



An Extended Guide · No. 1287

Carbon Monoxide Safety: The Rule That Saves Lives

Invisible, deadly, and preventable

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! Before you begin — a quick safety note.

This guide covers work involving carbon monoxide from engine exhaust, which can cause serious injury, fire, or property damage if something goes wrong. It's here for general information only, not professional advice. If you're not completely comfortable — or if your local codes require a licensed pro — please stop and hire a qualified generator installer. Turn off the power at the breaker before any electrical step. Never work on gas lines yourself; if you smell gas, leave right away and call your gas company or 911. There's no shame in calling a pro — that's often the smart, safe choice. You follow this guide at your own risk. — Bill

A Note From Bill

Every guide in this series touches on carbon monoxide, because it has to. This one is the deep breath — a full, unhurried look at the one danger that matters more than any other around a generator.

I'm not writing this to frighten you. I'm writing it so you understand exactly why the rule exists, and so following it becomes second nature instead of something you half-remember during a storm.

What you'll get out of this guide

- What carbon monoxide actually is, and why your senses can't warn you
- The distance rule, and the real numbers behind why it exists
- Every spot that's never safe, even for “just a minute”
- How to recognize the symptoms, in yourself or someone else
- Exactly what to do if you ever suspect it
- How to build CO safety into a habit your whole household shares

★ Roughly a hundred families a year

That's about how many people die from portable-generator carbon monoxide every year in the U.S. — and it's almost always preventable. That's the whole reason this guide exists. Questions anytime: (330) 200-8042.

The Whole Rule in One Page

If you read only one page today, make it this one — everything else just backs it up.

- ❑ Carbon monoxide comes from engine exhaust. It has no color, no smell, and no taste — you cannot sense it coming.
- ❑ Run the generator outdoors only, at least 20 feet from the house, exhaust pointed away from doors, windows, and vents.
- ❑ Never in a garage, basement, shed, crawlspace, or carport — not even with the door wide open.
- ❑ Put battery-backup CO alarms on every level of the home, especially near bedrooms, and test them.
- ❑ If an alarm sounds, or anyone feels headachy, dizzy, nauseated, or unusually sleepy, get everyone outside into fresh air and call 911.

✓ Two things worth doing today

Pick your generator's outdoor spot now, and test your CO alarms today. Both take five minutes, and both could matter enormously.

What Carbon Monoxide Actually Is

Understanding what you're up against makes the rules that follow feel a lot less arbitrary.

Any engine burning fuel — gasoline, propane, or natural gas — gives off carbon monoxide as part of its exhaust. It's a completely normal byproduct of combustion, and it's exactly as true of a generator as it is of a car engine running in a closed garage.

- It has no color — you cannot see it forming or drifting.
- It has no smell — nothing like exhaust fumes or gasoline odor gives it away.
- It has no taste, and it doesn't irritate your eyes or throat the way smoke does.
- Once breathed in, it crowds out the oxygen your blood is trying to carry, which is what makes it dangerous.

! It's not the fumes you smell

The exhaust smell you notice near a generator is other combustion byproducts, not the carbon monoxide itself. Not smelling anything unusual tells you nothing about how much CO is actually present.

Why “I'd Notice” Is a Dangerous Assumption

This is the trap that catches careful people: assuming you'd sense danger before it became serious.

- There's no smell to trigger alarm, unlike a gas leak or a kitchen fire.
- Early symptoms — a headache, feeling tired, a little dizzy — feel exactly like a dozen harmless things.
- CO can build up while people are sleeping, when no one is awake to notice feeling unwell at all.
- By the time symptoms are unmistakable, the ability to get yourself to safety may already be compromised.

This is exactly why the safety rules focus on prevention — where the generator runs — rather than waiting to notice a problem and react to it.

★ Prevention over detection

I'd rather you never need to recognize a CO symptom at all. Getting the placement right from the very first minute is worth ten times more than knowing what to watch for.

Outdoors Only, 20 Feet or More

If this guide has a single sentence to remember, it's this one.

Run your generator outdoors, in the open air, at least 20 feet away from your house — and from any other occupied building, including a neighbor's. Point the exhaust away from doors, windows, and vents, not toward them.

