm" is written on the front, the unit is **not** included in the recall. The Lifesaver models included in the recall are models 9CO-1 and 9CO-1C, manufactured between June 1, 1997 and January 31, 1998. The manufacture date is on the back of the unit as the first six numbers of the serial number, located above the UPC. The manufacture date is written as day, month, and year. "LIFESAVER" and "Carbon Monoxide Detector" are written on the front of the unit. Should you identify a unit that has been included in the recall, do not approve its installation; direct the owner to contact Kidde Safety at (888) 543-3346.