ExxonMobil | Pipeline

CO_2 Pipeline Safety

Protecting Communities & the Environment

"Statistics [show] the transportation of CO_2 in its supercritical form has been safer relative to other hazardous liquids/gases; releases have been rare, and releases have rarely impacted people or the environment."[1]

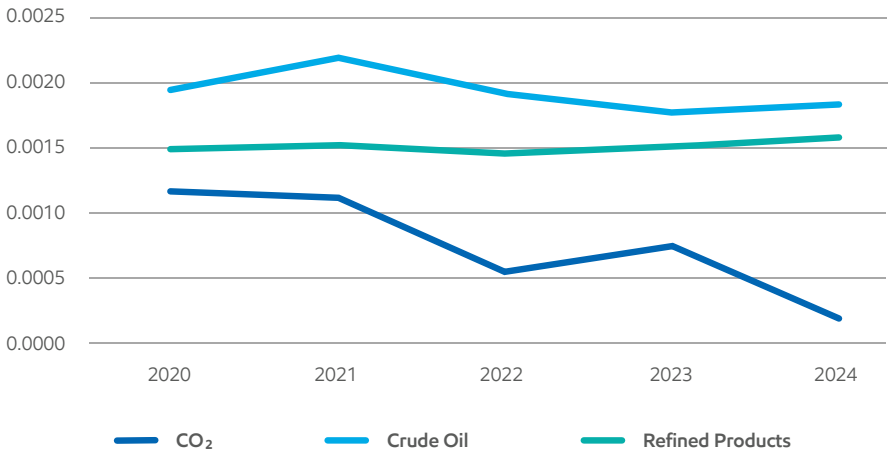
– U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA)

CO_2 pipelines have operated in the U.S. for more than 50 years.

- Approximately 5,200 miles of CO_2 pipelines safely transport about 68 million tons of CO_2 per year in the U.S.
- Federal pipeline safety data show CO_2 pipeline incidents are rare and declining on a per mile basis.
- From 2000-2024, the average yearly CO_2 pipeline incident rate was less than 0.002 incidents per pipeline mile.
- CO_2 pipelines have a lower incident rate than do other hazardous liquids pipelines.
- CO_2 pipeline releases typically result in relatively minor, on-site impacts. Less than 20% of property damage related to incidents since 2010 has affected the public, with the vast majority limited to operator facilities and equipment.

CO_2 Pipelines Have the Lowest Incident Rate[4]

Incidents Per Mile



PHMSA CO_2 Pipeline Incident Data			
Year	Incidents[2]	Fatalities	Injuries[3]
2000	1	0	0
2001	1	0	0
2002	4	0	0
2003	7	0	0
2004	3	0	0
2005	2	0	0
2006	7	0	0
2007	4	0	1
2008	7	0	0
2009	4	0	0
2010	6	0	0
2011	4	0	0
2012	2	0	0
2013	5	0	0
2014	5	0	0
2015	7	0	0
2016	9	0	0
2017	9	0	0
2018	5	0	0
2019	4	0	0
2020	6	0	0
2021	6	0	0
2022	3	0	0
2023	4	0	0
2024	1	0	0
TOTALS	**116**	**0**	**1**
AVG/YR	**4.6**	**0**	**0**

The one reported injury involved a contractor hurt during the excavation of a CO_2 pipeline.

[1] Pipeline and Hazardous Materials Safety Administration, Carbon Dioxide Pipeline Regulation and Safety Oversight, p. 15, March 2023. https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2022/HP22-002/testimony/Navigator/MHerethExhC.pdf

[2] PHMSA defines reportable incidents as releases that involve a fatality or injury requiring hospitalization, an explosion or fire, a release of five gallons or more, or estimated property damage exceeding $50,000, including cleanup and repair costs.

[3] PHMSA defines injuries as those sustained as a result of the incident and requiring both hospital admission and at least one overnight stay.

