



March 6th, 2026

State Fire Marshall Daniel Berlant
Office of the State Fire Marshal
715 P St
Sacramento, CA 95814

Re: Comments on Draft Regulations for Carbon Dioxide (CO₂) Pipeline Safety Standards

Dear State Fire Marshal Berlant,

We, the undersigned organizations, submit these comments on the [draft regulations](#) implementing Senate Bill 614. Our organizations represent communities, workers, and residents across California's Central Valley and beyond who would bear the direct impacts of carbon capture, utilization, and storage (CCUS) infrastructure development, including the construction and operation of high-pressure CO₂ pipelines.

We appreciate the State Fire Marshal's (SFM) efforts to develop comprehensive safety standards and the opportunity to provide input on the draft regulations. Given the significant impacts that CO₂ pipelines can have on our communities, we look to have the emergency regulations that are focused on protecting the health and safety of our communities.

Public health must be the focus of the regulations

The State Fire Marshal's regulations must be grounded in a public health framework that prioritizes protection of human life above all other considerations, including economic development, industry convenience, or technological aspirations for carbon capture deployment. The regulations should explicitly state the protection of public health and safety is the main objective, and that no level of risk that could result in loss of life or serious injury to community members can be deemed acceptable.

We specifically urge the Office of the State Fire Marshal (OSFM) to establish the following principles regarding risk:

- The regulations must clearly articulate that their fundamental purpose is to prevent injury, loss of life, and protect public health.
- The regulations should establish that if a CO₂ pipeline project's modeling identifies the possibility of failure that could result in fatalities or serious injury among the general public or workers involved in pipeline construction, operation, maintenance, or emergency response, then the project does not meet OSFM standards and should not be approved unless the pipeline is rerouted and built with higher standards and all risks are addressed and eliminated via the recommendations in this letter.
- Pipelines that have Sensitive Receptors within the emergency planning zone shall be required to install thicker-walled pipe, or use a design factor (F) of 0.5 when determining the internal design pressure at 49 CFR195.106.
- As regulations evolve and safety standards are strengthened, existing CO₂ pipelines should not be exempted or "grandfathered" under older, less protective requirements. The regulations, as required by SB 614, shall require that all operating pipelines be brought into compliance with new standards within reasonable timeframes. "Reasonable timeframes" should be determined based on technical feasibility and time required to safely implement upgrades without additional hazards. Cost or economic impact to operators must not be factors in determining compliance deadlines.

Emergency Response Preparedness

The 2020 Satartia, Mississippi pipeline rupture resulted in 45 people being transported to a hospital for treatment and required evacuation of nearly 200 residents. Victims were discovered unconscious in their vehicles¹, unable to self-rescue. These are not theoretical risks, they are documented realities that demonstrate why CO₂ pipelines pose fundamentally different hazards than other industrial infrastructure.

The draft Pipeline and Hazardous Safety Materials Administration (PHMSA) regulations recognized this difference by proposing an amendment to 49 CFR195.402 "to require all carbon

¹ Simon, Julia. "The U.S is expanding CO₂ pipelines. One poisoned town wants you to know its story." NPR, May 21, 2023. <https://www.npr.org/2023/05/21/1172679786/carbon-capture-carbon-dioxide-pipeline>

dioxide pipeline operators to provide training to emergency responders that addresses threats specific to carbon dioxide releases and provide equipment to local first responders for use during an emergency on a carbon dioxide pipeline.” However, the draft PHSMA regulations did not provide further detail on the types of equipment and training that must be provided - details which we believe the state’s regulations must specify.

Since elevated CO2 concentrations can incapacitate, kill, or seriously injure victims within minutes, it is critical that at-risk persons have notice as quickly as possible following a carbon dioxide pipeline rupture and that first responders have sufficient emergency equipment for extended operations in low oxygen environments. Equipment and training needs should include:

- Oxygen supply stations at strategic locations supplied and maintained by the operator (Ex: Buttonwillow Recreation Center, Buttonwillow Elementary School, Buttonwillow fire station)
- CO2 detection alarms provided free to all residents and facilities within 2 miles
- Mandatory “push” notifications of an incident, sent to all persons within 2 miles
- Dedicated emergency evacuation vehicles (electric buses or vans) stationed in rural communities
- Electric mobile medical units with emergency oxygen supplies and life support capabilities
- Quarterly emergency drills in schools and specialized training for school staff
- Upgrades to local emergency response infrastructure (fire stations, equipment, training facilities)

Additional equipment and training are needed for rural communities where longer emergency times increase the likelihood of residents facing self-rescue in the event of a pipeline leak and poor local access to hospitals.² For example, self-contained breathing apparatus may need to be supplied to individual homeowners in addition to community centers. Local clinics (Ex: Omni Family Health Center in Buttonwillow), in addition to hospitals, will need CO2 exposure treatment supplies and regular training should be offered directly to rural residents in multiple commonly-spoken languages. We encourage the SFM to consult with rural providers of emergency services to inform the development of regulations to complement the urban representation on the Pipeline Safety Advisory Committee.

