BILL'S HOME TECH

Home & Small Business Tech Solutions

An Extended Guide · No. 1361

Backing Up the Well Pump, Furnace, and Sump Pump Automatically

Keeping water, heat,
and a dry basement

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! Read this first — this is licensed electrician's work

An automatic transfer switch is wired straight into your home's main electrical panel and works hand in hand with a standby generator. That makes installing one a licensed electrician's job from start to finish — almost always with a permit and an inspection — and never a do-it-yourself project. A big part of what the switch does is keep your generator's power from ever backfeeding onto the utility lines, which protects the crews working to bring your power back. Getting that right is exactly why the work belongs to a licensed pro. My job is to help you understand it, choose it, and live with it — not to open your panel. Backing up a well pump or furnace means wiring those circuits to the switch — squarely a licensed electrician's job.

Keeping water, heat, and a dry basement

Of everything an outage threatens, three things matter most to most homes: water, heat, and a dry basement. An automatic system can keep all three going by itself — powering your well pump, furnace, and sump pump without you lifting a finger. This guide explains how, and why these loads deserve special thought.

I'm Bill, and I help folks in Portage County plan backup power around what truly matters. These three loads are the heart of many a must-run list — especially out in the country — and they each have their own quirks worth understanding before you buy.

You won't do any wiring yourself; connecting these circuits is a licensed electrician's work. But knowing why the well pump is demanding, why even a gas furnace needs power, and why the sump pump is so easy to forget will help you plan a system that keeps you safe and comfortable.

★ Let's protect what matters most

If water, heat, and a dry basement top your worry list, that's exactly what I love helping plan. Call or text me at (330) 200-8042 and we'll make sure they're covered.

The whole guide, on one page

If you remember only these things, you'll protect the essentials well.

- ❑ Water, heat, and a dry basement are the three loads most worth backing up automatically.
- ❑ A well pump needs a big jolt to start — often several times its running power — so it shapes your whole system.
- ❑ Even a gas furnace needs electricity for its blower and controls; no power, no heat.
- ❑ A sump pump is easy to forget — and a dead one means a flooded basement in a storm.
- ❑ Automatic backup keeps all three running while you sleep or travel — no waiting for someone to act.
- ❑ Load management can help a smaller generator handle the well pump's surge.

> **✔ These three earn top priority**
> When you rank your must-run list, water, heat, and a dry basement almost always belong at the very top. An automatic system is what keeps them there through any outage.

Why these three matter most

Plenty of things are nice to keep running. These three cross from 'nice' into 'genuinely important.'

Water, for a home on a well, is non-negotiable — no power means no drinking, cooking, flushing, or water for animals. Heat, in our Ohio winters, is about comfort but also about keeping pipes from freezing and bursting. And a dry basement, in a rainy outage, is what stands between you and real, expensive damage.

Lose any of these in a long outage and you have more than an inconvenience — you have a problem that can harm your health or your home. That's why an automatic system, which keeps them going without waiting for anyone, is such a comfort for the households that depend on them.

> **✔ From inconvenience to real trouble**
> Losing the TV is an inconvenience. Losing water, heat, or a dry basement can become real trouble fast. That difference is why these three deserve your first attention.

The well pump — water itself

For a home on a private well, the pump is the single most important — and most demanding — load to back up.

Most home well pumps are powerful 240-volt pumps down in the well, and they need a big jolt of power to start — often several times what they draw once running. That starting surge is what makes the well pump the load your whole system is frequently sized around. Underpowered, a pump will struggle to start, which can strain and even damage its motor.

The reassuring news: a properly sized automatic system handles the pump with ease, and load management can let a smaller generator manage that surge by keeping other big loads from starting at the same instant. Your electrician sizes for the pump — I won't guess its numbers — and reads its needs from its nameplate or your well company.

> **✔ The pump usually sizes the system**
> On a well, the pump's big starting surge is often the deciding factor in how large a generator you need. Flag it to your electrician early — it shapes everything else.

The furnace — heat, and safe pipes

Here's a fact that surprises many folks: even a gas furnace stops in an outage, because it needs electricity to run.

A gas furnace or boiler burns gas for heat, but it relies on electricity for its blower, its controls, and its ignition. No power means no heat, even with a full gas line — the fuel is there, but nothing moves it through your home. Backing up the furnace keeps you warm and, just as importantly, keeps your pipes from freezing and bursting in a long winter outage.

The furnace's electrical needs are usually modest compared to the well pump, so it's a comfortable load for a right-sized system. But it absolutely belongs on your must-run list — assuming heat 'just works' without power is a costly mistake in a cold snap.