- **“Outdoors”** means truly in the open — not a breezeway, not under a deck, not tucked against the house.
- **20 feet is a minimum**, not a target. A little farther is always fine.
- **Exhaust direction matters** as much as distance — aim it away from every window and door, yours and your neighbors'.

✓ Measure it once

Pace off 20 feet from your house one calm afternoon and remember where it lands. It's a lot easier to judge in daylight than during a storm.

The Places That Are Never Safe

A few spots feel like reasonable compromises. None of them are — please cross every one off your list.

- **The garage, door open.** Exhaust still pools and drifts into the house. Never — not even for a few minutes.
- **The basement or crawlspace.** Enclosed, and often directly under living space. Never.
- **A shed or carport.** Still enclosed enough to trap dangerous levels. Never.
- **Near an open window “just this once.”** Exhaust finds its way in far more easily than you'd expect.

! A cracked door is not a plan

Cracking a window or propping a door open does not make an enclosed space safe. The only safe place is genuinely outdoors, away from the structure.

What 10 Feet Really Looks Like

Sometimes a number makes a rule click in a way words alone don't.

In testing, a generator placed just 10 feet from a home was enough to push indoor carbon monoxide levels above 200 parts per million — a level that can be dangerous, even fatal, with continued exposure. That's half the recommended distance, and it was enough to matter.

- **10 feet:** measurably dangerous indoor CO levels in testing.
- **20+ feet, exhaust aimed away:** the distance the safety rule is built around.
- The difference between the two is often the width of a driveway — worth the extra few steps every time.

! Don't round down

If you're eyeballing the distance and you're not sure it's a full 20 feet, move it farther. There's no penalty for extra distance, only for not enough.

Choosing (and Marking) Your Safe Spot

Deciding this once, ahead of time, is one of the best five minutes you can spend on generator safety.

- Dry, level, open ground at least 20 feet from your house, with exhaust aimed away from any window, door, or vent.
- Not under a deck, not in a breezeway, not tucked against a wall where fumes can collect.
- Somewhere you can reach safely in the dark, without crossing ice or an unlit path.
- Keep spare fuel — gasoline cans, propane cylinders — stored a little farther off still, away from the generator's hot muffler and exhaust.

✓ Pick it before the storm, not during

When the power's out, it's dark, and everyone's tired, having a known spot already chosen removes one more decision from a stressful night.

Carbon Monoxide in Close Quarters

Homes in town sit closer together, which means the safe-spot rule has to account for your neighbor's windows and doors, not just your own.

- **Twenty feet from your house may still be close to a neighbor's.** Check both directions before you settle on a spot.
- **Shared walls and attached garages raise the stakes.** A generator running in a garage — yours or a duplex neighbor's — can send CO through connecting doors and shared ventilation.
- **Condos and apartments usually aren't a fit for a generator at all.** If you can't get a truly outdoor spot 20 feet from any occupied structure, a battery power station is the safer choice for keeping essentials running.
- **CO alarms matter just as much here** — maybe more, given how much closer everything sits.

✓ Be a good, safe neighbor

If you see a neighbor's generator running close to their house — or yours — a friendly heads-up about the 20-foot rule could genuinely save a life.

Carbon Monoxide on a Rural Property

More open land doesn't remove the danger — it just changes where the temptation to cut corners shows up.

- **Well houses and pump houses are never a generator spot.** They're built to be enclosed and weathertight — exactly the wrong shape for anything with an engine running inside.
- **A barn or outbuilding with the door open still isn't outdoors.** The same rule applies as a garage: never, regardless of how big the space feels.
- **Longer rural outages mean more running hours.** If you're relying on the generator to keep your well pump going for days, that's more total time for a placement mistake to matter — get it right from the start.
- **Help is farther away out here.** A rural home is often a longer ambulance ride from town, which makes getting the placement right the first time even more important.

Keeping water flowing matters — that's exactly why the well pump depends on the generator in the first place. None of that changes the placement rule; it just means there's more reason to do it right, every single time it runs.

★ Water and safety aren't a trade-off

I've never had a country customer regret walking those extra steps outside. Let's set up a spot that keeps the well pump running and your family safe, both at once.

