



September 15, 2006

TO: MIT AILG Community
FROM: AILG Facilities Committee
Steve Summit, Chairman
SUBJECT: Carbon Monoxide Detection Systems

As those of you who have attended past AILG plenary meetings will recall, the AILG Facilities Committee has been studying the impact on ILG's of the new state law that requires that each residential building to have carbon monoxide (CO) detection. After several months of consultation with code officials, fire protection consultants, MIT EHS and Dept of Facilities officers, and alarm system vendors, we have developed a recommended approach for all ILG's to achieve compliance with this law.

Part of the reason we have taken so long is that the CO regulations have changed several times, and they are still not final. The present draft of 527 CMR 31, which will govern CO detectors, is attached for reference. It has been adopted by the Board of Fire Prevention Regulations, but has not completed the hearing process. However, Howard Harrison, MIT's Fire Safety Systems Engineer, believes it will soon be adopted with possibly minor variations. At the moment it is the best information we have. Please note that state law requires that this solution be implemented by 1 January 2007, and thus we do not recommend waiting any longer before taking action.

Howard said that MIT is planning to adopt the "Alternative Compliance" provisions of Section 31.05. Based on Howard's description of MIT's strategy for its buildings, the committee recommends this approach to the ILG's as well. This option requires the following:

- 1) Monitoring of the CO detection system by a central station facility. (This is how your fire alarm systems are currently monitored.) This will require you to pay a monthly monitoring fee, just as you do now for your fire alarm system. The good news is that the CO detection system can use the same telephone lines as the fire alarm system.
- 2) A CO detector panel with hard-wired detectors and a separate, distinctive alarm sound from fire or security system alarms. Each ILG will need to evaluate its existing fire alarm system to determine if it can accommodate the CO detection system, but it is likely that your current fire alarm panel will not meet the new CO requirements without significant upgrading or replacement. Assuming that to be the case, you can either replace the fire alarm panel with a new one that would accommodate both the fire and CO detectors (an "addressable" alarm system that can distinguish between different types of detectors and respond accordingly), or install a separate CO alarm system. In most cases, it is likely to be much less expensive to install a separate CO alarm system, but if your existing fire alarm system is very old, it may make sense to replace it now with a new system that can also handle the CO detection.
- 3) The system will require detectors located at EACH potential source of CO production; *i.e.* fossil fuel burning equipment and appliances. This includes rooms or spaces that enclose furnaces, gas hot water heaters, gas clothes dryers, kitchen stoves and operational gas fireplaces. Detectors are available that sound an audible alert as well as signaling the central panel. Alternatively the audible alert can come from the central panel with separate horns for CO. Unless you are upgrading your entire alarm system as described above, we

recommend that you select detectors that sound an audible alert, to avoid having to also purchase and install horns.

- 4) Wiring permits and subsequent inspections are required from the City Electrical Inspector and the Fire Department as this is a life-safety installation. You should confirm that your installer obtains these permits.
- 5) There are two types of CO detectors commonly used: electrochemical detectors and "MOS" detectors. Based on Howard's recommendation, the committee recommends that you use electrochemical detectors.
- 6) Requirements for hot-air furnaces are confusing and may be changing. If you have a forced hot-air heating system, contact Peter Cooper to of MIT Department of Facilities for assistance in this matter. He can be reached at 617-258-8317 or plcooper@plant.mit.edu.

Section 31.04 also offers the approach of installing a plug-in CO detector with battery back-up in each sleeping room or within 10 feet of any bedroom door and at every level in the structure. The committee is not encouraging this approach since it is too easy for plug-in devices to be accidentally unplugged, and there would be need for a disciplined backup battery replacement program.

American Alarm is prepared to make installations which meet these recommendations. Their pricing plans for both existing and new customers are attached. You can contact Joe Gilligan at 781-859-2058 to arrange for a free estimate for your house. Of course, you are also free to hire any other licensed alarm contractor for this work.

We urge you to act promptly on this recommendation. The deadline for compliance is January 1, 2007. American Alarm and other system vendors are likely to face a rush this fall from many property owners trying to meet the January 1 deadline, and thus you may want to act now.



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Proposal for Carbon Monoxide System

Existing American Alarm Customers

Due to recent developments in the regulations and codes pertaining to Carbon Monoxide Alarms (527 CMR 31.00), I am pleased to provide existing American Alarm customers with the following proposal in order to enhance the safety and security for your respective location.

American Alarm will furnish and install the following:

- (1) Ademco Vista 20 Control Panel with Battery Backup
- (1) Ademco Vista Keypad
- (2) GE SR240CO Carbon Monoxide Detectors
All necessary fire rated cable, conduit and connectors
Connection to existing Fire Control Panel
Programming and final testing

Installation: \$1,700 Estimated
Monthly Monitoring Fee: \$ 10
Monthly Service Fee: \$ 8 per CO Detector

Service Fee includes the following:

- *Annual test and inspection of each device.*
- *The American Alarm Full Service Plan with minimum response requirements.*
- *CO Detector replacement after five (5) years of service.*

The above estimated price for the Installation includes two (2) Carbon Monoxide Detectors which is typical. This may vary from house to house depending on the labor hours for each house's unique construction. Each location will require a site visit to determine the required number of detectors and the installation labor estimate before an agreement to perform work is completed.

The Monthly Monitoring Fee is based on the assumption that there is an existing Fire Alarm Control Panel with an open zone of protection allowing for connection from the new Vista 20 Control Panel. **This system must be monitored by American Alarm.** If there is not an available open zone of protection, the new Ademco Vista 20 Control can be used as a stand-alone system and share the existing phone lines. The monthly monitoring fees will remain the same.

If you have any questions please feel free to call me at 781-859-2058.

Sincerely,

Joe Gilligan
Integrated Systems Consultant



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Proposal for Carbon Monoxide System

New Customer (No services currently provided by American Alarm)

Due to recent developments in the regulations and codes pertaining to Carbon Monoxide Alarms (527 CMR 31.00), I am pleased to provide you with the following proposal in order to enhance the safety and security for your respective location.

American Alarm will furnish and install the following:

- (1) Ademco Vista 20 Control Panel with Battery Backup
 - (1) Ademco Vista Keypad
 - (2) GE SR240CO Carbon Monoxide Detectors
All necessary fire rated cable, conduit and connectors
Programming and final testing
- Phone Line to be provided by customer**

Installation: \$1,700 Estimated
Monthly Monitoring Fee: \$ 25
Monthly Service Fee: \$ 8 per CO Detector

Service Fee includes the following:

- *Annual test and inspection of each device.*
- *The American Alarm Full Service Plan with minimum response requirements.*
- *CO Detector replacement after five (5) years of service.*

The above estimated price for the Installation includes two (2) Carbon Monoxide Detectors which is typical. This may vary from house to house depending on the labor hours for each house's unique construction. Each location will require a site visit to determine the required number of detectors and the installation labor estimate before an agreement to perform work is completed.

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