

## **Mike Menzel, MD**

As a Minnesota physician and co-founder of Health Professionals for a Healthy Climate, I'm concerned about the public health dangers of CO2 pipelines and storage areas.

Currently there are no adequate protections in place at the Federal, State and Local levels to protect people, communities and our natural resources. We thank the administration for taking our comments to rectify this issue.

CO2 is odorless, colorless, heavier than air and displaces oxygen. This means that people, pets, and all living things around the leak are at risk of being choked to death. Contrary to industry claims, when it comes to CO2 pipelines, we cannot treat it similar to other liquid pipelines and need to see more safety regulations.

When CO2 pipelines fail, because they have such high pressure, they tend to fail hard. A rupture can open up a gash that is miles long. So, we'd like PHMSA to require safety measures that will limit rupture size.

In 2020, Denbury Enterprises 'Delta pipeline experienced a sudden rupture and release of CO2 gas near Satartia, Mississippi, making this gassing the first known instance of an outdoor mass exposure to piped CO2 gas anywhere in the world, according to the World Health Organization.

Some two dozen individuals were overcome within a few minutes becoming disoriented. Cars just shut off, since they need oxygen to burn fuel trapping citizens who slowly suffocated on the CO2 waiting for rescue that couldn't arrive. Rescue personnel couldn't reach the citizens as their vehicles wouldn't work either. The pipeline operator, Denbury Inc., violated several regulations that night.

As a doctor, I can tell you that mass CO2 poisoning is not something we are trained for. If my community is at risk for these events, we need proper training and equipment to be prepared for such an event.

The industry desperately wants us to believe that CO2 pipelines are safe and Satartia was a one-off incident. However, just last week, residents Sulphur, LA, were asked to shelter in place April 3, 2024 because of a leak in a high-pressure carbon dioxide line. The 1/4 mi shelter-in-place was an inadequate putting other residents in danger.

Another major concern is with storage of CO2 in underground reservoirs because stored CO2 could leak out and contribute to climate change, or taint nearby water supplies. There is also the risk of human-made tremors caused by the build-up of pressure underground, known as induced seismicity.

These risks are in addition to sudden release of stored CO2- similar to a pipeline rupture- called blowouts.

The industry mentions they've been storing CO2 underground for decades while conveniently ignoring the safety issues.

In Jackson, Mississippi, Denbury paid a \$662,500 fine following a 2011 oil well blowout. Denbury has already had two other blowouts in Mississippi, one requiring the evacuation of local homes in Amite County in 2007.

Another underground CO2 blowout at Delhi field in 2013 lasted for more than six weeks and contaminated the air with unsafe levels of both CO2 and methane.

A school in Wyoming was forced to close and houses evacuated due to leakage of CO2 from a storage site 2016.

The U.S. government has appropriated billions of dollars into developing carbon storage projects. Before large-scale deployment happens we need specific, detailed studies of which sites are safest to protect public health for CO2 pipelines and long-term storage.

**Kathleen Schuler, MPH, is volunteer Policy Director with Health Professionals for a Healthy Climate.**

There are many issues that are unique to CO2 pipelines that PHMSA must address to assure public health and safety prior to the construction of any new pipelines. PHMSA must also address the safety of existing pipelines. Here are ten recommendations for PHMSA pipeline regulations to address the unique health and safety risks of CO2 pipelines.