> **! Gas furnace, still needs power**
> Don't assume your gas heat will keep you warm in an outage — it won't, without electricity for the blower and controls. Put the furnace on your backup list, especially for winter.

The sump pump — keeping the basement dry

The most-forgotten load, and one of the most painful to lose. Don't let it slip off your list.

A sump pump keeps groundwater out of your basement — and storms, which cause outages, are exactly when it's working hardest. Lose power without backup, and a heavy rain can flood a basement while your generator happily runs the fridge upstairs. Because outages and heavy rain so often arrive together, the sump pump is a load that really deserves automatic backup.

A sump pump's power needs are usually modest, so adding it to your backed-up circuits is easy once you remember to. And it's worth considering a battery-backup sump pump as a second layer — more on that shortly — so a dry basement never depends on a single system.

> **! The classic, costly miss**
> Of all the loads folks forget, the sump pump causes the most heartache — a flooded basement while the backup ran everything but the one thing that mattered in the rain. Put it on the list.

Why automatic is ideal for these three

These loads share a trait that makes automatic backup especially valuable: they can't wait for you.

Water, heat, and a dry basement are needed continuously, often at the worst times — overnight, in a storm, while you're away. A manual setup can't help until someone's home to start it, which means a freezing night or a rising basement could go unaddressed for hours. An automatic system removes that gap entirely: the moment the power fails, it keeps all three going, whether you're asleep, at work, or on a trip.

For a home that depends on a well, or where a flooded basement is a real risk, that always-on protection is often the whole reason to choose automatic over manual. It's peace of mind for exactly the loads you can't afford to lose.

> **✔ They can't wait — so don't make them**
> The loads that can't wait for you are the ones that most reward going automatic. If water, heat, or your basement can't afford a gap, automatic is worth strong consideration.

Load management and the well pump

The well pump's big surge and load management are natural partners — worth understanding together.

Because the well pump needs such a big jolt to start, running it alongside other big loads can tax a smaller generator. Load management solves this elegantly: it makes sure another giant — the air conditioner, say — isn't starting at the same instant the pump does, so a right-sized generator can give the pump its surge without strain. The pump is set as a high priority, so it always runs when needed.

The result is that load management often lets a well home run on a smaller, cheaper generator than it otherwise would — covering water, heat, and the basement without buying the very largest unit. Our load-management guide covers this in full.

> **✔ Water stays a priority**
> You'd never want your water waiting behind the dryer. Set as a high priority, the well pump runs when it must — load management just keeps the other giants out of its way.

Two kinds of homes, two sets of needs

These three loads matter to nearly every home, but which ones dominate — and how demanding they are — depends a great deal on whether you're in town or out on a well.

If you live in town or the suburbs

In town or the suburbs, city water flows regardless, so the well pump isn't in the picture. Your focus is heat and a dry basement — backing up the furnace so pipes don't freeze, and the sump pump so a storm doesn't flood you. Both are modest loads a right-sized system handles easily.

- No well pump means a lighter load and often a smaller system.
- The furnace and sump pump are the two to be sure you include.
- A gas furnace still needs power — don't assume heat is covered.
- Storms bring outages and rain together, so back up the sump pump.

If you are out in the country on a well

Out in the country on a well, all three matter, and the well pump's big surge dominates the planning. Water, heat, and a dry basement are the trio a rural automatic system exists to protect — through the long, often overnight outages the country tends to get.

- The well pump is essential and demanding — water itself depends on it, and its surge sizes the system.
- The furnace keeps you warm and your pipes safe through long winter outages.
- A sump pump guards the basement, and a battery-backup sump adds a second layer.
- Load management often lets a smaller generator carry all three by keeping the giants from piling on.

> **★ On a well? Let's size around your pump**
> Water, heat, and a dry basement are the trio I most love helping protect. Tell me your setup and I'll help you plan a system that covers them. Call (330) 200-8042.

Making sure they're on your list — and prioritized

The best system in the world won't help these loads if they're not on your must-run list. So put them there, clearly.

When you build your must-run list — which our choosing-your-circuits guide walks through — make water, heat, and a dry basement your top entries. If you use a managed system, be sure the well pump, furnace, and sump pump are set as high priorities, so they run when needed while less urgent big loads take turns.

This is simply making certain the system is built around what matters most to you. Your electrician wires and prioritizes the circuits, but only if you tell them these three are essential — so say so plainly.

> **★ Tell me your top three**
> Water, heat, basement — if those are your worries, tell me, and I'll make sure they're front and center when you plan your system. Call (330) 200-8042.