SB 614 requires that the public is well informed of CO2 pipeline locations and safety decisions through multiple notification requirements, including Government Code Section 51015.06 which requires operators to provide inventories and maps of sensitive receptors, and Public

² The experiences of residents in rural areas of Kern County demonstrate these challenges. One community member described how their daughter suffered chronic health issues from living next to an oilfield throughout her childhood, including at her elementary school where she experienced constant severe headaches and would fall asleep in class due to her exposure to oil field emissions. When their daughter required emergency treatment, she had to be airlifted from their small town to a hospital in a larger city, the type of rescue that will not be available in the event of a CO2.

Resources Code Section 21087(d)(3) which requires the SFM to publicly disclose determinations that pipelines are constructed consistent with state safety standards. To avoid the public needing to rely on a patchwork of different agency websites to compile pipeline location information, the SFM should create a centralized landing page dedicated to all CO2 pipeline information. This centralized, promptly updated resource would ensure communities can readily access critical safety information about CO2 pipelines that threaten their health and safety.

Public Notification and Engagement Requirements for Pipeline Siting

Section 2174(g) of the draft regulations require that “Prior to receiving permits for construction of a carbon dioxide pipeline, operators must hold public meetings with local officials, community members, and stakeholders discussing the project routing. Operators are required to accept written and oral public comment and must respond to comments received.”

We appreciate that the draft regulations will explicitly require public engagement on project routing before permits are issued, though we believe this section should be strengthened with the following additional specificity:

- Early notification - Public notification and engagement must occur early in the project planning process, not after key decisions have already been made. Operators should be required to provide written notice at least 180 days before submitting any permit application to allow meaningful community input to influence project design and routing decisions. Public meetings must be held at multiple points throughout the permitting process, not just once, to ensure ongoing community engagement.
- Appropriate languages - All public notifications, meeting materials, and responses to comments must be provided in English and in all threshold languages spoken by at least 5% of the population in affected communities. Translators must be provided at all public meetings to ensure that non-English speaking residents can fully participate. Materials should be written in plain language to ensure accessibility.
- Multiple communication methods- Operators must use multiple communication methods to ensure all community members are reached, including: direct mail to all addresses within emergency planning zone; posting notices at community gathering places including schools, libraries, community centers, churches, and local businesses; online publication with interactive mapping tools showing the proposed route and impact zones; social media outreach in multiple languages; door-to-door canvassing in areas with limited English proficiency, or low-income residents who may not receive information through traditional channels; and coordination with trusted community organizations and farmworker advocates to help disseminate information.
- Risks should be disclosed - The regulations must require that operators and lead agencies communicate risks to affected communities in clear, accessible plain-language that does not minimize or obscure potential dangers. While SB 614 does not specify

notification content beyond CEQA requirements, the State Fire Marshal should adopt a similar notification requirement as the Air Toxics “Hot Spots” Information and Assessment Act that require notifications to include basic information about potential impacts for toxic air emissions that cannot be mitigated below certain thresholds. The notification should include explanation of health risks from CO2 exposure at various concentration levels and durations, including specific risks to vulnerable populations and a map showing exactly where the specific risks exist within a specific time of rupture.

- Identification of “community members” - The State Fire Marshal’s regulations should clearly define who constitutes “community members” entitled to direct notification under section 2174(g). This should include at minimum “sensitive receptors” as defined by SB 614 section 51010.5 as well as anyone who works in the affected area, community-based organizations serving affected populations and tribal nations whose ancestral territories or current lands may be affected.

Higher design standards for pipelines near sensitive receptors

The consequences of a high-pressure CO2 pipeline failure are potentially catastrophic and fundamentally different from other industrial hazards. Unlike many chemical releases that can be mitigated with shelter-in-place protocols, CO2 pipeline ruptures can create zones where victims lose consciousness within seconds or minutes, with no warning odor or visible cloud.

Given the unique hazards, communities should not be forced to accept exposure to potential catastrophic CO2 pipeline failures, the regulations must explicitly recognize that siting CO2 pipelines near sensitive receptors places unacceptable burdens on already vulnerable communities.