Alarms: Your Backup, Not Your Plan

Placement is what keeps CO out of your home in the first place. Alarms are what catch it if something still goes wrong.

- Put a **battery-backup CO alarm** on every level of the house, including the basement.
- Place one near sleeping areas — CO is especially dangerous while everyone's asleep.
- Test alarms monthly, and replace batteries on the schedule the alarm calls for.
- CO alarms have a service life too — check the manufacture date and replace an old unit.

✓ Test day

Pick a day each month — the first of the month is easy to remember — and press the test button on every CO alarm in the house.

What to Watch For, In Yourself and Others

CO symptoms are easy to dismiss because they feel so ordinary. Take them seriously anyway, especially with a generator running nearby.

- A headache that comes on while the generator is running
- Feeling dizzy or unsteady
- Nausea, or just feeling “off” in your stomach
- Unusual sleepiness or fatigue that doesn't fit the moment

Kids, older adults, and anyone with heart or breathing conditions can be affected faster and more seriously. Pets can show symptoms too — a suddenly sluggish or unsteady dog or cat is worth taking seriously.

! More than one person, faster reaction

If more than one person in the house feels the same symptoms at the same time, treat it as carbon monoxide until proven otherwise — that pattern is a serious clue.

If You Ever Suspect Carbon Monoxide

You don't need a complicated plan — you need three steps, done immediately and without debate.

- ❑ Get everyone outside into fresh air right away — don't stop to investigate or open windows first.
- ❑ Call 911 from outside, once everyone is safely away from the house.
- ❑ Do not go back inside until emergency responders say it's safe.

! Don't wait to be sure

If there's any real doubt, act as though it's carbon monoxide. Getting everyone outside costs you a few minutes if you're wrong. Waiting can cost far more if you're right.

Newer Generators and CO Shutoff Sensors

Some recent generator models include a sensor that watches for rising CO and shuts the engine off automatically. It's a genuinely good feature — with one important caveat.

- It's a **second layer of protection**, reacting after CO has already started building up nearby.
- It does not change where you should place the generator — the 20-foot, outdoors-only rule still applies exactly as before.
- If you're shopping for a generator, a CO shutoff sensor is a genuinely worthwhile feature to look for.
- If your current generator doesn't have one, correct placement alone still keeps you safe — it always has.

✓ A seatbelt, not a reason to speed

Think of the sensor the way you'd think of a seatbelt — a real safety net, not a reason to take more risk with placement.

Keeping It Dry Without Boxing It In

Bad weather tempts people to tuck a generator somewhere sheltered. Resist that — there's a safer way to keep it dry.

- Never run a generator in standing water, and never run it in a fully enclosed space to keep it dry — that trades one danger for another.
- Use a generator cover or tent made specifically for the job — open-sided, built to shed rain while air still flows through freely.
- Never drape a tarp tightly around a running generator, and never set it inside a closed box or bin.
- If weather is genuinely too severe to run it safely outdoors, that's a sign to wait, not to move it indoors.

! A tarp is not a cover

A tarp wrapped snug around a running generator traps exhaust almost as effectively as a garage wall. Only an open-sided, purpose-built cover is safe.

The Same Rule Applies to Other Engines Too

Once you understand why generators need distance, the same logic protects you from other small engines around the house.

- Pressure washers, fuel-burning portable heaters, and similar equipment all produce the same invisible exhaust.
- The same outdoors-only, well-away-from-windows thinking applies to any of them.
- A car left running in an attached garage, even with the big door open, carries the exact same risk.

✓ One rule, easy to remember

If it has a small engine and it's running, treat it like the generator: outdoors, away from the house, every time.

The Ohio Winter Temptation

Cold weather has a way of making bad ideas sound reasonable. This is the page to reread before the season's first ice storm.

- The urge to “just tuck it near the door” or “run it in the garage, just this once, it's freezing” is exactly how tragedies happen — cold doesn't make an enclosed space any safer.
- Snow and wind don't change the 20-foot rule; if anything, give yourself a little extra room to keep the exhaust clear of drifts.
- Keep the generator itself clear of snow buildup so it can breathe, without moving it any closer to the house to do it.
- Dress for the weather instead — good boots and a flashlight let you reach a proper outdoor spot safely even in the cold.