Sizing around the well pump

For well homes, sizing really does start with the pump — so it's worth understanding how that works.

Your electrician sizes the system so the generator can deliver the well pump's big starting surge on top of everything else you're running. They read the pump's needs from its nameplate or your well company — I won't guess a number — and size the generator and switch to match, often with load management to ease the load. The furnace and sump pump, being lighter, fit comfortably once the pump is accounted for.

You don't do this math. Your job is to make sure your electrician knows you're on a well and that the pump must be backed up. From there, sizing it correctly is their expertise. Our sizing guide explains the thinking in plain English.

> **✔ Tell them about the well early**
> The single most useful thing you can tell an electrician about a rural backup job is that you're on a well. The pump shapes the whole system, so it should shape the conversation from the start.

What an outage looks like with these covered

Here's the payoff — what actually happens to your water, heat, and basement when the power fails.

The lights blink, the generator hums to life, and within seconds your well pump, furnace, and sump pump are running on backup power — just as they were a moment before. Your water keeps flowing, the house stays warm, and the basement stays dry, all without you doing a thing. You might not even wake up.

That seamless continuity is the whole point. Instead of scrambling for water, bundling up against the cold, or bailing a basement, you carry on nearly as normal while the outage sorts itself out. For the loads that matter most, that's exactly the protection you're after.

> **✔ Carry on, nearly as normal**
> With these three covered automatically, a long outage becomes far less of an ordeal — you keep your water, warmth, and dry basement, and mostly just wait for the utility to return.

A second layer for the sump pump

For the basement especially, it's wise not to rely on any single system — and there's an easy way to add a backstop.

A battery-backup sump pump is a separate, smaller pump with its own battery that kicks in if the main pump loses power or can't keep up. Paired with your generator backup, it gives you two independent layers of protection for the one load where failure means real, immediate damage. Even the few seconds of transfer delay are covered, since the battery pump is always ready.

It's an affordable, sensible addition for anyone with a real flooding risk. Think of it as a belt-and-suspenders approach for your basement — the generator handles the long haul, the battery pump covers any gap. It's exactly the sort of setup I'm glad to help you plan.

> **✔ Two layers for the basement**
> The basement is worth double protection: your generator-backed main pump, plus a battery-backup sump pump as a backstop. Together they make a flooded basement very unlikely indeed.

Wiring these loads is a pro's job

Backing up the well pump, furnace, and sump pump means wiring those circuits to your switch — licensed work, start to finish.

The well pump especially is a 240-volt circuit, and connecting it, the furnace, and the sump pump to your transfer switch is a licensed electrician's job, done under a permit and inspection. This isn't a place to improvise — the pump's power and the safety of the whole hookup demand a professional. Our install-and-permit guide covers the process.

> **! The well pump is 240-volt work**
> A well pump runs on 240 volts and can't be safely cord-fed or do-it-yourself wired. Backing it up properly is precisely the kind of job a licensed electrician exists for.

Safety, briefly

Protecting these loads is about safety — and a couple of truths keep the system itself safe.

! The generator still makes carbon monoxide

A standby generator burns fuel, so its exhaust still contains carbon monoxide — an invisible, odorless gas that is dangerous to breathe. Yours lives permanently outdoors, and your installer sets it the manufacturer's required distance from windows, doors, and vents so the exhaust drifts safely away from the house. You never have to place it yourself, but do keep that area clear, never box the unit in or enclose it to quiet it down, and keep tested carbon-monoxide alarms inside the house all the same.

And remember the whole system is licensed, permitted work that keeps your generator's power off the utility lines. In a long winter outage with the furnace running on backup, keep up your carbon-monoxide vigilance indoors as always — CO alarms tested and in place. Any change to which loads are backed up is a licensed electrician's job.

! Warm house, working alarms

A backed-up furnace keeping you cozy through an outage is wonderful — just keep your carbon-monoxide and smoke alarms tested and in place, exactly as you would any winter.

Testing that these loads really work

It's worth confirming, at install and now and then, that your three essentials truly run on backup.

During installation, ask the electrician to confirm — ideally while you watch — that the well pump starts and runs on generator power, the furnace fires up, and the sump pump operates. The well pump especially is worth seeing, since its big surge is the real test of whether the system is sized right. If it starts cleanly under generator power, you know you're covered.

Your regular self-tests keep the generator ready, but they don't usually run these specific loads. So an occasional check — or an exercise-with-transfer, if your installer sets one up — gives extra confidence these essentials will perform when it counts.

