Home Heating in an Emergency

At some time you may face a heating emergency — when your home heating system is inoperative for hours or days. At that critical time you must decide how to meet the emergency, either with an alternative source of heat or by seeking shelter elsewhere.
Safety

Safety is of prime importance in choosing an alternate form of heat. Consider all potential hazards and eliminate as many as possible, keeping in mind that your degree of protection is lower during a community emergency. Normal community services such as police and fire protection, doctors, hospitals and highway maintenance may be in great demand and unable to respond to your emergency immediately. Under emergency conditions, you may have to do certain things you wouldn't normally consider. Use extreme caution.

Planning

The first step in making a plan is to determine the conditions your family might face if the heating system fails. Take your climate into consideration — how cold can it get? Because all members of the family would be affected, each should help with the planning. Discuss what you might do if the heating system went off for several days.

If your home is heated electrically, failure would obviously be caused by lack of power. But don't forget that most other systems depend on electricity, too. Oil burners usually have electrical fuel injectors and ignition. Hot-air systems rely on a fan for air circulation; hot-water systems with zone valves and circulator pumps; coal furnaces with motorized stokers also need electricity. Most thermostats require electricity.

Imagine that your area is experiencing an intense storm. It is cold and telephone service is disrupted. Then, with a pencil and pad handy, discuss how you would cope with the crisis. The family would have to determine what could be done to provide home heat, or at least how to keep warm. Discuss sources of alternate fuels available, how to get them and how to use them, what protective measures would be necessary such as keeping pipes from freezing and supplying water if the pump is not operating. As part of the discussion you probably will want to draw up a list of additional obstacles that might be encountered, the responsibilities of each family member and supplies available.
Your resources

First, consider the resources you now have in your home for meeting emergencies. Because no two homes are the same, homeowners should assess their own situation and prepare accordingly. Could your heating system, with simple modification or through manual operation, continue to heat all or part of your home? What other heating devices are used or stored in your home, garage or barn? List them. It may include a fireplace; a charcoal grill; a wood, coal, gas or oil stove or space heater; a camping stove or heater; electric or gas oven and surface heating units; a portable gas oven; a gas-fired hot water heater; or portable electric heater.
List fuels available in your home or within reasonable distance. Which of them could be used in the above list of devices? Possible alternative fuels include: oil or kerosene; furnace, stove or cannel coal; firewood, lumber scraps, corncobs, straw; gas, campstove fuel, charcoal, starter fluid, alcohol, gasoline or motor oil; or newspapers and magazines. If your heating device and fuel can be matched, would they provide enough heat to warm at least one room in your home? Is there enough fuel for several days? Do you have a secondary source of emergency heat? If your regular heating system cannot be modified for an emergency, consider buying, building or adapting a device or system that will. The choice might be a space heater, cast iron or sheet-metal stove or a catalytic heater. A small generator may be able to keep your furnace in operation. Your supplier or your local MU Extension center can help you decide what capacity generator you need. Try to avoid depending on the same fuel for emergency heat as you have in your normal heating system.

Preparation

Now that you have decided how to heat your home during an emergency, it is time to get busy making preparations. Good planning now will give your family confidence when an emergency arises.

You will probably have to make some changes in your home or in your heating system to accommodate another heating device. If you can't make them, call in someone who can. Any device that burns fuel must be vented outside the house — both to eliminate smoke and gas and to provide oxygen for combustion.

Altering regular heating systems

Minor alterations to regular heating systems might be considered: Because automatic heating systems are often dependent upon electricity, you might wish to consider an emergency generator to provide power for full operation. This applies only to fossil-fueled systems with pumps, blowers, circulators, fuel injectors, electric ignition and thermostats. Electrically operated valves in many steam or hot air systems can often be operated manually. Hot air systems, depending on installation, are capable of providing limited heat without a blower.

A coal-burning furnace can be fired the old fashioned way — with a shovel. Most small electrical generators supply only very limited power and are inadequate for heating a home.
Sometimes another type of fuel can be burned in a heating system. For example, wood can be used in a coal furnace. Get to know the capabilities and options of your primary heating system. If it can function at least partially in an emergency, it is your best heat source.

Providing vents and flues

Install a "thimble," (a metal pipe which is inserted through the side of the chimney into the flue) to allow a stove hookup or space heater. If the heating device will be connected only during an emergency, fit the thimble with a metal or asbestos cap to cover the hole.

