



An Extended Guide · No. 1633

Refuel Only When It's Off and Cool

Never pour fuel on a hot engine

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! Read this first — carbon monoxide is the real danger

A running generator's exhaust contains carbon monoxide — an invisible, odorless gas that can kill in minutes. Never run a generator indoors, in a garage, in a shed, or on a porch, not even with the door open and a fan going. Run it outside only, well away from the house — the safety agencies say at least 20 feet — with the exhaust pointed away from every window, door, and vent. Put battery-backup carbon-monoxide alarms on each floor and outside the bedrooms. If an alarm sounds, or anyone feels dizzy, sick, or sleepy, get everyone into fresh air first and ask questions later. That same kind of fire risk is exactly why you always let a generator shut off and cool before adding more fuel — never pour gasoline on a hot engine or muffler.

Let's talk about the one rule that matters most here

Of everything in this whole set of guides, this is the rule I'd want you to remember above all the others: never refuel a generator that's running or still hot. Everything else in this guide is really just support for that one idea.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. This rule sounds obvious once you hear it, but in the middle of a long outage, tired and eager to keep the lights on, it's exactly the kind of thing that gets rushed.

This guide covers why the rule exists, how to plan around it so it's never a hardship, and the handful of related habits — like adding oil and choosing where to refuel — that follow the same logic.

! The rule, in one sentence

Turn it off. Let it cool. Then refuel. In that order, every single time, no matter how badly you want the power back on.

The whole guide, on one page

If you remember only these things, you'll never refuel a hot generator.

- ❑ Never refuel a generator that is running.
- ❑ Never refuel a generator that is still hot — let it cool first.
- ❑ Plan ahead so you're not forced to fuel it while it's hot.
- ❑ Keep fuel containers well away from a running unit.
- ❑ Don't overfill — leave room for the fuel to expand.
- ❑ Refuel outdoors, never in a garage or shed, even to escape the weather.

✓ This is the one rule worth memorizing

If you take only one habit from this entire set of guides, make it this one. It's simple, and it prevents a serious and well-known cause of fire.

Why a hot engine and gasoline don't mix

Understanding the reason makes the rule easy to hold onto.

A running generator's engine and muffler get genuinely hot — hot enough that spilled gasoline landing on the wrong surface can ignite on contact. This isn't a small or theoretical risk — it's the reason this single rule appears in every generator's owner's manual.

Gasoline doesn't need an open flame to catch fire. A hot enough surface is all it takes, and a running or recently stopped generator has exactly that kind of surface sitting right next to where you'd be pouring.

! No flame required

People sometimes picture fire risk as needing a spark or a flame. A sufficiently hot surface is enough on its own — which is exactly what a running engine provides.

The rule itself: off and cool, no exceptions

One sentence, and it's worth committing to memory.

Before you add any fuel, switch the generator off completely and give it time to cool down. Not 'idling down,' not 'almost done running' — fully off, and cool to the touch near the engine and muffler, before the cap comes off.

- Switch the unit off completely — not just reduce the load.
- Wait for the engine and muffler area to cool.
- Only then remove the fuel cap and add fuel.
- Restart only after the cap is back on and secure.

! This rule has no exceptions

Not for a quick top-off, not because you're in a hurry, not because the outage is dragging on. Off and cool, every single time.

How long is 'cool enough'?

This is one place I won't hand you a number, and I'll explain why that's the honest answer.

Exactly how long a generator takes to cool down varies by model, size, and how hard it was working, so the honest answer is to follow your manufacturer's manual and use plain common sense: if the engine or muffler area still feels warm to the air near it, it's not ready yet.

As a general habit, many owners let the unit sit for a good while after shutting it off — long enough that there's no question it's cooled — rather than testing the limit. When in doubt, wait longer.

✓ Your manual has the real answer

If your generator's manual gives specific cooldown guidance, that's the one to follow.

This guide gives you the habit; your manual gives you the specifics for your machine.