! Cold is uncomfortable. CO is fatal.

However tempting it is to shave a few feet off the distance on a bitter night, don't. The rule doesn't have a winter exception.

Making Sure the Whole House Knows

This rule only works if everyone in the home understands it — not just whoever usually starts the generator.

- Walk visiting family, houseguests, and anyone who helps out during a storm through the safe spot and the reason for it.
- Make sure older kids and teenagers know never to move the generator closer “to keep an eye on it.”
- If grandparents or anyone with limited mobility lives in the home, make sure they know what a CO alarm sounding means and what to do.
- A quick conversation now is far easier than a rushed one during an actual outage.

★ I'm glad to have this talk with your family

Walking a whole household through the CO basics, in plain language, is something I'm always happy to do during a visit — no one's ever made to feel silly for asking.

A Simple Habit That Covers You Every Time

You don't need to memorize a long list — you need one short routine you run through before every single start-up.

- ❑ Is it set up outdoors, 20 feet or more from the house?
- ❑ Is the exhaust pointed away from every door, window, and vent — yours and a neighbor's?
- ❑ Are the CO alarms in the house tested and working?
- ❑ Is everyone in the house aware it's running, and what to do if an alarm sounds?

Run through those four questions every time, and carbon monoxide stops being a source of worry — it becomes something you've already handled.

✓ Fuel handling has its own guide

This guide is entirely about CO. For the full picture on handling propane and natural gas safely, and what to do if you ever smell gas, there's a dedicated guide in this series for exactly that.

When to Give Me a Call

Most of carbon monoxide safety is habit, not equipment — but I'm glad to help with the parts that benefit from an extra set of eyes.

- Walking your property to help you choose the safest possible generator spot
- Picking and placing the right number of CO alarms for your home
- Choosing a generator with a built-in CO shutoff sensor, if that matters to you
- Talking through the basics with your whole family, in plain language
- A general safety check the first time you set up a new generator

I come to you, here in Portage County and nearby, and I never rush this conversation — it's too important.

★ Bill's Home Tech

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Everyday Cheat Sheet

Dog-ear this page or copy it onto a card by the generator.

I want to...	Remember this
Place it safely	Outdoors only, 20+ feet from the house, exhaust aimed away
Avoid the big mistake	Never in a garage, basement, shed, or carport — door open or not
Cover it in bad weather	An open-sided generator cover only — never a tight tarp or an enclosed space
Catch a problem early	Battery-backup CO alarms on every level, tested monthly
Recognize the symptoms	Headache, dizziness, nausea, unusual sleepiness
React immediately	Everyone outside to fresh air, then call 911
Get help	Call Bill: (330) 200-8042

Words People Use

A few CO-related terms in plain language. No quiz at the end.

Q: Carbon monoxide (CO)

An invisible, odorless, tasteless gas produced by burning fuel. Breathing enough of it is dangerous and can be fatal.

Q: Parts per million (ppm)

The way CO concentration is measured — how many CO molecules are mixed into a million molecules of air.

Q: CO alarm

A device that detects rising carbon monoxide and sounds a warning, similar to a smoke alarm but for a different gas.

Q: CO shutoff sensor

A built-in feature on some newer generators that senses rising CO nearby and shuts the engine off automatically.

Q: Ventilation

Open airflow. A space is only “ventilated” enough to matter when it's genuinely open, not just cracked.

Q: Backfeed

A different generator danger (electrical, not CO) — sending power backward into the utility lines. Covered in a separate guide.

How Distance Changes Everything

The same generator, three different placements

	10 Feet Away	20+ Feet Away	Garage, Door Open
Indoor CO level	Topped 200+ ppm	Stays low	Rises fast, dangerous
Exhaust direction	Hard to aim clear	Aimed away from home	Trapped near living space
Considered safe?	No	Yes - the rule	Never

Illustration - a schematic, not to scale. Your setup may differ.

