SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Josh Becker, Chair
2025 - 2026 Regular

Bill No:	SB 804	**Hearing Date:**	4/29/2025
Author:	Archuleta		
Version:	4/21/2025 Amended		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Sarah Smith		

SUBJECT: Hydrogen pipeline safety

DIGEST: This bill requires the California Public Utilities Commission (CPUC) to adopt hydrogen pipeline safety standards by January 1, 2028. This bill requires the CPUC to adopt requirements that meet or exceed specified requirements. This bill also requires the California Energy Commission (CEC) to enforce hydrogen pipeline safety standards for private hydrogen pipelines in the state.

ANALYSIS:

Existing law:

1) Authorizes the CPUC to supervise and regulate every public utility in the state and permits the CPUC to do anything that is necessary and convenient to exercise its power and jurisdiction. Existing law provides the CPUC with broad authority to regulate any utility's rules, practices, equipment, appliances, facilities, or service if the CPUC finds that those rules, practices, equipment, appliances, facilities, or services are unjust, unreasonable, unsafe, improper, inadequate, or insufficient after conducting a hearing. (Public Utilities Code §§701 and 761)

2) Requires each gas corporation to develop a plan for the safe and reliable operation of its CPUC-regulated gas pipeline facility. Existing law specifies components that must be included in these plans and requires the CPUC to review and accept, modify, or reject the plan for each gas corporation. Under existing law, gas corporations are required to implement gas pipeline safety plans approved by the CPUC. (Public Utilities Code §§961 and 963)

3) Requires the Office of the State Fire Marshal (OSFM) to adopt hazardous liquid pipeline safety regulations that comply with federal law regarding hazardous liquid pipeline safety. Establishes certain recordkeeping and reporting requirements for hazardous liquid pipeline operators. (Government Code §51010 et. seq.)

4) Establishes the California Geologic Energy Management Division (CalGEM) for the purposes of overseeing the drilling, operation, maintenance, and removal of oil and gas wells. Existing law specifies the duties of CalGEM regarding authorization of oil and gas exploration within California. Under existing law, CalGEM regulates pipelines and facilities near oil fields. (Public Resources Code §3000 et. seq.)

This bill:

1) Requires the CPUC to adopt hydrogen pipeline safety standards by January 1, 2028 that meet or exceed requirements specified in this bill. This bill requires the CPUC to consistently enforce these safety standards across the state and regularly review and update hydrogen pipeline safety standards, incorporating changing technology and best practices.

2) Requires the CPUC to direct all hydrogen pipelines to meet the all the following requirements:

   a) The pipeline must be designed and constructed to minimize hydrogen leakage to the lowest technically feasible level.
   b) All materials used in the construction of the pipeline must be codified by the American Society of Mechanical Engineers, or its equivalent, for compatibility with hydrogen resistance to degradation, such as corrosion or embrittlement.
   c) The pipeline shall employ continuous measurement and monitoring systems to detect any deviation from normal operational parameters.

3) Requires the CEC to enforce hydrogen pipeline safety standards for private, intrastate pipelines.

4) Requires pipeline operators to maintain accurate records of hydrogen concentration levels within the hydrogen pipeline and any measurable leakage of hydrogen.

5) Requires a hydrogen pipeline owner to annually submit a report to the CPUC on or before December 31 each year, detailing the operator's compliance with this bill's recordkeeping requirements.

Background

Certain pipelines have overlapping federal and state oversight. Pipelines transporting hazardous materials, including oil pipelines, have differing oversight at the federal and state level. At the federal level, the United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) establishes requirements for interstate pipelines. Certain minimum safety requirements adopted by PHMSA apply to both interstate and intrastate pipelines, and states can establish their own pipeline safety programs if they receive certification from PHMSA to operate that program. In California, PHMSA has granted OSFM exclusive safety regulatory and enforcement authority over hazardous liquid pipelines in the state. Several other state agencies play roles in regulating intrastate pipelines with the OSFM. CalGEM regulates oil and gas production pipelines and wells within or near an oil field, the State Lands Commission manages offshore oil production, and the CPUC regulates in-state utility facilities, including natural gas pipelines and any utility pipelines subject to CPUC's authority.

In California, multiple utilities are assessing the potential for blending some percentage of hydrogen into the existing ratepayer-funded natural gas system; however, no gas utility is currently injecting hydrogen into this system. Some gas utilities are seeking to establish pipeline infrastructure that is dedicated solely to transporting hydrogen. This bill defines a "hydrogen pipeline" as one that is constructed or retrofitted to transport hydrogen where hydrogen constitutes at least 50% of the total gas volume in the pipe. Given the potential impacts of blending more than 50% hydrogen into the existing natural gas system, it is not clear that the standards developed pursuant to this bill would apply to utility pipelines; however, it is not clear that this bill expressly applies only to dedicated hydrogen pipelines. Under existing law, pipelines that are not subject to utility regulation are already overseen by PHMSA or a combination of PHMSA and the OSFM. This bill also requires the CPUC to adopt safety standards in addition to those created by PHMSA and the OSFM, and it requires the CEC to enforce pipeline safety requirements for private hydrogen pipelines. It is not clear how adding the CPUC and the CEC as regulators of pipelines that meet this bill's definition will enhance safety requirements for these pipelines or increase the clarity of pipeline requirements. Additionally, the CEC does not regulate utility infrastructure, including enforcing safety standards for any existing utility pipelines.