Note: Chimney flues are designed to accommodate a single heating device at a time. Using more than one heating device at the same time on the same flue may result in smoke damage and improper burning of the fuel. If your auxiliary heating unit is to remain attached to the flue being used by the furnace, fireplace, or other burner, it should be fitted with a damper which will close off the device. Gas flues, which are usually smaller and lighter, cannot safely accommodate oil, coal or wood burners. Gas devices, however, can be hooked to oil, coal or wood flues.

Some fireplaces are designed for appearance, not for heating ability. If yours doesn't heat well, plug the throat with a piece of sheet metal with a hole cut for a stove pipe. In an emergency, a stove or heater can be set on the hearth. Stoves are better, more efficient heat producers than fireplaces.
Conventional masonry fireplaces are often not efficient producers of heat and may take more heat from a room than they put in. Heat circulating or "heatilator" fireplaces are much more efficient. Their ease of installation may offset their initial higher cost when compared with construction of conventional masonry fireplaces. Also, a glass-doored, heat-circulating fireplace with special outside air inlets makes a satisfactory heater that can use wood, coal and other combustibles. If your present chimney cannot be used with an auxiliary heating system, consider installing a prefabricated chimney for use with your alternate source of heat.

Using other fuels

If oil is your emergency heating fuel and you have an oil furnace, install a drain cock or valve in the fuel line to draw oil from the tank. A siphon hose might be used if the tank has an access plug. An emergency generator to run your primary heating system will involve special wiring. Ask an electrician for advice. If gas is the standby fuel, be sure to have proper fittings, tubing and tools on hand for a quick, safe hookup or changeover. Heat pumps, similar to air conditioners, can supply considerable amounts of heat under certain conditions. They may be practical for your situation as a source of heat which requires only electricity.

There is considerable heat in well water, which is usually at least 50 degrees F, in the northern states. Depending on the water depth, this may be an efficient source of heat. The heat pump removes heat from the water and transfers it to the home. In warmer areas heat can be removed from outside air. Your local heating or air conditioning contractor can help you decide if a heat pump is practical for your situation.

Generators for emergency power

An electric generator could power furnace blowers, oil burners and some other appliances in time of emergency. Just how many appliances you could operate depends on the output of the generator. Before buying a generator, the homeowner should add up the wattage required. Motor requirements should be figured at their starting rate (much higher than the running rate) to arrive at the total number of watts required at peak use. Generators are rated according to their kilowatt output (a kilowatt equals 1,000 watts).

Additional costs would be necessary to rewire the home service entrance, to install a transfer switch or to add an alarm device or other accessories as desired, and for regular maintenance of the standby system. Home generators are usually driven either by an attached gasoline or gas-powered engine or a portable power source such as a tractor. The best information on a generating system for your home can be obtained from a local supplier, your utility company, or your local Extension Center or civil preparedness representative.

Conserving heat

What other materials exist that could be used for conserving body warmth or emergency heat? Winter clothing, especially bulky items and outdoor garments, sleeping bags and small tents, blankets and bedding, drapes, curtains, slipcovers, rugs, large towels, etc., should be considered. Remember, if all else fails (and you can't get to other shelter), bed is the warmest place to be with other family members and lots of covers.

How much of your house should you heat? When the heat goes off and you are going to have to rough it, the smaller the space you heat, the easier the job will be. What you do will be dictated by the amount of emergency heat you have available, the floor plan of your house, and the severity of the cold outside. If you will be utilizing your fireplace or a stove requiring a chimney flue, the choice of rooms has been made for you. If, however, you will be able to obtain some heat from your furnace, select an area near it to cut down on heat loss that occurs in long pipe or duct runs. If you plan to use a portable heating device or have a choice among several heating zones, select an area on the "warm" side of the house away from prevailing cold winds. This area should have good insulation, as few windows as possible to minimize heat loss and should be capable of being isolated from other unheated areas either by closing doors or blocking openings to prevent drafts and heat loss. You may want to hang blankets or heavy drapes over windows to further reduce heat loss.

If you will be using your furnace in an emergency, know in advance how to prevent it from sending heat to unnecessary areas. In addition to shutting off the thermostat, this may involve blocking hot air ducts or shutting off certain steam or hot water lines.

