

When Your Radon System Needs an Upgrade: Signs, Solutions, and What to Expect

If you own a home in St. Louis with an existing radon mitigation system, you might not think about it much. The fan hums quietly in the basement, the manometer shows a steady reading, and your annual radon test kit comes back below the EPA action level. That is exactly how it should work. But radon mitigation systems, like any mechanical equipment, age. Components wear out. Building codes change. And sometimes the system that worked fine ten years ago no longer performs the way it should. That is the moment when a radon system upgrade becomes the smart move, not just a repair.

I have worked on hundreds of existing systems across St. Louis, and I have seen the same pattern repeat itself. A homeowner calls because the U-tube manometer shows zero suction, or the electronic radon monitor starts creeping up, or they smell musty air near the radon vent pipe. Often the first thought is a simple fan replacement. And sometimes that is enough. But other times the real fix goes deeper, and the best long-term solution is a full radon system upgrade.

Why a system that worked might stop working

A typical radon mitigation system uses active soil depressurization, also called sub-slab depressurization. A radon fan pulls air from beneath the basement slab through a suction pit, creates negative pressure under the concrete, and vents the radon-laden air above the roofline through a radon vent pipe. The fan runs continuously. Over time, the fan motor can wear out, especially if it is exposed to moisture or fluctuating temperatures. The condensate bypass can clog, reducing airflow. Sealing cracks in the foundation can degrade, allowing new radon entry points to open up. And sometimes the original system was undersized for the house, and a fan replacement alone cannot fix the underlying problem.

I once inspected a home in south St. Louis where the original system had been installed fifteen years earlier. The radon fan was still spinning, but the manometer reading had dropped to near zero. The homeowner had tried replacing the fan motor, but within a month the reading dropped again. A closer look showed that the suction pit had collapsed, and the sub-slab depressurization was pulling air from the crawl space instead of from under the slab. A simple fan replacement could not solve that. What the house needed was a [radon system upgrade](#) that included re-excavating the suction pit, repairing the crushed vent pipe, and installing a more robust fan with better condensate management.

Signs that an upgrade is overdue

How do you know when it is time to call someone like Air Sense Environmental? Here are the most common indicators I see:

- The U-tube manometer shows zero or near-zero suction when the fan is running. That means the system is not pulling air from under the slab.
- Your annual radon test kit or electronic radon monitor shows levels creeping up, even though the system appears to be running.
- The radon fan is making new noises, vibrating, or cycling on and off. That often signals a failing fan motor or a clogged condensate bypass.
- You notice water pooling around the radon vent pipe or the fan housing, which can lead to ice buildup in winter and fan failure.
- The system is more than ten years old and has never had a thorough radon inspection. Components age, and the technology has improved.

If any of those sound familiar, a repair might buy you a year or two, but a radon system upgrade will likely give you better performance and longer peace of mind.

What an upgrade typically involves

A radon system upgrade is not just swapping out the radon fan. It is a systematic review of the entire mitigation system, followed by targeted improvements. The first step is always a complete radon inspection. That includes checking the manometer reading, inspecting the radon vent pipe for blockages or damage, looking at the suction pit for signs of collapse or water intrusion, and testing the sub-slab depressurization to confirm the negative pressure field is reaching all the radon entry points.

Once the inspection is done, the upgrade plan might include:

- Replacing the fan motor with a more efficient, quieter model that matches the current airflow needs of the house.
- Upgrading the condensate bypass to prevent moisture from collecting in the fan housing and the radon vent pipe.
- Re-routing or extending the radon vent pipe if it was not originally run above the roofline or if it has been damaged.
- Adding new suction pits or sealing additional cracks in the foundation if the original system missed areas where radon is entering.
- Installing a remote manometer or an electronic radon monitor that can send alerts to your phone, so you know immediately if the system stops working.

In some cases, the entire active soil depressurization system needs to be reconfigured. That is not as common, but it happens. And when it does, a partial repair is a waste of money. A proper radon system upgrade addresses the root cause, not just the symptom.

The role of radon detection in planning an upgrade

One thing I emphasize with every homeowner is that radon detection is not a one-and-done task. A single radon test kit from the hardware store gives you a snapshot, but radon levels can change with the seasons, with changes in the weather, and with changes in how you use your home. If you are considering a radon system upgrade, I recommend running an electronic radon monitor for at least a month before you start the work. That gives you a baseline. Then run it again after the upgrade to verify the system is working. I have seen cases where a homeowner replaced the fan, but the radon levels stayed high because the real problem was a hidden radon entry point behind a finished wall. Good radon detection before and after the work prevents that.

Warranty and long-term planning

A good mitigation system warranty covers the radon fan and the installation for a defined period, often five to ten years. But warranties vary widely. Some cover parts only. Others include labor. A few cover the entire radon vent pipe and the suction pit. When you plan a radon system upgrade, ask the installer about the warranty on each component. A fan motor that is under warranty for ten years is a different value proposition than one warrantied for two years. Also ask whether the warranty covers the manometer and the condensate bypass, because those are the parts that fail most often.

I always tell homeowners to keep a log of their manometer readings. Write down the date and the reading every month. That takes thirty seconds, and it gives you a record of the system's performance over time. If the reading starts to drift, you catch it early, before it becomes a problem. That kind of simple habit can extend the life of your system and help you decide when it is time for a fan replacement versus a full radon system upgrade.

When to call a pro

Some homeowners are handy, and I respect that. But radon mitigation systems involve moving air, managing moisture, and maintaining negative pressure under a concrete slab. Getting it wrong can mean the system runs but does not actually reduce radon levels. Worse, a poorly repaired system can give false confidence. If you live in St. Louis and your system is acting up, call Air Sense Environmental. They specialize in existing systems, not just new installations, and they understand the local soil conditions, the typical foundation types, and the common installation mistakes from the early years of radon mitigation.

I saw a house in University City where the original installer had run the radon vent pipe into an attic space instead of through the roof. That was fine for a few years, but then the pipe got knocked loose during a roofing job. The radon fan kept running, but the radon was venting into the attic instead of outside. A radon test kit in the living room showed elevated levels, but the homeowner could not figure out why. A professional radon inspection found the problem immediately. The fix included re-routing the radon vent pipe through the roof and adding a proper condensate bypass. That was not just a repair. It was a radon system upgrade that fixed a flawed original installation.

Final thoughts

Your radon mitigation system is a machine. It has moving parts, it handles moisture, and it works hard 24 hours a day, 365 days a year. Eventually it will need attention. When that time comes, do not just replace the radon fan and hope for the best. Take the opportunity to do a full radon system upgrade. Address the suction pit, the radon vent pipe, the condensate bypass, and the radon entry points. Get a proper radon inspection before and after. Ask about the mitigation system warranty. And keep an eye on that manometer. A well-maintained system will protect your home for decades. A neglected one will quietly stop working, and you might not know until your next radon test kit tells you the bad news.