Sources of Carbon Monoxide in Your Home

Last month I mentioned that one of the biggest sources of Carbon Monoxide (CO) in homes comes from automobiles idling in the garage. This the number one cause of accidental poisoning death from CO. Warming your vehicle up even for a few minutes can produce CO concentrations in the 10,000's. Even if the garage doors are open, negative pressures and prevailing winds can cause the exhaust to seep into the house and linger for extended time periods. However, there are other appliances and potential causes in your house that can have the same negative impact on your heath.

Unvented combustion systems can also account for elevated levels of CO. Examples of these systems are gas ranges, fireplaces, small barbeques, and space heaters. The CO produced by these units vent directly into the air space. In older homes, or those that are not built as "tight" as newer homes, there is more air exchange due to air infiltration. This helps to dilute the toxic air with fresh oxygen. In newer, better insulated homes, this is more of a problem.

Another common source is appliance back-drafting. Using the technical jargon necessary to explain the venting would likely cause dizziness in some readers without high CO levels, so I'll try to stick to the basics. Appliances in category 1 could include wall heaters, water heaters, boilers, certain space heaters. The category is used to determine the type of venting in these appliances according to the pressure in the vent (positive or negative). If the vented air, which should be hot, does not escape the vent before it cools and condenses, it creates a "cap" in the vent that backs up the whole system. This results in a fuel rich scenario because of the imbalance of fuel and oxygen. This produces more CO than normal.

The most common cause of this is a vent system that is oversized. Too many elbows or excessive vertical height can easily create this problem. Also, a flue pipe that does not have the proper pitch can cause a backup of exhaust products.

To be sure about the venting in your home, you will need to contact a technician familiar with the manufacturer's recommendations for each appliance, whether it is for a fireplace, water heater, or furnace. Simply testing the home for CO when these appliances are in action would be a good start. If there are not elevated levels, then there is probably no need for immediate action. It is a good idea to test frequently or install high-end CO detectors in areas near these appliances. Just because an appliance is working properly at the moment, does not mean it will continue to operate efficiently.

If you follow the news, almost monthly you can read or hear accounts of accidental death due to Carbon Monoxide poisoning. All of these deaths could have been prevented with proper knowledge, by taking basic precautions, and by installing good CO sensors. Please do not become a statistic by failing to heed these warnings.