Hydrogen pipelines require specific safety measures that reflect the nature of hydrogen as a molecule. As a molecule, hydrogen is relatively small, increasing the potential for leaks. Hydrogen increases the combustibility of leaks when those leaks ignite. Hydrogen can also embrittle certain pipeline materials, increasing the

potential for cracks and leaks. Hydrogen is also less energy intensive than methane on a volumetric basis. Collectively, these factors and other considerations make the establishment of safety rules for hydrogen pipelines challenging.

In 2018, the Legislature passed SB 1369 (Skinner, Chapter 567, Statutes of 2018), which defined green electrolytic hydrogen and required the CPUC, CEC and the California Air Resources Board (CARB) to consider potential uses of green electrolytic hydrogen. As part of its duties to implement SB 1369, the CPUC commissioned a study with researchers from the University of California at Riverside on the operational and safety concerns associated with injecting hydrogen into the existing natural gas pipeline system at various percentages of hydrogen blended with natural gas. The CPUC published this study in July 2022. Among its findings, the study concluded the following:

- Blending up to 5% hydrogen into the natural gas stream is generally safe.
- Blending above 5% hydrogen into natural gas pipelines results in a greater chance of pipeline leaks and embrittlement of steel pipes.
- Hydrogen blends above 5% could require modifications of appliances such as stoves and water heaters to avoid leaks and equipment malfunction.
- Hydrogen blends of more than 20% increases the likelihood that blends will permeate plastic pipes, increasing the risk of gas explosions outside the pipeline.
- Due to the lower energy content of hydrogen gas, more hydrogen-blended natural gas will be needed to deliver the same amount of energy to users compared to pure natural gas.

The study also indicated that additional research, including real-world demonstrations in utility infrastructure, is needed to ensure that hydrogen pipeline injection is safe for the conditions specific to California. This bill requires the CPUC to adopt safety standards for hydrogen pipelines; however, it is unclear that the real-world demonstrations recommended by the CPUC-UC Riverside have occurred. As a result, it is unclear that the CPUC would have the ability to adopt regulations for hydrogen pipelines that adequately address unique safety needs in California.

Need for amendments. As currently written, the scope of pipelines subject to the CPUC's jurisdiction under this bill is unclear. It is unclear if the percentage of hydrogen by volume in this bill constitutes a dedicated hydrogen pipeline that is not generally part of the larger natural gas system. Additionally, the CEC lacks the resources and authority necessary to enforce hydrogen pipeline safety standards adopted by other agencies. As a result, the author and the committee may wish to amend this bill to do the following:

- *Clarify that this bill applies only to dedicated hydrogen pipelines primarily intended to transport hydrogen.*
- *Specify that this bill impacts only those dedicated hydrogen pipelines constructed or retrofitted for the purposes of transporting hydrogen after the effective date of any standards adopted by the CPUC under this bill.*
- *Authorize the CPUC to set a percentage of hydrogen gas by volume, above a 50% hydrogen blend, that would identify which new or retrofitted hydrogen pipelines meet the bill's definition of a hydrogen pipeline.*
- *Delete the provision in subdivision (c) of section 979.2 in the bill regarding the CEC's enforcement of hydrogen pipeline safety standards for private hydrogen pipelines.*

This bill expands the CPUC's regulatory authority by requiring the CPUC to set safety standards for pipelines that are not clearly part of the existing utility natural gas system. Under existing law, these pipelines may already be regulated by PHMSA and OSFM. While these agencies may not yet have safety standards that are explicitly for hydrogen pipelines as defined in this bill, OSFM has generally operated as the PHMSA-certified regulator of hazardous material pipelines in the state. Establishing CPUC as an additional pipeline safety regulator may result in a lack of alignment regarding pipeline safety standards. *To the extent that this bill moves forward, the author and this committee may wish to consider shifting the duties assigned to the CPUC in this bill to the OSFM.*

Prior/Related Legislation

SB 767 (Richardson) of the current legislative year, requires certain petroleum pipeline operators to report specified information about pipeline flows to the CEC. The bill also requires the CPUC to report to the Legislature and Governor when pipeline flows drop below a certain level. The bill is currently pending in the Senate.

AB 2931 (Bloom, Chapter 536, Statutes of 2022) revised portions of the Elder California Pipeline Safety Act of 1981 by removing an exemption from the definition of a "pipeline." The bill also established new recordkeeping and reporting requirements for pipeline operators and the OSFM.

SB 1369 (Skinner, Chapter 567, Statutes of 2018) defined green electrolytic hydrogen, required the CPUC, CEC, and CARB to consider green electrolytic hydrogen an eligible form of energy storage, and required these agencies to consider other potential uses of green electrolytic hydrogen.

SB 705 (Leno, Chapter 522, Statutes of 2011), the Natural Gas Pipeline Safety Act of 2011, required natural gas utilities regulated by the CPUC to develop service and safety plans and specified certain safety measures that must be included in those plans.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: Yes

SUPPORT:

Pipeline Safety Trust

OPPOSITION:

None received

ARGUMENTS IN SUPPORT: According to the author:

> Without modern, dedicated oversight, California risks public safety, environmental harm, and a loss of public trust in hydrogen as a clean energy solution. SB 804 proposes that all new or significantly upgraded hydrogen pipelines be designed to prevent leaks and built with materials that meet national and international engineering standards. It also mandates real-time leak detection systems and annual reporting by operators, promoting both transparency and accountability.
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> Senate Bill 804 sends a strong message that California is serious about balancing innovation with safety. It offers a proactive, forward-thinking approach to managing the unique risks of hydrogen infrastructure while supporting continued investment in clean energy. This is smart policy that anticipates the future, addresses a regulatory blind spot, and protects the health and well-being of Californians.

-- END --