If You Ever Suspect CO

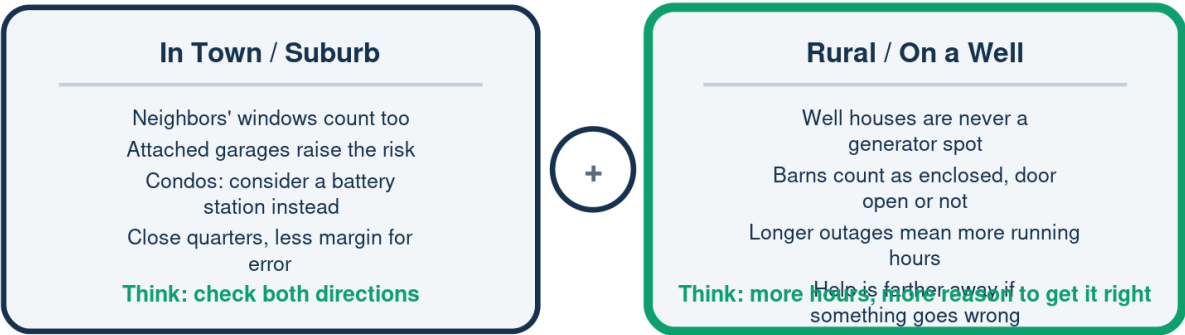
Four steps, no debate, no delay



Illustration - a schematic, not to scale. Your setup may differ.

CO Safety: Town vs. Country

Same rule, different surroundings to account for

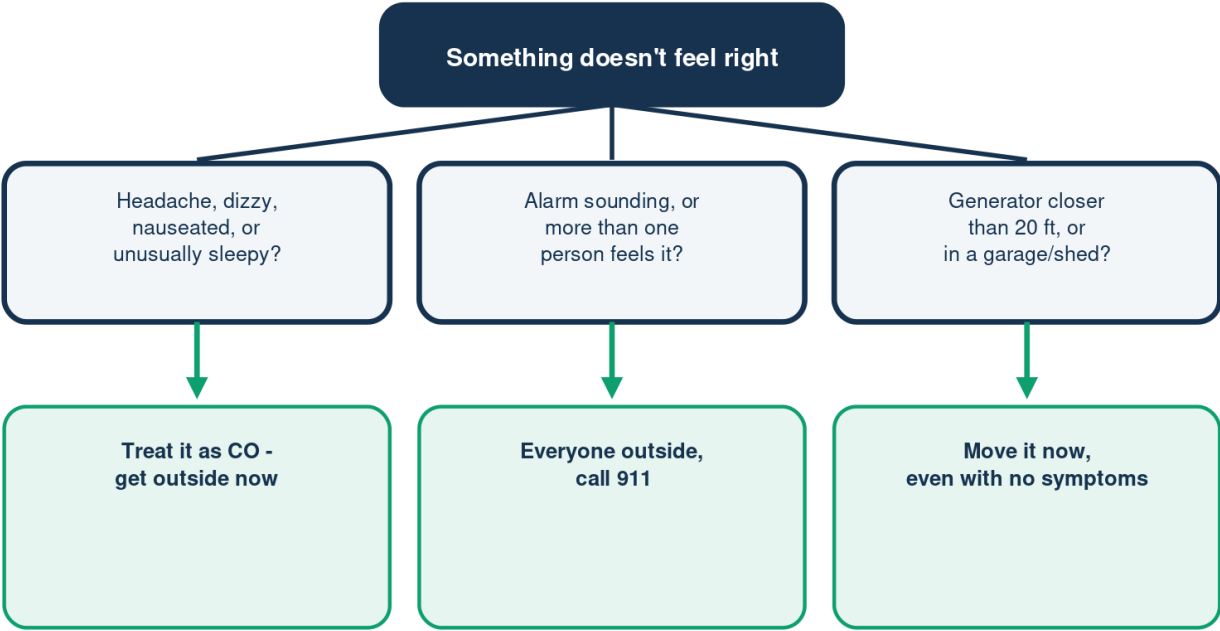


The 20-foot, outdoors-only rule never changes

Illustration - a schematic, not to scale. Your setup may differ.

Recognizing the Warning Signs

Three quick checks if something feels off



When in doubt, get outside first and ask questions after. Call 911 from a safe distance.

Illustration - a schematic, not to scale. Your setup may differ.



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A Note From Bill

A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— *Bill*



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