An Informational Release from the Interfaith Coalition on Energy of WNY

A Program of the Network of Religious Communities

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Bundle Up For Cool Weather

The air is getting crisper every day - it's time to get ready for the heating season. Follow these tips to help keep heating costs at a minimum at your facility:

- Have the combustion efficiency of your furnace or boiler checked. Be sure any outside combustion air access to the heating unit is not obstructed and filters are clean and in place.
- Inspect the distribution system of your heating plant. Are warm air duct registers open and unobstructed, radiators clean and temperature control valves operating as they should? Is the distribution system balanced so all areas served by the thermostat are close to the temperature called for?
- Install storm windows, seal natural ventilation shafts, caulk around windows and doors and make sure weather-strip is in good condition.
- Use an automatic setback thermostat to keep temperatures as low as possible when buildings are not occupied.

Tips For Efficient Boiler Operation

These tips will help you keep your boiler operating efficiently and safely . . . and may reduce your annual heating costs by ten percent or more:

Before start-up

- Have qualified service personnel test and adjust the combustion efficiency. Ask for a report of the results to confirm the efficiency is within acceptable range for that unit.
- Test the safety relief valve for freedom of operation. Check all temperature and pressure controls, gauges and high and low gas pressure switches to insure satisfactory performance.
- Have your contractor thoroughly clean, recondition and test the low water cut-off and make up water feed devices.

Daily or weekly

- Check all temperature and pressure controls, gauges, safety relief valve, high and low gas pressure switches and the low water cut-off.
- Monitor the maximum temperature of the flue gases. An increase during the heating season means the operating efficiency of the boiler is falling. Your service contractor should be called in to determine why and correct any problem that exists. (If there is no permanently mounted thermometer in the flue, have one installed during the next

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Utility Rate Review

Several local institutions have been approached recently by companies offering - for a share in any refunds obtained - to review utility bills to see if the institution has been overcharged and is due a refund. Most organizations can determine on their own if they are being billed at the lowest rate and may not wish to share their savings with a consultant if they are not.

If your utility bills show a residential rate (preferably time-of-use for electricity) and no sales tax, you are probably being correctly billed. If you wish, your customer service representative can furnish annual cost projections to help you compare rates. Time-of-use electric rates and bulk purchasing of natural gas have been featured in articles in past issues of Energy Matters.

If you have further questions about your utility rates, call ICE Technical Liaison Viki Ingersoll at 847-8389 for a free phone consultation. She will help you determine if your rate is appropriate and advise you what to do if it isn't.

Your local utility can be reached at the following numbers:

National Fuel 1-800-365-3234
NYSEG 1-800-572-1111
Niagara Mohawk 1-800-642-4272

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service call, preferably one that indicates the highest temperature reached and can be reset easily. This will allow readings to be obtained even when the boiler is not firing.) If you have test equipment, monitor the percent CO^2 or O^2 (and smoke content, if oil fired) in the flue gas.

- Monitor the pH of the boiler water and use water treatment as necessary to reduce scale build up and corrosion.
- "Blow down" boiler to remove sludge.
- Monitor make up water use. (Install a water meter on the make up water line to the boiler if you don't have one.) Excessive use, or an increase in use, indicates a leak, which should be repaired as soon as possible. Even small leaks, left unchecked, will increase heating costs, reduce efficiency and shorten boiler life.
- Keep a boiler room log to record temperatures, tests and maintenance performed each day.

Other

Insulate water, steam and condensate return lines as needed to prevent heat loss or freezing.

Plan Now For Steam Trap and Vent Repairs

Steam traps are devices used in two pipe steam systems to allow condensate and air to enter the condensate return line, while keeping the steam in the radiator. Steam in the return line can damage other traps in the system, is noisy and will interfere with condensate return to the boiler.

The typical life of a steam trap, which may open and close as many as half a million times in a heating season, is three to five years. Traps that don't operate properly can cause heating bills to rise dramatically.

There will be at least a fifteen-degree temperature drop between the radiator and pipe on the other side of the trap when a steam trap is operating properly. Repair traps that are not operating properly as soon as possible.

Air vents in hot water and single pipe steam systems allow air in the radiation to be displaced by the entering steam or water. Air that stays in the radiation interferes with heat transfer, reducing the efficiency of the system and increasing heating costs.

A properly operating air vent will readily discharge air without allowing steam or water to pass through. If the radiation doesn't get warm when it should be full of hot water or steam, the vent probably needs to be repaired. Repair vents that leak water or steam immediately.

Routine monitoring and preventative maintenance of steam traps and vents will help to keep heating costs at a minimum. We recommend that you prepare a list of all steam traps and vents in your boiler system and check each one at least twice during the heating season to be sure they are operating properly. Also check them if there is a heat distribution problem or other signs of failure.

Even if they are working properly, plan on repairing or replacing traps or vents every three to five years to avert problems. To make this more manageable, service a quarter to a third of your traps or vents each summer when the boiler is shut down.

Don't forget these essentials as you work to keep your heating costs at a minimum:

Steady State Efficiency: The steady state (or combustion) efficiency of a heating plant is the percentage of heat produced by a fuel-burning appliance that is available to heat a given area. The lower the efficiency, the greater the amount of heat that is going up the chimney.

The steady state efficiency of natural gas and fuel oil burning heating plants should be checked, and adjusted if necessary and feasible, near the beginning of each heating season. Ask your heating contractor to test the efficiency and report the before and after results to you at the end of the service call. Optimum results will usually be in the high 70's to 80% efficiency.

Distribution System: Heat produced by a boiler or furnace is distributed through a building by pipes and radiators or ducts and registers. The distribution system should be checked at least once in the heart of the heating season to be sure that heat is being delivered as desired to the appropriate areas. Check that daytime temperatures are adequate, but not unnecessarily high.

Monitor temperatures during unoccupied times to be sure that the desired set back is achieved. Use a recording thermometer (ICE has one if you don't) to see how long it takes the temperature to drop. You may find that temperatures can be set back much sooner than you thought.

Check all thermostats to see that they work and are set properly. If radiators don't warm up evenly when they should, check air vents and steam traps to be sure they are working properly. Be sure valves are not closed off, restricting steam or water flow into the radiator.

Feel free to call ICE Technical Liaison Viki Ingersoll at **716-847-8389** with your heating efficiency questions.