[4] Liquid Energy Pipeline Association, CO_2 Pipeline Safety: Track Record of Safety, 2025. https://liquidenergypipelines.org/Documents/en-us/ace6627c-879d-426b-9c20-00e84acb88ba/1

As with any beneficial industrial process, transporting CO_2 involves risks, including the fact very high concentrations of CO_2 can displace oxygen. Recognizing these risks, government and industry focus on safe construction and operating practices. This focus has resulted in the industry's 50-year history of safe operations. Building upon this track record, ExxonMobil Pipeline Company (EMPCo) continues to lead the development of enhanced safety practices and standards.

Government Regulation

- Hundreds of federal safety requirements govern CO_2 pipeline construction, inspection, maintenance, monitoring and incident response.
- Federal law allows states to assume safety authority over intrastate hazardous liquid and CO_2 pipelines.
- PHMSA and the Louisiana Department of Conservation and Energy (LDC&E) audit, inspect and enforce compliance of federal and state safety requirements.
- LDC&E regulates more than 4,500 miles of hazardous liquids pipelines.

Integrity Management Programs

- Federal law requires Integrity Management Programs (IMP) for pipelines in High Consequence Areas (HCA), such as populated areas.
- IMPs are risk-based systems that assess the risks to the safe operation of each pipeline and customize maintenance programs to mitigate those risks.
- The primary elements of an IMP include identifying, prioritizing and managing risk; performing integrity assessments; integrating data from multiple monitoring sources; conducting preventive maintenance and making repairs.
- Inspections include using diagnostic tools called "smart pigs" that travel inside pipelines scanning the pipe walls for items that should be addressed.

CO_2 Pipeline Monitoring

- EMPCo's controllers monitor pipeline operations 24/7 from our state-of-the-art operations control center.
- The control center is connected to pipeline facilities by cellular and/or satellite communications and can shut down pipelines with a press of a button.
- On-site, technicians regularly inspect the pipeline facilities and rights-of-way.
- Specially trained pilots conduct aerial patrols along the pipeline route to look for unusual conditions.

CO_2 Pipeline Emergency Preparedness

- EMPCo has developed an industry leading safety culture and integrity management program designed to prevent incidents from happening.
- To help prepare for the rare possibility of an incident, we regularly meet and train with emergency response officials and first responders.
- We attend Local Emergency Planning Committee (LEPC) meetings organized by parish emergency response officials and conduct in-person briefings with public officials along our routes. During these meetings we provide guidance and on-site training. We also conduct periodic drills with first responders to practice emergency response tactics
- EMPCo provides recommendations and grants for emergency response equipment to fill gaps as much as practicable.

Recognized Safe Operator

- EMPCo has earned the American Petroleum Institute's (API) top safety award three years in a row.
- EMPCo has been recognized recently by the National Association of State Fire Marshals (NASFM) for its promotion of emergency preparedness with its Norman Mineta Excellence in Transportation Safety Award.
- API experts rated EMPCo's pipeline safety management system with some of the highest scores in the history of API's safety audit.

Snapshot of Satartia CO_2 Incident

The most significant CO_2 pipeline incident occurred in a hilly region near Satartia, MS. Forty-five people sought medical care at the nearby hospital, no one needed to be admitted overnight and no lives were lost.

The release was caused, not by the CO_2 flowing through the pipeline, but by a landslide that placed so much force on the pipe, it broke in two. CO_2 pipelines are built with such strong materials to withstand great pressures that this remains the only full-bore rupture of a CO_2 pipeline.

In response, ExxonMobil and the rest of industry enhanced their practices around three key areas: geohazard monitoring and prevention to mitigate the risks of land movement, dispersion analysis modeling to better predict CO_2 flow over hilly, complex terrains and emergency response to better coordinate and train with first responders. Today's operations are safer as a result.

EMPCo led industry efforts to enhance CO_2 pipeline emergency response standards. We now conduct the industry's first hands-on CO_2 emergency response training at Texas A&M's TEEX Brayton Fire Training Field, the Mississippi Fire Academy and Louisiana's Fire and Emergency Training Academy.

EMPCo operates a mobile training trailer allowing us to take emergency response training directly to fire departments. The trailer contains pipeline props and other materials to provide realistic, hands-on training.