Plan your refuel windows ahead of time

The best way to follow this rule easily is to never be forced to break it.

Most of the pressure to refuel a hot generator comes from not knowing how much runtime is left until it's too late. If you have a sense of how long a tank lasts, you can plan a refuel during a natural lull — before it runs dry, with time built in for it to cool — rather than scrambling the moment it sputters out.

Our guide on runtime and fuel planning covers how to estimate how long your generator runs on a tank, which is exactly the information that makes this rule easy to live with instead of a hardship.

✓ A little planning removes nearly all the pressure

Refueling on your own schedule, before you're desperate, is what makes 'off and cool' effortless instead of frustrating.

Keep fuel containers well away while it runs

Distance while it's running is just as important as distance while you're refueling.

While the generator is running, keep any gas cans or extra fuel a good distance away from it — not staged right next to the unit 'for convenience.' A running engine's heat and exhaust have no business being near stored fuel, even capped and sealed.

- Store extra fuel well away from where the generator runs.
- Bring a container closer only after the unit is off and cooling.
- Never set a fuel can down right next to a running generator, even briefly.

! Convenience is not worth the risk here

It's tempting to keep the fuel can close so refueling is quick. Keep it at a safe distance instead — the few extra steps cost you nothing next to what they prevent.

Don't overfill, even once it's cool

Being off and cool doesn't mean you can rush the fill itself.

Once the generator is off and properly cooled, fill the tank slowly and stop short of the very top, the same habit that matters at any pump. Our guide on static and fire safety when refueling covers this slow-fill, room-to-expand habit in full — it applies here just as much as at the gas station.

- Fill slowly, watching the tank rather than rushing.
- Stop short of the top to leave room for the fuel to expand.
- Wipe up any spill immediately, before restarting the unit.

✓ Same habits, different location

Everything you'd do carefully at a gas pump applies just as much at the generator — slow fill, no overfilling, wipe up any spill.

No smoking, no flames, anywhere nearby

The same rule that applies at the gas pump applies here.

No smoking, no lighters, no open flame anywhere near the generator while you're refueling it, even once it's off and cool. Gasoline vapor doesn't know the difference between a pump and your driveway.

! Treat it exactly like the gas pump

If you wouldn't light a cigarette at the pump, don't light one next to the generator either. The vapor risk is identical.

Refuel outdoors, always

The same open-air rule that applies while it runs applies while you refuel it too.

Add fuel to the generator outdoors, in the open air, the same place it should be running in the first place. Never bring a generator into a garage or shed to refuel it out of the weather — that decision creates a much bigger danger than getting a little wet.

We'll cover exactly why on an upcoming page, because it's important enough to say clearly and on its own.

✓ Outdoors for fueling, outdoors for running

There's no version of this where bringing the generator inside, even briefly, is the safer choice.

Two kinds of homes, two sets of needs

How often you're refueling, and how much pressure you feel to rush it, often comes down to how long your outages typically run.

If you live in town or the suburbs

In town or a close-in suburb, outages tend to be shorter, so you may only refuel once or not at all during a typical event.

- Fewer refuel cycles means fewer chances to be tempted to skip the cooldown — but the rule still applies every time.
- A shorter outage still deserves the same patience — don't let 'it's almost over' be a reason to rush.
- Keep extra fuel a safe distance from the unit even for a short run.
- If a neighbor is also running a generator nearby, keep your own fueling routine calm and unhurried regardless.

If you are out in the country on a well

Out in the country, a widespread outage can run for days, which means refueling several times — and more chances for the rule to feel like an inconvenience.

- More refuel cycles make planning ahead — our runtime and fuel planning guide — even more valuable.
- Fatigue during a long outage is exactly when it's easiest to cut the cooldown short — build in the patience on purpose.
- If you're topping off more than one piece of equipment, keep each fueling stop separate and unhurried.
- A rural property often has more open, outdoor space to refuel safely — use it rather than ducking into a shed.

