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BULLETIN NO.

08-1

Date: **October 2008**

Subject: **Hard-Wired, Interconnected
Smoke Alarms vs. Low-
Voltage Smoke-Detection
Systems**

Reference: **2006 International Residential
Code, Section R313.1**

It has come to the Department of Community Affairs' attention that low-voltage smoke-detection systems are being approved for installation in lieu of the code required hard-wired, interconnected smoke alarms. This bulletin is intended to clarify the code requirements for smoke alarms and to provide guidance on granting variations for low-voltage smoke-detection systems.

Section R313.1 of the 2006 International Residential Code (IRC) states, "All smoke alarms shall be listed in accordance with UL 217, and installed in accordance with the provisions of this code and the household fire-warning equipment provisions of NFPA 72. Household fire-alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire-alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms in the event the fire-alarm panel is removed, or the system is not connected to a central station."

Section R313.1 prohibits the use of low-voltage smoke-detection systems in lieu of hard-wired smoke alarms. Hard-wired, interconnected smoke alarms are required to be installed in all cases. However, National Fire Protection Association (NFPA) Standard 72 prohibits more than 12 hard-wired, interconnected smoke alarms from being installed. In the case where a dwelling requires more than 12 smoke alarms to be installed, the Department recommends that the fire subcode official require permit applicants to apply for a variation for the installation of a low-voltage smoke-detection system. A variation should not be granted on the basis that the owner or occupant *chooses* to install more than 12 smoke alarms; the fire subcode official should grant the variation only when the design of the building is such that it *requires* more than 12 smoke alarms.

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In the case where more than 12 smoke alarms are required, a variation for the installation of a low-voltage smoke-detection system must be contingent upon all of the following:

1. Electronic supervision by an approved monitoring company for the life of the system;
2. A monitoring contract from the supervising company; and
3. A testing and service company contract which provides for maintenance, inspection, and testing per NFPA 72 for Household Fire Alarm Systems.

There are smoke alarms on the market that connect to an A/C power source which have a wireless transmitter, so that the smoke alarms can be interconnected to other smoke alarms without running wires between each alarm. These devices meet the requirements of IRC/2006, Section R313.1 and do not require a variation. However, the A/C power source must be supplied in accordance with Section R313.3 of the IRC/2006. This section requires that the power supply be from the building's permanent wiring, without a disconnect other than the required overcurrent protection. Additionally, these smoke alarms are required to have a battery backup supply. Completely wireless battery-powered alarms do not meet the power source requirements and are not an approved type of smoke alarm.