

THE SILENT KILLER, CARBON MONOXIDE (CO)

The temperatures have started to drop and you have probably been using your heat heavily and spending more time indoors. These actions increase your risk of being exposed to Carbon Monoxide poisoning, often referred to as CO. **CO is a colorless, odorless, and tasteless poisonous gas** that is emitted from many common fuel-burning household appliances and items. CO is often referred to as the “Silent Killer” as the deadly properties of the gas prevent its’ detection without a CO detector or alarm.

According to the U.S. Fire Administration, each year CO claims approximately 480 lives and sends another 15,200 people to emergency rooms for treatment. According to Owatonna Public Utilities (OPU) records there are approximately 80-100 calls per year related to possible CO concerns in Owatonna alone.

While many people have had **CO alarms** in their homes for years few people know that they should **be REPLACED EVERY 5 YEARS**; few alarms have a life expectancy greater than 5 years and some are only rated for 2-3 years! If you are in doubt about the age of your alarm, replace it. The alarms have delicate sensors that lose effectiveness and accuracy over time. You say “but I hit the TEST button and the alarm sounds”. All you are really testing is that the unit has power and not the effectiveness of the unit’s sensor. When you buy an alarm, mark the date of purchase on it so you know when to replace it.

It is recommended you purchase a model that uses an “electrochemical” sensor; it should say it right on the package. These are the same type of sensors that emergency officials use to detect CO levels and are expected to last 5 years. Most models of quality alarms will cost between \$20-\$50.

The 2006 state legislative session passed a **new CO Law** requiring approved CO alarms in all single-family homes and multifamily dwellings and apartment units. These laws will affect all residents of Owatonna and are outlined as follows. Effective this past January 1, 2007, all **newly** constructed homes and multifamily dwellings were/are required to have CO alarms installed. Effective August 1, 2008 all **existing** single-family homes shall be equipped with CO alarms. Effective August 1, 2009 all other multifamily or apartment dwelling units shall be equipped with CO alarms.

This law goes on to state that a minimum of one approved and fully operational CO alarm be installed within ten (10) feet of each room used for sleeping purposes. For more information on specific requirements or if you have questions regarding this law please contact the State Fire Marshal Division at 651-201-7200 or visit their web site at www.fire.state.mn.us.

CO is a by-product of incomplete combustion. CO sources can include malfunctioning or improperly vented appliances or equipment that operate on fossil fuels such as natural gas, liquefied petroleum (LP), fuel oil, etc.. Other CO sources include vehicle exhaust, blocked chimney flues, fuel burning cooking appliances improperly used for heating purposes, charcoal grills, garage heaters, fish house heaters, portable heaters, and small engines.

Never leave your vehicle running inside of your garage, always back the car out. Even if you have the garage door cracked the fumes will rise trapping the toxic fumes inside the garage and they may seep into your home.

It is important to have your furnace and gas hot water heater maintained annually to make sure they are burning and vented properly. Some danger signs that signal a potential CO problem are streaks of carbon or soot around the service door of your fuel burning appliance and moisture collecting on the windows and/or wall of your furnace room. Periodically look at your pilot light of your gas appliances; it should be about 90% blue in color. A yellow flame indicates the appliance is not working right and may be giving off harmful fumes.

The most common warning signs of CO poisoning are flu-like symptoms, such as headache, nausea, vomiting, and fatigue. If the flu-like symptoms are not accompanied by fever, if everyone in the family is ill, or if symptoms disappear when you leave the house, you might have a CO problem in your home.

When a victim inhales CO, the toxic gas enters the bloodstream and replaces the oxygen molecules in their blood. This deprives the heart and brain of the oxygen necessary for their body to function. CO has a cumulative affect on your body, meaning your body accumulates the toxins over time. So even relatively low-level exposures that are encountered for extended periods can be harmful and even deadly.

The following chart gives examples of CO levels and exposure times;

Concentration of CO in AIR (PPM=parts per million)	Approximate Inhalation Time and Toxic Symptoms Developed
35 ppm	The maximum allowable concentration for continuous exposure for healthy adults in any 8-hour period, according to OSHA rules.
200 ppm	Slight headache, fatigue, dizziness and nausea after 2-3 hours.
400 ppm	Frontal headaches within 1-2 hours, life threatening after 3 hours.
800 ppm	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2-3 hours.
1,600 ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour.
3,200 ppm	Headache, dizziness and nausea within 5-10 minutes. Death within 25-30 minutes.
6,400 ppm	Headache, dizziness and nausea within 1-2 minutes. Death within 10-15 minutes.
12,800 ppm	Death within 1-3 minutes.

*This chart relates to the exposure of healthy adults. Pregnant woman, infants, children, senior citizens, pets, persons with heart or respiratory problems and smokers may experience symptoms at lower levels of exposure.

If your CO alarm goes off the first thing you should do is to move your family, pets and yourself to a location with fresh outside air. Then you should call your emergency services (911) if any member of your family is feeling ill. If you feel healthy you should call OPU at **507-451-1616, 24 hours a day** to have a Gas Service Professional come out

to check for dangerous levels of CO in your dwelling. This service is FREE to you. Do not air out your home prior to the service worker arriving, as this makes it difficult to pin-point any problem areas. You should not look for possible causes of CO on your own without having a professional come out to verify the CO levels first.

Regardless of whether you feel symptoms, you should never ignore the alarm. Have it checked out every time, OPU is glad to help. If you have any questions in regard to CO or natural gas safety please feel free to contact me at 507-451-2480.