★ Let's build a refueling rhythm that works

Tell me how long your outages usually run, and I'll help you plan a refueling routine that never feels rushed. Call (330) 200-8042.

Adding oil follows the same rule

One habit, and it covers more than just fuel.

Checking or adding oil also calls for the generator to be off and cool, for the same basic reason: a hot engine is not a safe or comfortable thing to work around, and spilled oil on a hot surface has its own risks. Treat an oil check exactly like a refuel — off first, cool second, then open anything up.

- Shut the unit off and let it cool before checking the oil.
- Wipe up any spilled oil the same way you would fuel.
- Follow your manufacturer's manual for how and how often to check it.

✓ One habit covers both jobs

Once 'off and cool' is automatic, it covers fuel and oil both. You don't need a separate rule to remember.

Never move it indoors to refuel out of the weather

This is worth its own page because the temptation is real, especially in bad weather.

It's tempting to wheel a generator into the garage for a moment, just to refuel out of the rain or cold. Don't. A generator that gets started again indoors, even briefly, or that leaves exhaust lingering in an enclosed space, creates a carbon monoxide risk that is far more dangerous than getting wet. Our carbon monoxide guide covers exactly why that exhaust is so dangerous.

If the weather is genuinely rough, refuel it outdoors under a simple canopy or overhang built for the purpose, rather than bringing the unit itself inside.

! Wet is an inconvenience; carbon monoxide is a killer

There is no weather bad enough to justify refueling or running a generator indoors, in a garage, or in a shed. Ever.

If you're caught low on fuel mid-storm

It happens — here's how to handle it without cutting a corner.

It happens: the tank runs lower than expected during a long outage, and the temptation is to squeeze in a quick refuel without waiting for a proper cooldown. Resist it. A generator that goes quiet for a while because it ran out, or because you shut it off to refuel properly, is a short, safe pause — not an emergency.

The fridge and freezer hold their temperature for a good while with the door shut, and most equipment tolerates a brief pause far better than you'd expect. Use that pause productively: let the unit cool fully, refuel carefully, then restart.

! A short, safe pause beats a rushed, risky refuel

There is no situation urgent enough to justify skipping the cooldown. Getting the power back on a little sooner is never worth the risk of refueling before the unit is truly ready.

Common mistakes people make

A handful of avoidable habits account for most refueling fire risk.

- **Topping off while it's still running** to save a few minutes.
- **Refueling right after shutdown** without waiting for it to actually cool.
- **Wheeling it into the garage** to refuel out of the rain.
- **Keeping the fuel can staged right next to a running unit.**
- **Rushing the whole process** because the outage has dragged on and patience is thin.

! Every one of these trades a small convenience for a real risk

None of these mistakes feels dramatic in the moment. Near a hot engine and gasoline, that's exactly the problem.

If fuel spills near the engine

How you respond in the moment matters as much as the rule itself.

If fuel spills while you're refueling, even after a proper cooldown, stop immediately, wipe it up, and make sure the area is fully dry and aired out before you start the generator again. Our spill cleanup guide covers a larger spill in full detail.

If a spill happens and you are even slightly unsure whether the engine has fully cooled, do not attempt to start the generator until you're confident the fuel has evaporated and the area is clear.

! When in doubt, wait longer

A few extra minutes of waiting costs you nothing. Starting a generator over or near spilled fuel is not a risk worth taking.

Questions worth asking

Whether you're reading your manual or asking me, these get you real answers.

Q: Can I just add a little fuel while it's idling?

No. Off means off, even for a quick top-off. There's no safe amount of running time to refuel during.

Q: How do I know when it's actually cool enough?

Follow your manufacturer's manual, and use common sense — if the engine or muffler area still feels warm nearby, give it more time.

Q: Is it okay to refuel under a carport or open awning?

Yes, an open, outdoor, covered spot is fine. The concern is an enclosed garage or shed, not simply having something overhead.

Q: What if I'm worried about running out of fuel overnight?

Plan ahead using our runtime and fuel planning guide, and check and refuel during a safe, cool window rather than guessing in the dark.

