



Mitigation measures

Protect Your World From Natural Disasters

Staying Warm and Safe

Alaska



**Alaskans
plan ahead
for winter!**



Alaska's winter can bring extreme cold, high wind, falling trees, heavy snow, avalanches and more. An added challenge may be the failure of electrical power and heating systems. Alaskans need safe and reliable alternative ways to stay warm.

Typical winter problems and possible solutions include:

- **Many types of furnaces require electrical power for the pump, fan and thermostat controls.** During a power outage a small portable generator may be able to power the furnace system, but plan ahead to have an electrician install the equipment to safely switch the furnace to the generator power source.
- **Some types of oil stoves or heaters (with elevated tank providing gravity flow of fuel) will work without a source of electricity.** But when the temperature falls to about 20 degrees Fahrenheit, #2 diesel oil starts to congeal, while #1 grade oil will flow until the temperature approaches minus 60 degrees. Options: Use #1 or mix the two types of oil; or use a diesel fuel additive that lowers the congealing point of oil (to be effective, the additive must be added while the tank is being filled).
- **Water in diesel fuel can cause ice blockage in the fuel line.** Install an oil filter at the start of the fuel line and occasionally drain water that accumulates at the bottom of filter canister.

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- **Protect the tank, oil filter and fuel line from extreme cold.**
Options: If you have electrical power, install a small light bulb inside an enclosure that surrounds the fuel tank and pipe; trap the heat of the sun by draping a clear plastic tarp over a frame that covers the tank and fuel line; or pile a layer of insulating snow over the tank and fuel line.
- **Oil stove exhaust pipes and air-intake vents may become blocked by ice or snow.** Insulated or double-wall stovepipe will prevent some types of icing blockage. A ladder may be needed to provide access to the top of the chimney or stovepipe for ice and snow removal.
- **Propane heaters and other gas-fired appliances stop working when temperatures drop below minus 44 degrees Fahrenheit.** Best option: shelter and insulate the tank and line.
- **Wood and coal stoves are usually reliable for primary or backup heating but require some maintenance.** Clear bricks, mortar, ash, snow, ice or bird nests from the stovepipe or chimney. Avoid creosote buildup in the stovepipe or chimney by burning only dry firewood and occasionally cleaning the pipe with a proper sized brush.
- **During the coldest weather people often build very hot fires that pose extra danger.** Remove or protect nearby combustibles (furniture, clothing, walls and so on). Look for hidden fire sources such as an incorrectly installed or rusted and cracked stovepipe. (Inspect where the pipe passes through the ceiling and roof by pulling back the circular flange and peering into the ceiling cavity with a flashlight. Charred ceiling joists, rafters or roof deck mean serious fire danger!)
- **Backup heating systems may not provide adequate heat to protect water pipes.** Some water piping may be far from the heat source or may be poorly insulated. Options: It sometimes helps to allow faucets to drip, but catch drips in a large bowl or pan, rather than risk causing the drain to become ice-clogged; if electricity is available, wrap heat tape around vulnerable pipes; and protect the water supply pipes from extreme cold by draining the entire system before the water freezes (this is difficult unless the piping was designed to slope toward a low spot and drain valve).
- **Unvented gas or kerosene heaters are too risky to use in a home, but are fine for temporary use in a large barn or drafty work shed.** When doors and windows are closed, especially in small, tight Alaska homes, the buildup of odorless and colorless carbon monoxide gas from unvented heaters can be fatal. Also, it's never safe to operate a gasoline- or propane-powered electrical generator in a house or attached garage, due to the deadly exhaust gas.

If all of the safe options for heating your home fail, the best alternative may be to put on many layers of warm clothing and, if possible, evacuate to a safe and warm location.

Carbon Monoxide Facts:

More deaths from carbon monoxide (CO) poisoning occur in Alaska per capita than in nearly any other state (Wyoming has a higher rate). A study of five villages found elevated CO levels in nearly 10 percent of the homes, most commonly because of improperly vented tankless ("on demand" type) propane water heaters, stove pipe leaks, and gas cooking stoves that had been left on for several hours.

The symptoms of CO poisoning are: headaches, fatigue, dizziness, weakness, confusion and nausea.

Many of these symptoms are similar to those of the flu, food poisoning, or other illnesses. **If you experience symptoms that you think could be from CO poisoning: Get fresh air immediately. Open the doors and windows, turn off combustion appliances and leave the house. Then call 911 for further instructions.** Carbon monoxide alarms, when properly installed, can save lives.

Information and Resources:

Alaska Division of Homeland Security & Emergency Management

<http://www.ready.alaska.gov/>

University of Alaska Fairbanks Cooperative Extension Service
www.uaf.edu/ces

Cold Climate Housing Research Center
www.cchrc.org