> **✔ Watch the pump start at install**
> The best moment to confirm your well pump is properly backed up is at installation, watching it start on generator power. Ask for that test — it's the proof your system is sized right.

Common mistakes with these loads

A few avoidable missteps come up around water, heat, and the basement.

- **Forgetting the sump pump,** then flooding a basement in a rainy outage.
- **Assuming a gas furnace works without power** — it doesn't, and the cold surprises folks.
- **Undersizing for the well pump,** so it strains or won't start under backup.
- **Not telling the electrician you're on a well,** so the pump isn't properly accounted for.
- **Relying on a single system for the basement,** skipping a battery-backup sump layer.

> **! The pump and the sump are the big two**
> Undersizing the well pump and forgetting the sump pump are the two mistakes I'd most warn against — one leaves you without water, the other with a flooded basement. Plan for both.

Questions to ask about these loads

These make sure water, heat, and your basement are truly covered.

Q: Is the system sized to start my well pump under backup?
The pump's big surge is the real test. Confirm the generator and switch are sized to handle it, ideally with a watch-it-start test.

Q: Will my furnace run on backup power?
Make sure the furnace is on your backed-up circuits — even a gas one needs power for its blower and controls.

Q: Is the sump pump included, and should I add a battery backup?
Confirm the sump pump is covered, and consider a battery-backup pump as a second layer for the basement.

Q: Can load management help a smaller generator handle the pump?
Ask whether managing the big loads could let a smaller, cheaper generator cover your well home.

> **✔ There's no silly question**
> These loads are too important to leave to assumption. Ask plainly that each is covered — a good electrician will confirm it gladly.

Common Questions

The questions I hear most about backing up these essentials, answered plainly.

Q: Can an automatic system run my well pump?

Yes — a properly sized system starts and runs a 240-volt well pump automatically. The pump's big starting surge shapes the sizing, and load management can help a smaller generator handle it.

Q: Will my gas furnace work in an outage?

Only if it's backed up. A gas furnace still needs electricity for its blower and controls — no power, no heat. Put it on your list to stay warm and keep pipes from freezing.

Q: Why is the sump pump so important to include?

Because outages and heavy rain arrive together. Without backup, a storm can flood your basement while the generator runs everything else. It's the most-forgotten, most-regretted omission.

Q: Do I need the biggest generator to run the well pump?

Not necessarily — load management can let a smaller generator handle the pump's surge by keeping other big loads from starting at the same instant. Ask your electrician to size it both ways.

Q: Should I add a battery-backup sump pump too?

For a real flooding risk, yes — it's an affordable second layer that covers even the brief transfer gap, so a dry basement never depends on one system.

> **★ Want these three covered right?**
> Call or text me at (330) 200-8042 and tell me about your well, furnace, and basement. I'll help you plan a system that keeps all three going.

What I do to help

Protecting water, heat, and a dry basement is exactly the kind of planning I love to help with.

- **What I help with:** making sure these three are on your list and prioritized, planning around the well pump, and lining up an electrician who knows well systems.
- **What only a licensed electrician does:** wire the well pump, furnace, and sump pump to the switch, and size the system.
- **What I never do:** the 240-volt or panel wiring myself — that's a licensed pro's job.
- **What I'm glad to help with:** planning a battery-backup sump pump as a second layer.

> **★ The essentials are my favorite to protect**
> Water, heat, a dry basement — these are the loads that make backup power truly worth it. I'd be glad to help you cover them well. Reach me at (330) 200-8042.

A water-heat-basement checklist

Keep this handy as you plan — it covers the three that matter most.

- ❑ Well pump on the list and set as a top priority (if you're on a well).
- ❑ Furnace on the list — yes, even a gas one.
- ❑ Sump pump on the list, if a wet basement is any risk.
- ❑ System sized to start the well pump's big surge — confirmed at install.
- ❑ Load management considered, to let a smaller generator handle the pump.
- ❑ A battery-backup sump pump considered as a second basement layer.

> **✔ Cover the three, rest easy**
> Get water, heat, and a dry basement covered, and you've handled the loads that turn an outage from an ordeal into an inconvenience. That's the heart of good backup planning.