✓ There's no silly question

This rule is simple, but the situations that test it — storms, fatigue, low fuel — are not. Ask until you're confident.

A simple off-and-cool checklist

Walk through this every time, before you add fuel.

- ☐ The generator is switched off completely, not just idling.
- ☐ The engine and muffler area feels cool, not warm, to the air near it.
- ☐ I'm refueling outdoors, never in a garage or shed.
- ☐ Fuel containers are kept well away until it's time to refuel.
- ☐ I'm filling slowly and stopping short of the top.
- ☐ No smoking or flame anywhere nearby.
- ☐ The cap is back on and secure before I restart it.

★ I'll help you build this into a habit

If you'd like to walk through your own refueling routine, that's a quick, worthwhile conversation. Call or text (330) 200-8042.

Fire safety, taken seriously

This entire guide exists to prevent one specific, well-known cause of fire.

Fuel meeting a hot engine surface is avoidable every single time, with one consistent habit. It doesn't take special training or equipment — just the discipline to wait.

Keep a fire extinguisher rated for flammable liquids somewhere sensible nearby, and know how to use it. Combine that with the off-and-cool habit, and you've addressed the great majority of generator fire risk.

! One habit, most of the risk

If this guide teaches you only one thing, let it be this: the generator is off, and it is cool, before any fuel touches it. Every time.

Common Questions

The off-and-cool questions I hear most often, answered plainly.

Q: Why is refueling a hot generator so dangerous?

A running or recently stopped generator's engine and muffler get hot enough that spilled gasoline can ignite on contact, without needing any spark or flame.

Q: Is there an exact cooldown time I should wait?

That varies by generator, so follow your manufacturer's manual. As a habit, when in doubt, wait longer rather than guessing.

Q: Can I refuel in the garage if the door is open?

No. Refuel outdoors. An open garage door doesn't remove the carbon monoxide and fire concerns of doing this work in an enclosed space.

Q: Does this rule apply to adding oil too?

Yes. Treat an oil check the same as a refuel — generator off, fully cooled, before you open anything up.

★ Still have a question on your mind?

That's what I'm here for. Call or text me at (330) 200-8042 and I'll give you a plain, honest answer.

How this fits with the rest

This one rule connects to several others — here's how the pieces fit together.

This guide covered one rule above all: off and cool, every time you refuel. Our guide on runtime and fuel planning helps you plan refuel windows so this rule is never a scramble, and our guide on static and fire safety when refueling covers the slow-fill, no-overfill habits that apply here too.

If fuel ever spills near the generator, our spill cleanup guide has the full steps, and our carbon monoxide guide explains why the generator, and refueling it, both belong outdoors, never in a garage or shed.

★ One call covers all of it

You don't have to sort out which guide answers which question. Call or text me at (330) 200-8042, describe your setup, and I'll tell you plainly what's worth changing.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made refueling a generator safely, off and cool feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do the licensed electrical or gas work myself — for that I'll help you line up a trustworthy local pro.