Storing emergency fuel

Obtain fuel for your alternate heating system and store enough to last several days. Store it in a safe, convenient place such as a garage, carport, or shed away from the house. Do not use your emergency fuel for any other purpose, and check the supply regularly. What resources are available for emergency assistance in your community? There may be town, school or county plans for coping with emergencies. Your local Red Cross or civil preparedness authorities may have contingency plans and supplies. Find out.
Are there stockpiles of fuel available such as coal, oil or firewood? (Some towns keep emergency supplies of firewood on hand at dumps or highway department sheds. If yours doesn't, perhaps it should.)
Are there emergency supplies of foodstuffs and water? A civil preparedness representative or your local
If your family were forced to leave its home, where could it go? Under what conditions? Schools and municipal buildings often have emergency lighting equipment and heat.
You may want to consider a cooperative emergency plan which combines your resources with those of a neighbor.

Mobile homes

Mobile home owners should consider installing a prefabricated sheet metal chimney assembly through a wall or the roof. Mobile homes are particularly well-adapted for use of prefabricated chimneys. Owners might also wish to consider purchasing a prefabricated fireplace which is highly efficient in operation, light in weight, easily installed, attractive and lower in cost than masonry units. If a prefabricated chimney or fireplace is purchased, be sure it is Underwriters' Laboratories (UL) approved.
Remodeling, building or buying a home

Now would be a particularly appropriate time to think of emergency heating. Consider this feature in shopping for older houses and include it in construction or renovation plans. The extra cost of including a "second system" will be more than made up for in peace of mind later. The simplest approach might be to have a capped emergency thimble in a single flue chimney for an emergency stove. More desirable, but more expensive, would be to include two or more flues in your rebuilt chimney to accommodate the furnace and secondary heating devices such as portable heaters, parlor stoves or Franklin-type fireplaces. The stoves make attractive home features, and a fireplace will add value to the house at least equal to the cost of its construction.
A number of modern sheet metal fireplaces, either free-standing or wall-mounted that do not require expensive masonry work, are available. They can utilize an easily assembled UL-approved prefabricated chimney pipe that vents through a wall or roof to the outside. One might be attractive in your home. Prefabricated chimneys can also be installed in mobile homes.

Depending on the style or design of your house and its heating system, you might wish to install a second conventional system independent of the first for emergency heating of a portion of the house. A gas floor or wall furnace large enough to heat one or two rooms would meet emergency heat needs; electric heaters could be good insurance when the gas supply fails. Electric generators should be considered by the rural homeowner, especially if it is part of a farm or business which relies on electricity for operation.

Related heat loss problems

Keeping your family warm obviously won't be the only problem you will face if an energy failure strikes your home. Consider the following:

Freezing pipes

Without heat for at least several hours and the temperature well below freezing, you will have to protect exposed plumbing. Drain all pipes, including hot water heating pipes, in rooms that will not receive emergency heat. Familiarize yourself with your home plumbing and heating layout in advance so you can do the job quickly and thoroughly to avoid repairs later. It may be necessary to install additional valves to enable you to drain only portions of your system. Don't forget the sink, tub and shower traps; toilet tanks and bowls; your hot water heater; dish and clothes washers; water pumps; and your furnace boiler, if you have one.

Water for household use

If you rely on electricity to run your water pump, a power outage could restrict your water use. Save as much water as possible while draining your system and store it in closed or covered containers, preferably where it will not freeze. In addition to water in pipes, a sizable amount can be collected from your hot water heater and toilet storage tanks. Water from the heating system may be unfit for drinking or other household use.

Lighting

Have a good supply of candles, matches and at least one kerosene or gas lantern with ample fuel. You should have a dependable flashlight with spare bulbs and batteries. If any of these materials are used when there is no emergency, they should be immediately replenished.

Sanitary facilities

If your water supply is shut off, sanitation will become a problem. Disconnect the chain or lever attached to the toilet handle to prevent accidental flushes and instruct users to put toilet paper in covered containers. Flush only often enough to prevent clogging. An alternative might be to purchase a portable camper's toilet.

Emergency cooking

During an emergency, providing hot meals for your family may be a problem. A camp stove can be used or, if necessary, cooking can be done in a fireplace. Keep a supply of meal-in-a-can foods such as stews, soups, canned meats, beans, or spaghetti to supplement dry stores like cereal, bread, dried meats and cheeses. Freeze-dried meals for campers and backpackers are often excellent foods that can be prepared with a minimum of heat.

Safety

Also, if you don't already have them, a good fire extinguisher and first aid kit are necessities. Review all your plans and preparations to ensure the safety of your family. Emergency actions are of little value if they lead to a new or bigger emergency.