



Farm Fire Safety Evaluation Guide

All farms, large and small should periodically be evaluated for potential hazards and conditions that could lead to a fire. This fire safety checklist was designed to assist Vermonters to reduce the risk of fire occurring on their farm properties.

GENERAL BUILDING SAFETY

- **Make sure buildings are designed and built to carry the minimum roof snow load for your town.**
- **All barns, regardless of size, should have a minimum of two exits, both easily used and not blocked.**
- **Use building materials that are flame retardant or fire resistive.** Such as sheetrock.
- **Practice good housekeeping;** cobwebs and dust are combustibles! Stalls and pens should be cleaned out regularly and the ceiling and beams swept. Unnecessary accumulations of dust can add fuel to a fire.
- **Install and maintain lightning rods and grounding cables.** Lightning rods are the best solution to preventing lightning-source fires. These rods give lightning a direct path to follow to the ground, keeping your barn and the livestock inside safe. Check grounding cables frequently and repair if worn or damaged.

CONTACTING EMERGENCY SERVICES

Knowing how to contact emergency services and being able to direct them to the right place will avoid unnecessary delays in response time.



- **Prominently post the fire department phone number (or 9-1-1) at each telephone.**
- **Prominently post clear, concise directions to your property at each telephone.** This will allow you to provide clear instructions to responding emergency services.
- **Make sure your neighbors and the fire department know any important information about your farm and the buildings.** Provide them a copy of your pre-plan data sheet.
- **Address Numbers** New and existing buildings need to have approved address numbers placed in a position to be plainly legible and visible from the street or road fronting the property.

INSPECT YARD AREAS

Keeping a clean, clear space around buildings and in general yard areas can help reduce the risk of fire spreading from one building to another.

- **Remove combustible materials (general storage/new or salvaged building materials) from around buildings.**
- **Remove brush, weeds, and tall grass from around buildings.**

PROVIDE ACCESS FOR FIREFIGHTING

Ensuring firefighters can access all areas of your property and can gain access to all buildings will avoid costly delays once they arrive.

- **Provide and maintain a clear unobstructed roadway or solid yard area to each building.**
- **Park farm equipment and machinery in an area that does not restrict traffic flow around the barn.**
- **Provide gateways through fences with a clear width for fire department apparatus.**
- **Provide clear year round access to reliable water supplies that might be required for firefighting (i.e., dry hydrants, ponds, streams etc.).**
- **Maintain wells and pumps used for farm water supply.**



CONTROL HAZARDOUS PRODUCTS AND ACTIVITIES

Following safety precautions is important when handling hazardous products. Ensure all hazardous products are clearly labeled to further eliminate guesswork in an emergency situation.

- **Store hazardous products** (i.e., herbicides, insecticides, fungicides, fertilizers etc.) according to manufacturer's recommendations and applicable regulations.
- **Mix fertilizers and chemicals carefully in well-ventilated areas.** Have materials on-hand to clean up spills immediately.
- **Protect cylinders containing compressed gas from mechanical damage to the valves and the cylinders.**
- **Perform welding and cutting operations only in areas that are free of combustible materials.** Protect adjacent areas by maintaining clearance from combustible materials or by using non-combustible shielding.

CONTROL POTENTIAL IGNITION SOURCES

Understanding how to prevent fires from starting is essential in protecting your farm or agri-business from fire loss. Control potential ignition sources.

- **Strictly enforce a 'NO SMOKING' policy in and around all farm buildings.** Post 'NO SMOKING' signs in prominent places where they can be seen easily.
- **Keep engines, motors and machinery well maintained and clean to prevent malfunction and overheating.**
- **Refuel equipment outdoors.**
- **Make sure equipment is turned off and allowed to cool before refueling.**
- **Maintain adequate clearance to combustibles around heaters.**
- **Always obtain the proper burning permits before burning any brush or grass.** This includes contacting the town fire warden or other official in your town.
- **Keep burning piles well away from the barn and maintain at least a 50 foot fire break around the barn.**

INSTALL AND MAINTAIN FIRE PROTECTION SYSTEMS AND PORTABLE FIRE EXTINGUISHERS

Reduce the risk of fire loss on your property by developing fire protection measures to extinguish or control a fire until firefighters can arrive.