We believe there should be a requirement for higher design standards when sensitive receptors fall within the planning area or potential impact zone of the proposed CO2 pipeline. If CO2 pipelines are to be considered near populated areas, the regulations must require significantly enhanced safety measures, including thicker-walled pipe, increased depth of cover, direct community notification systems integrated with leak detection systems, public access to real-time monitoring data through online dashboards, public mapping and disclosure of all buffer zones and impact area, public reporting of all inspection findings and corrective actions such as the CalOES spill reports.

Establishing Risk Standards

Section 51011.6 (a) of SB 614 requires that operators cannot construct CO2 pipelines where sensitive receptors are located within the emergency planning zone (2 miles on either side of the pipeline) unless computational fluid dynamics modeling demonstrates that risk of CO2 exposure from pipeline rupture is “within an acceptable range as determined by the lead agency”. We urge the State Fire Marshal to recognize that leaving lead agencies without guidance on defining or determining “acceptable risk” does not serve communities well, it simply shifts the burden to local officials who may lack technical expertise or who may face intense

political and economic pressure to approve projects regardless of risk. The State Fire Marshal can support local decision-making by providing the technical framework and information necessary to make informed choices that protect their communities.

The State Fire Marshal's regulations must provide specific guidance on CO2 concentration thresholds that clearly identify risks to human health over specific timeframes. The National Institute for Occupational Safety and Health (NIOSH) finds that exposure to 4 percent CO2 is "immediately dangerous to life and health" (IDLH) because that concentration can cause confusion and impair ability to respond and get to safety³. While the response to CO2 inhalation varies even in healthy individuals, we reject the idea that potential exposure to any CO2 level should be considered "acceptable", especially for environmental justice communities that are already overburdened by industrial pollution and health impacts.

The regulations should establish that the computational fluid dynamic modeling for worst-case rupture scenarios cannot show any pathway for CO2 concentrations to reach the IDLH threshold of 40,000 ppm (4%) or higher at any location where members of the public or workers could be present. Lead agencies must be provided with clear scientific thresholds based on established OSHA standards and toxicological data, not left to negotiate "acceptable" exposure levels with project applicants who have economic incentives to minimize predicted impacts.

State Fire Marshal shutdown authority

We strongly support the State Fire Marshal's authority to require immediate shutdowns when there is an imminent health and safety risk as provided in Government Code section 51018.9. The regulations should establish clear enforceable standards that define "immediate danger" to ensure this critical authority cannot be undermined by industry pressure or economic considerations and could delay or prevent necessary protective action in critical situations.

We urge the State Fire Marshal to define "immediate danger" in the regulations to include, at minimum:

- Detection of any CO2 release, leak or loss of containment regardless of size
- Seismic activity or geohazard events that could have affected pipeline integrity
- Failure of safety systems or monitoring equipment
- Operator violations of safety requirements
- Any condition presenting risk of pipeline failure that could result in injury, death, or environmental harm

The regulations must also include explicit provisions preventing economic considerations from delaying or preventing necessary shutdowns. The SFM's determination that immediate danger exists must be based solely on technical safety factors and public health protection, without consideration of economic impact to the operator, disruption to CO2 supply, or potential effects on California's climate goals.

³ USDA. "Carbon Dioxide Health Hazard Information Sheet." August 2020.
https://www.fsis.usda.gov/sites/default/files/media_file/2020-08/Carbon-Dioxide.pdf

Environmental review and disclosure

SB 614 states that for projects including construction of CO2 pipelines, “the lead agency [shall] prepare or cause to be prepared an EIR or equivalent documentation, as defined, and to certify or adopt those documents for the project.” The intent of this language was to ensure that a full environmental review and alternatives analysis under existing CEQA law was conducted for CO2 pipelines. The regulations should assume that many CCUS projects will find ways to avoid CEQA review as required by current law. To protect against potential significant weakening of CEQA as it relates to CO2 pipelines, the State Fire Marshal should build robust safety analysis, public disclosure, and community participation requirements directly into the CO2 pipeline permitting framework.

Finally, Government Code Gov Code section 51011.5 requires that at least once every five years, the OSFM shall assess the safety standards and may amend the regulations to update safety standards. The regulations should make this evaluation open to public comment, requiring the OSFM to issue a publicly available report documenting the assessment findings and any proposed amendments.

We appreciate your consideration of these comments and stand ready to provide additional technical input or community perspectives as you finalize these critical safety regulations.

For more information or if you have any questions, we are happy to answer and can reach Ileana Navarro at ileana.navarro@ccejn.org.

Sincerely,

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