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 backing up your well pump, furnace, and sump pump 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

The Three That Matter Most

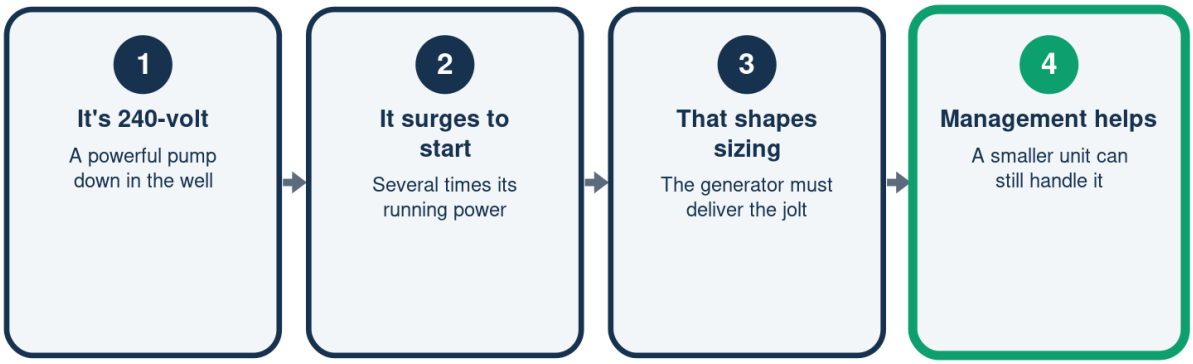
Why water, heat, and a dry basement come first

	The load	Why it's essential
Well pump	Water itself	Big surge to start
Furnace	Heat & safe pipes	Gas still needs power
Sump pump	A dry basement	Storms bring rain
Automatic	Runs them all	While you sleep

These three usually earn the top of any must-run list.

Why the Well Pump Sizes the System

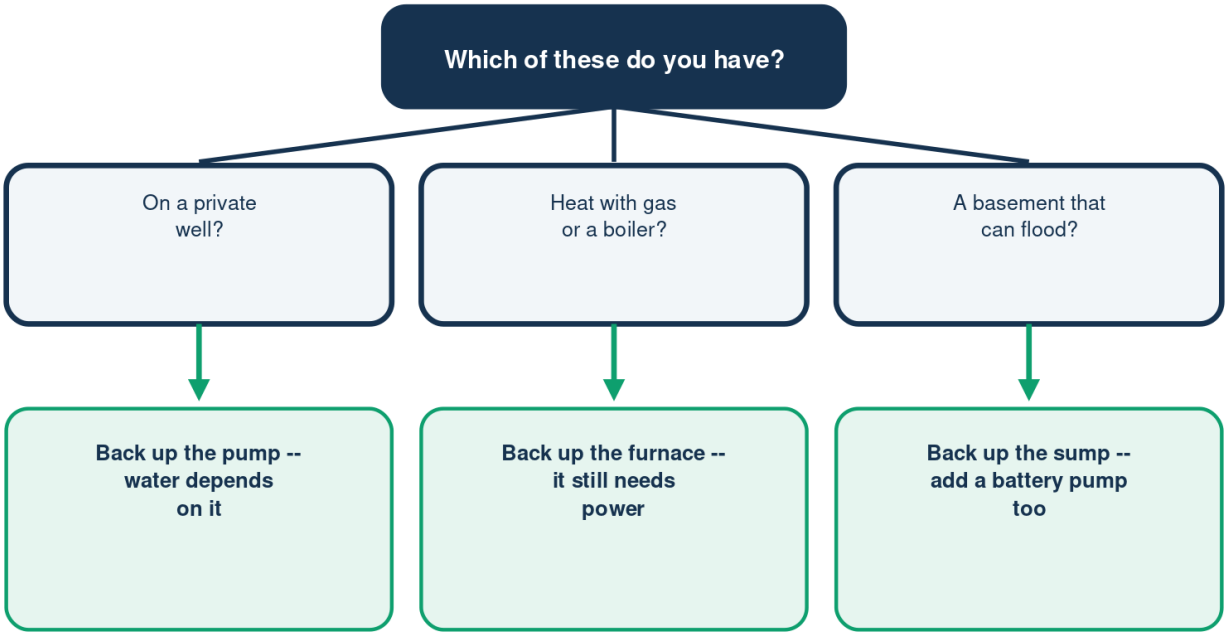
A big jolt to start is the real test



Tell your electrician you're on a well -- the pump shapes it all.

Are Your Essentials Covered?

A quick check for the big three



Storms cause outages and rain together -- never skip the sump pump.

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

Two Layers for the Basement

Belt and suspenders for a dry basement

	Layer	Covers
Generator-backed	The main sump pump	The long haul
Battery backup	A second pump	Any brief gap
Together	Two independent	systems
Result	A flooded basement	made unlikely

The one load where failure means immediate damage deserves two layers.

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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.

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