- **Install multi-purpose fire extinguishers in your barn, tool shed, and other farm buildings.**
- **Install multi-purpose fire extinguishers on tractors, combines, and other mechanical equipment and machinery.**
- **Make sure family members and employees know where extinguishers are located and how to use them.**



- **Maintain your extinguishers by inspecting them regularly and recharge them when necessary.** If you have water type fire extinguishers, protect them from freezing.
- **Consider installing smoke detectors, fire alarms and fire sprinkler systems** – there are special alarms and systems that are designed to operate in the barn environment. Sprinkler systems are the most effective lifesaving and fire suppression devices in any structure, including your barn. Fire sprinkler systems can seem expensive but it's a worthwhile investment.

MAINTAIN ELECTRICAL APPLIANCES AND WIRING

Electricity can provide a dangerous supply of safety hazards that can hinder operations and ultimately start a fire.

- **Only use equipment that is labeled for Agricultural or Commercial use.** Do not use household equipment or fans.
- **Use stall fans, space heaters, lights, and radios only when someone is in the barn.** Use only listed electrical appliances and equipment.
- **Disconnect or unplug electrical equipment and appliances when not in use.**
- **Ensure extension cords are only used on a temporary basis and are not supported by any metal objects** (ie: nails, screws, hooks, or pipes) Never use extension cords with heat lamps or heaters.
- **Enclose exposed wiring in barns and tool sheds in conduit to protect against exposure to weather, animals, and mechanical damage.**
- **Ensure electrical repairs and installations are performed by or inspected by a licensed electrician.**
- **Ensure that emergency generators are in good working order, properly wired and inspected by a licensed electrician.**
- **Always consult and follow your generator's operator's manual.** All generators operate differently and have safety and maintenance requirements.
- **Always use generators only in areas that are well ventilated, away from children and pets, and away from air intakes to the home.**
- **Ensure all electrical panels are readily accessible and clearly labeled.** Avoid storing anything within three feet of any electrical panel. Every disconnect and circuit breaker must be clearly labeled.
- **Install covered GFIC outlets in the barns, shops and outside.**



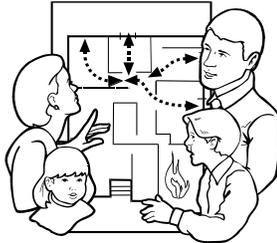
INSTALL AND MAINTAIN LIGHTNING RODS AND GROUNDING CABLES

Lightning bolts are hotter than the temperature of the sun. If they strike a building, a large fire can ignite. Fortunately, this type of electrical energy can be effectively harnessed with a lightning protection system including lightning rods and grounding cables to prevent property damage.

- Ensure lightning rods, grounding cables and system components are approved, certified and installed in accordance with regulations.
- Check grounding cables frequently and repair if worn or damaged.
- Ensure that work is performed by a properly licensed electrician whenever work is required on lightning rods or grounding cables as a result of changes to the building or re-roofing.

FIRE SAFETY PLANNING

A customized fire safety plan can work to your advantage in a fire. Develop a fire safety plan for your farm or agri-business to reduce fire loss. Fire safety planning starts with you.



- Identify exits and possible evacuation routes from all barn and farm buildings areas. Ensure all family members and employees are familiar with these evacuation routes.
- Make necessary arrangements to house livestock in the event they need to be evacuated from the barn in a fire. If you do not have suitable areas on your property where you can contain and control your animals, you may need to consider making arrangements with neighboring farmers.
- Maintain an identification list of all animals on your farm including pertinent details about their health (i.e., any vaccinations they have received, medication they may require) and any physical characteristics.
- Review the plan with all family members and employees and update your plan regularly to accommodate changes to the buildings, livestock or employees.
- Invite the local fire department to tour your barns and facilities. Point out to them the location of all power shut-offs and water source locations. It is also a good time to point out to them any dangerous animals or hazards they need to be aware of.



