SAFETY RECORD OF EXISTING CO₂ PIPELINE NETWORK

CO₂ pipelines have been operating safely in the United States for more than 50 years. Currently, 50 operating pipelines span over 5,000 miles with individual pipelines safely transporting millions of tons of CO₂ annually over hundreds of miles and across entire regions of the country. These pipelines have an excellent safety record—one that easily surpasses other climate-essential energy infrastructure, such as electric transmission and distribution systems. Safety data reported by the Pipeline and Hazardous Materials Safety Administration (PHMSA), the agency charged with overseeing CO₂ pipeline safety, shows that CO₂ pipelines have been and can be operated at the highest level of safety by best-practice operators. Since reporting began, CO₂ pipelines have had a strong safety record, though a rare, but serious pipeline failure in Satartia, Mississippi in 2020 has increased public and policymaker concerns about pipeline safety and the overall reliability of these systems as they scale.

Over the course of the past several decades, well-respected international climate assessments have continued to emphasize the need for carbon management technologies to help meet midcentury climate targets. Congress has, in turn, heeded this call, investing in significant federal policy support to incentivize the widespread deployment of the full suite of these technologies. This has directly resulted in a significant increase in announced projects to capture emissions from industrial and power sources, as well as directly from the atmosphere. In order for these technologies to reach their full potential, a substantial buildout of safe and reliable CO₂ pipeline infrastructure will be needed to transport large quantities of captured CO₂ from emissions sources to points of reuse and permanent geologic storage.

CURRENT SAFETY STANDARDS UNDER PHMSA

The U.S. Department of Transportation (DOT) has regulated the safety of CO₂ pipelines since the Hazardous Liquid Pipeline Act of 1979. PHMSA was established in 2004 as an agency within the U.S. Department of Transportation and currently oversees CO₂ pipeline safety. Under current statute, there are multiple steps that CO₂ pipeline operators must take to ensure pipelines are operated safely, including:

- ☑️ attention to pipeline design
- ☑️ protection against corrosion
- ☑️ monitoring for leaks
- ☑️ safeguards against overpressure

Operators must have pressure monitors on their pipelines to know when a leak or rupture occurs and can initiate shut-off valves to mitigate the release of CO₂ from the pipeline.

Additionally, CO₂ pipeline operators are required to submit an annual report to PHMSA, including information such as the length (miles) of the operated pipeline, the barrel-miles of CO₂ transported (total barrels of CO₂ transported multiplied by miles of pipeline), along with various safety inspections and structural integrity assessments conducted that year.

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In PHMSA’s current regulations, all newly constructed CO₂ pipelines must include automatic shut-off valves, contributing to faster shut down times. Faster shut down times will help improve safety by allowing faster access to emergency first responders who respond to fires and injuries.

In 2022, PHMSA released the incident report for the 2020 pipeline failure in Satartia, Mississippi, which provided insights into probable operator violations that led to the rupture. Along with the report, the agency announced several additional measures the agency is undertaking to ensure that the further buildout of CO₂ transport infrastructure is done to the highest safety standards, including a new rulemaking that will build upon existing comprehensive CO₂ pipeline regulations.

The Coalition supports the implementation of common-sense steps to ensure these projects can safely scale, responsibly, and with urgency. To that end, the Coalition’s 2023 Federal Policy Blueprint details a comprehensive and targeted set of measures Congress and the Administration should take to ensure these transport and storage networks are designed, constructed, and maintained at rigorous standards delivering the highest levels of reliability and safety. These measures can further enable the deployment of these technologies at levels sufficient to meet decarbonization goals and should include the following:

- Expand first responder training for CO₂ pipeline safety incidents.
- Request that PHMSA conduct additional reporting on the public safety record of CO₂ pipelines.
- Require that project proponents more rigorously consider potential geohazard impacts on CO₂ pipelines during design, siting, construction, and maintenance.
- Carry out a national assessment of the CO₂ network necessary to meet net-zero emissions.

The Carbon Capture Coalition champions common-sense steps to build upon comprehensive existing CO₂ pipeline regulations and looks forward to continuing to engage with the agency and bipartisan members of Congress to take steps to support the responsible buildout of these systems.

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