**Avoiding Carbon Monoxide Hazards**

Every year, when the weather turns cold, homeowners reach for household thermostats and set the temperature to 68 or 70 degrees. Most people give little thought to whether the furnace exhaust system – the chimney and connector pipe – is ready to provide safe, effective service.

Consumer confidence in the convenience and safety of today’s home heating systems is usually well-placed. The oil and gas heating industries have achieved impressive safety records. Nonetheless, over 200 people across the nation are known to die each year from carbon monoxide poisoning caused by problems in the venting – out of their homes – of toxic gases produced by their heating systems. This is according to statistics compiled by the U.S. Consumer Product Safety Commission. Other agencies estimate actual numbers at between 2,000 and 4,000.

***Around 10,000 cases of carbon monoxide-related “injuries” are reported each year, but an annual chimney inspection can help prevent these incidents.***

**What Carbon Monoxide Does to You**

Too much carbon monoxide in your blood will kill you. Most of us know to try to avoid this. Less well known is the fact that low-level exposure to this gas also endangers your health.

The side-effects that can result from this low-level exposure include permanent organ and brain damage. Infants and the elderly are more susceptible than healthy adults, as are those with anemia or heart disease.

The symptoms of low-level carbon monoxide poisoning are so easily mistaken for those of the common cold, flu or exhaustion, delaying proper diagnosis. Be sure to see your physician about persistent, flu-like symptoms, chronic fatigue or generalized depression. Meanwhile, it makes good sense to put heating system inspection and maintenance on your annual get-ready-for winter list. Prevention is the best cure.

**Causes of Heating System Problems**

Why is poisoning from carbon monoxide on the rise? And why does it stem primarily from home heating systems that – at first glance – seem the same as those that have been used safely for years?

***Modern homes are more air-tight. Homeowners are aware of the cost of heating drafty homes and have taken steps to seal up windows, doors and other areas of air infiltration. As a consequence, less fresh air can enter the home and less polluted and stale air can exit. When furnaces and boilers are starved of the oxygen needed to burn fuels completely, carbon monoxide is produced.***

Manufacturers are now designing heating appliances whose greater efficiency reduces cost, conserves natural resources and decreases environmental pollution. This new breed of high-efficiency gas and oil furnaces – when vented in to existing chimney flues – often do not perform at an optimal level. The differences in performance increase the chances that toxic gases will enter home living spaces.

The above conditions point out many older, ongoing problems that still need detection and correction to prevent toxic gases from filtering into the house. These include damaged or deteriorating flue liners, soot build-up, debris-clogged passageways, and animal or bird nests obstructing chimney flues.

**Caring for Your Chimneys & Flues**

When gas and oil burned for heat, the dangerous fumes produced range from soot (particulate matter), to nitrogen dioxide (also toxic), to acidic water vapors formed when moisture condenses. None of these pollutants should be allowed to leak from the chimney into your living space.

Besides carrying off toxic gases, chimneys also create the draft (flow of air) that provides the proper air and fuel mixture for efficient operation of the heating appliance. Unfortunately, many chimneys in homes throughout the country either are improperly sized or have conditions that make them unable to perform their intended function.

**Chimney Problems to Avoid**

Oil and gas furnaces have distinct burning characteristics and produce different combustion by-products. However, the chimneys and connector pipes that serve them are both subject to weathering, animal invasions, deterioration, and the accumulation of nest materials and debris. And both need regular care and maintenance.

You should have your oil flue inspected annually because deposits of soot may build up on the interior wall of the chimney liner. Excessive soot can cause chimney fires, flue deterioration, and chimney blockages that direct toxic fumes back into the house and cause inefficient furnace operation.

Natural gas is a clean-burning fuel, but today’s high-efficiency gas furnaces produce fumes that contain high levels of water vapor. Since these vapors also contain chlorides picked up from house-supplied combustion air, the flues are subjected to more corrosive conditions than before. Even worse, many gas appliances use chimneys that once served oil furnaces. Terracotta (clay) chimney liners can flake off under corrosive conditions producing debris that can block the chimney.

These issues may also force carbon monoxide, fumes and soot into the living spaces of your home. They may cause a one-time, high-level exposure situation or release smaller amounts over a longer period. You should never ignore these problems.

**Preventing Problems**

Many government agencies in the United States now recognize the importance of annual heating system inspection and maintenance in preventing carbon monoxide poisoning. The U.S. Consumer Product Safety Commission, the U.S. Environmental Protection Agency, the National Fire Protection Association, and the American Lung Association all encourage the regular maintenance of home heating systems and their chimneys to keep “the silent killer” at bay.

A well-tuned furnace or boiler will operate efficiently and produce a warm and comfortable home. An overlooked heating system can produce death and heartbreak. ​ The benefits of a well maintained heating system outweigh the risks of neglect. It is wise to schedule an annual chimney inspection by a CSIA Certified Chimney Sweep® and swept or repaired as needed. This can keep illness or death from carbon monoxide poisoning from claiming you or those you love.