IN THE WORKSHOP

- Make sure all flammable and combustible materials such as gasoline, kerosene, paint thinners, and paper are properly stored in labeled containers away from possible ignition sources.
- Provide adequate ventilation to work areas to reduce Carbon Monoxide or fumes buildup.

HAY STORAGE

Hay fires that usually occur within six weeks after baling are largely preventable. The risk of hay fire is significantly reduced by curing hay to less than 20 percent moisture concentration prior to baling. Hay temperature should be carefully monitored. If the interior temperature of the hay stack is greater than 175°F, fire is imminent or present and the fire department should be called immediately.

IN THE EVENT OF A FIRE

Do everything you can to prevent fires from starting.

Remember, though, that fires may start despite your best prevention efforts. When a fire breaks out in a house or a farm building, everyone must be evacuated from the building immediately.

1. Do not panic.

2. Call 911. Tell the dispatcher it is a barn fire and give them your number address. Or be able to give them directions to your farm.

3. Tell them the status of the fire (smoke showing or fully involved).

4. Notify them if there are any people injured or trapped.

5. Notify them of the status and type of animals - if the animals are loose or contained and how many are still in the barn.

6. If your driveway is difficult to see or find, send someone out to meet the fire department. Many fire departments have delayed response time due to poor directions.

7. Shut off all power sources to your barn.

8. If you are the only one at the barn, DO NOT enter the barn! If something happens, no one will know you are inside.

9. If the barn roof is on fire, do not enter the barn. The roof may collapse at any time.

10. If animals are loose or have been evacuated from the barn, they must be contained in a field or corral or trailer away from the fire as animals will run back into a burning barn. If there is a chance any of the animals have embers under their hair, they must be hosed off. Embers can smolder under their hair for several hours leading to burns.

Keep in mind that evacuating animals from a barn fire can be extremely challenging, time consuming and actually impossible in some cases.



Photo Courtesy of Cindy Cross-Greenia

This checklist was prepared to help identify fire safety issues and provide positive steps that can be taken to reduce the risk and mitigate the effects of a fire on Vermont farm properties.



Produced by
**The Vermont Barn Fire
Prevention Task Force**



a sub-committee of the
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The USDA is an equal opportunity employer.

In cooperation with



**NORTHERN VERMONT RESOURCE CONSERVATION
& DEVELOPMENT COUNCIL**

Office of US Senator Bernie Sanders

Other Resources

For more information about other fire safety issues,
please visit:

www.vtfiresafety.org

www.uvm.edu/extension/

<http://www.co-opinsurance.com/s/farm.html>

Comprehensive websites of technical farm animal welfare and
barn fire related information:

www.farmingmagazine.com

www.firesafetyinbarns.com

www.cdc.gov/nasd/index.html

www.agriculture.purdue.edu/aganswers/index.asp

www.hsus.org

www.nfpa.org

www.usfa.gov

Important Things you need to know about... Barn Fires

**AT NO TIME SHOULD ANYONE PUT THEIR OWN PERSONAL
SAFETY IN JEOPARDY TO SAVE AN ANIMAL OR EQUIPMENT
FROM A BARN THAT IS ON FIRE.**

The leading causes of barn fires in Vermont are:

- 1. Heating equipment**
- 2. Overheating equipment and welding**
- 3. Electrical arcs**

A barn fire is fast, it only takes three to four minutes for a
fire to fill a barn with smoke. And a barn can be completely
engulfed in flames in less than 5 minutes.

Animals normally will not leave a barn on their own as they
do not fear fire.

Most animals are killed from smoke inhalation; those who
do survive rarely recover.

Barn fires are one of the most challenging structure fires
for firefighters and first responders.

The majority of barn fires occur late at night or early
morning hours, often going undetected until flames are
showing.

Barn fires that involve animals are often devastating to
deal with; for the owners, responders and the community.

Many insurance companies will offer lower premiums if
extra fire safety precautions are taken, some of which may
be above and beyond the standards or codes that are
required by the town or state.

The majority of all barn fires are the result of carelessness
and a lack of fire safety knowledge. The vast majority of
barn fires are preventable!

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