1. Ensure that updated pipeline design, construction, and initial testing regulations **apply retroactively to existing pipelines.**
2. **Include gaseous and liquid CO2 in the CO2 Definition.** Currently PHMSA only sets safety rules for supercritical CO2, which could leave thousands of miles of pipelines that are not covered by any safety regulations.
3. **PHMSA must set maximum levels of contaminants that are based on an understanding of the ways these contaminants will interact in pipelines and how those interactions could contribute to ruptures.** For instance, water in wet CO2 from ethanol production can create carbonic acid, which can weaken pipeline integrity and increase risk of rupture.
4. **Mandate the use of odorants**, which can alert the public and first responders to a threat from a CO2 rupture. A cloud of CO2 is impossible to detect since it is invisible and odorless.
5. **Assure adequate safety zones**, as pipelines that transport CO2 could spew CO2 for miles, creating an invisible cloud of suffocating gas that can asphyxiate everything in its path. With the pipeline rupture in Satartia we saw that impacted people were outside of the official area of concern for ruptures. We need to avoid building CO2 pipelines near schools, shopping centers, and other densely populated areas.
6. **Train first responders.** PHMSA must require pipeline operators to update required procedural manuals and provide regular training and equipment to first responders to ensure they are adequately prepared for a large-scale evacuation that could occur from a CO2 rupture.
7. **Require operators to include geohazard mitigation in their inspection and maintenance plans.** There have been several serious pipeline failures recently due to land movement and other geological hazards.
8. **Require that pipeline construction companies refrain from hiring any employees or contractors who have been convicted of a sex offense or domestic violence.** Sex trafficking increases along pipeline construction routes and particularly threatens rural and Indigenous communities.
9. **Require that pipeline operators fully track and account for CO2 through the entire system.**
10. **Strengthen federal regulations for conversions of existing pipelines to CO2 service and conversions of CO2 pipelines to other uses.**

**Vishnu Laalitha Surapaneni, MD, MPH**

*I'm a board certified physician, a researcher, and educator, currently practicing in Minneapolis with a public health degree from Johns Hopkins Bloomberg School of Public Health.*

*As a physician advocate, I've provided expert testimony to the Minnesota legislature on public health impacts of climate change, co-authored white papers on health harms of fossil fuel infrastructure, and served on the Minnesota state DOT's Sustainability Transportation Advisory Council (STAC) in a governor-appointed role.*

Thank you for this opportunity to advocate for protecting public health from the unnecessary and unacceptable harms of CO2 pipelines

First, I want to clarify that the fossil fuel industry's promotion of CCS as a climate solution is quite simply a diversion from the urgent need to transition to renewables. I understand that today's meeting is about the OMB taking comments on pipeline safety. So, you may think that addressing CCS in its entirety does not fall under your purview. However, I've reviewed the American Petroleum Institute's presentation to the OMB and I see that the industry is using the administration's climate goals and the need to reduce emissions as the reason why, and I quote, "*the rule must ensure it supports rather than hinders the buildout of this additional CO2 pipeline infrastructure*". So, I urge you to recognize this false sense of urgency being created by the industry. Similar to how the tobacco industry introduced the "filtered cigarette" as a healthy option, CCS is being used as a "climate solution" by the industry to promote their profits.

In reality, a health modeling study from Stanford showed that in the scenario where CCS is used on a coal power plant, social costs and air pollution increase when compared to transitioning to renewables. And these increased health harms of air pollution fall on the predominantly Black, Brown, Indigenous, and low-income communities who are often on the frontlines of polluting industries.

This is not just a hypothetical research study, but is becoming reality rapidly. Misusing the 45Q federal tax credits, the industry is attempting to retrofit power plants and industries with CCUS technologies instead of moving to renewable energy.

So, while it may seem that the issue at hand requires us to remain focused on CO2 pipelines, it is, in fact, crucial to see the full picture and ask if the buildout of existing 5k miles of CO2 pipelines and the anticipated up to 96k miles of pipelines is beneficial or necessary to public health, health equity, and ecosystem health in the first place. For example, between 2005 and 2016, coal plants going offline saved around 22,000 lives. These health gains could be reversed if lax CO2 pipeline regulations are misused to build out more CO2 pipelines and prolong the life of the fossil fuel industry.

Finally, in case of the industries that are hard to decarbonize and need CCS with current technologies, and thus CO2 pipelines, I urge you to improve their safety by the following measures 1) adding odorants to transported CO2, 2) conducting independent studies to assess a safe zone for pipeline leaks because the current guidelines are still leaving residents impacted, as seen in the most recent Denbury pipeline leak in Sulphur Louisiana, and 3) compelling the industry to educate the public, especially health professionals about safety

protocols and provide necessary resources to local hospitals, in case of CO2 pipeline leaks and ruptures before construction begins.