★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

Off and Cool vs. Running or Hot

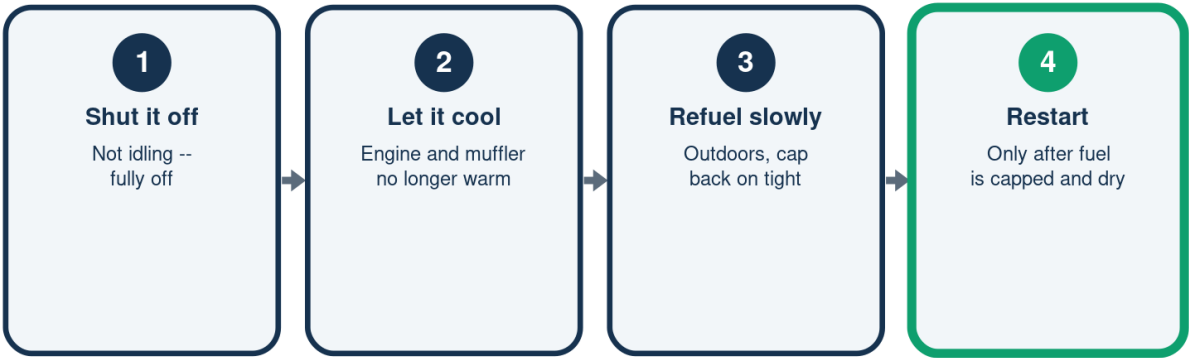
Only one of these is safe to refuel

	Off and cool	Running or hot
Safe to refuel	Yes	Never
Engine surface	Cool to the touch	Hot -- ignites fuel
Vapor risk	Low	High
What to do	Fill it now	Wait for cooldown

If it's running or still hot, the fuel waits -- not the other way around.

The Off-and-Cool Sequence

The same four steps, every single time



Off, cool, refuel, restart -- in that order, every time.

Refueling Outdoors vs. a Garage or Shed

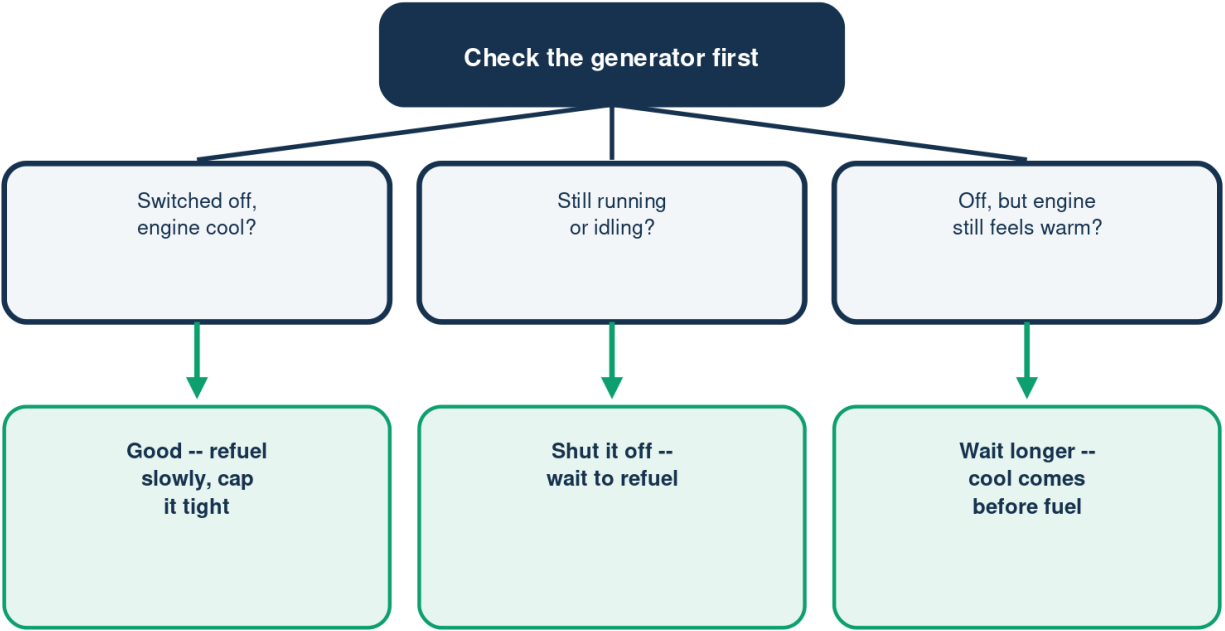
Only one of these is ever the right choice

	Outdoors	Garage or shed
Fire risk	Lower	Higher
Carbon monoxide	Disperses safely	Can build up
Ventilation	Open air	Trapped
The rule	Refuel here	Never refuel here

Outdoors is the only safe place to refuel or run it.

Is It Safe to Refuel Right Now?

Check the generator before you touch the cap



A hot engine and spilled gasoline can ignite without any spark or flame at all.

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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