ATTACHMENT A

Consideration of Public Comments

Proposed adoption of:
Requirements For Carbon Dioxide Pipelines (19 CCR §§ 2170-2182)

The following reflects all comments received relating to the above identified rulemaking. A list is provided of the people or organizations making comments, both written and verbally. Each is assigned a two-digit identifier. The comment summaries and responses are organized by the subsection being addressed. At the end of each comment summary there are one or more comment keys. The comment keys match the two-digit identifier followed by a number referring to the marked copies of written comments and transcribed verbal comments received at the public hearings, which are included in the rulemaking record. Where possible, duplicate or similarly related comments and irrelevant comments are aggregated in separate tables at the end of each comment period.

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5 DAY COMMENTS	
PC01	Food and Water Watch, Various; letters dated June 18 through June 23, 2026.
PC02	Central California Environmental Justice Network, Ileana Navarro, Policy Associate; letter dated June 19, 2026.
PC03	Advanced Resources International, Inc., Madison Williams, Research Analyst; letter dated June 23, 2026.
PC04	San Francisco Baykeeper, Aundi Mevoli, Field Investigator and Staff Scientist; letter dated June 23, 2026.
PC05	Pipeline Safety Trust, Amanda McKay, State Policy Advisor; letter dated June 23, 2026.
PC06	1 Point Five, Jona Koka, Oxy, letter dated June 23, 2026.
PC07	California Resources Corporation, Jason Marshall, Vice President, Regulatory Affairs, letter dated June 23, 2026.
PC08	Calpine Corporation, Barbara McBride, Sr. Director Origination and Development, letter dated June 23, 2026.
PC09	California Carbon Solutions Coalition, Virgil Welch, Director, letter dated June 23, 2026.
PC10	Pacific Gas and Electric Company, Melanie Davidson, Director of Decarbonization Strategy, letter dated June 23, 2026.

Topic	Summary of Comments	Agency Responses
§ 2171 - Incorporated by Reference.	… § 2171 of these regulations also includes other industry standards, and it is vitally important that all of these standards are available to read for free, in their entirety, on a publicly accessible website. Current PHMSA regulations only require that copies of the standards incorporated by reference be available to the public free of charge. California regulations only specify that documents incorporated by reference be "available." PST has found that gaining access to these documents can be difficult. Regulations are meant to be transparent, and these industry standards must be easily accessible. This transparency promotes confidence and trust from the public that industries are being regulated in such a way that keeps communities safe. (PC05-01)	The documents incorporated by reference are available at our office as specified in the Notice. We agree that they should be readily available. However, they are copyrighted materials and cannot be disseminated without the author's approval.
§ 2173(a)(2) – Carbon Dioxide Pipeline Safety Program	Section 2173(a)(2) - Federal Floor: The final regulations clarify that where federal regulations are more stringent, federal regulations shall govern. (PC02-05)	Thank you for your comment on Section 2173(a)(2). The OSFM agrees that where federal regulations are more stringent than the Article, federal regulations shall govern.

§ 2173(b) - Carbon Dioxide Pipeline Safety Program.	Section 2173(b)(1) requires operators to prepare and implement a comprehensive procedures manual by January 1, 2027, which, depending on the final rule's effective date, may provide fewer than six months for compliance. The manual must address a broad range of requirements, including design, construction, integrity management, emergency planning, and stakeholder engagement. Coordinating these elements across multiple operational functions requires sufficient time. A compressed timeline could result in nominal compliance documents rather than procedures that are fully integrated into operations and protective of public safety. Recommendation: Revise the compliance deadline to provide operators 12 months to prepare and implement the required procedures manual. (PC06-01)	The OSFM does not agree with the commenters' recommendation to revise the compliance deadline for the written carbon dioxide pipeline safety program manual. There are currently no carbon dioxide pipelines in California that would be subject to this Article. Once carbon dioxide pipeline projects are initiated, those operators would have 6 months to develop a written carbon dioxide pipeline safety program manual. A written manual is critical prior to operation to ensure the safe design, construction, maintenance, and operations of a carbon dioxide pipeline.
§ 2173(c) – Pipeline Engagement Program	Pipeline Engagement Program: The final regulations specify that the Pipeline Engagement Program "must develop and implement an engagement program with external stakeholders for each pipeline under construction and throughout the life of those pipelines in accordance with API RP 1185". This will be critical to ensuring that communities are aware of the project and can provide input in every life stage of the project. (PC02-06)	Thank you for your comment on Section 2173(a)(2). The OSFM agrees that the Pipeline Engagement Program required under Section 2173(c)(1) is important to ensure that communities are aware of the project.

§ 2174(a) – Design Requirements	Section 2174 (a): By taking this stance, CA is putting itself at a competitive disadvantage to projects in other states and is taking a less environmentally positive position to not allow the re-use of proven infrastructure. This position ignores decades of operating hours that demonstrate a pipeline can be put into different service safely. PHMSA has a document, "Guidance for Pipeline Flow Reversals, Product Changes, and Conversion to Service" that outlines the steps and requirements to take when evaluating the re-use or change in service of a pipeline. (PC03-01) OSFM should revise the design requirements in the proposed emergency regulations to afford appropriate flexibility in construction material type and authorize transportation of carbon dioxide in pipelines other than steel in alignment with the PHMSA draft rule. (PC-09-03)	(PC03-01) Conversion to service is a statutorily required term and is not allowed in California. Government Code, Section 51011.5(e) prohibits carbon dioxide pipelines from being constructed of previously used pipe or components. All carbon dioxide pipelines in California must be constructed of new materials. (PC09-03) Please see our response to § 2178 below.
§ 2174.2 - Material toughness.	According § 2174.2, operators may use "alternative measures" if it is not "physically possible to achieve the pipeline toughness [properties] of section 2174.1 and paragraph (a)…" It is PST's position that the use of any "alternative measures" related to design, construction, maintenance, or operation should be submitted for approval by OSFM. Any requests for approval of alternative measures should	Government Code, Section 51011.5 requires the State Fire Marshal to adopt regulations governing the safe transportation of carbon dioxide in pipelines that are, at a minimum, as protective as the draft federal regulations set forth in the unofficial version of the Notice of Proposed Rulemaking issued by the federal Pipeline and Hazardous Materials Safety Administration (PHMSA), pursuant to rulemaking (RIN 2137-AF60). The PHMSA draft regulations included a provision to allow for the use of alternative measures to achieve the desired pipeline toughness properties (see page 320 of the RIN 2137-AF60). Therefore,

	also be publicly noticed and open for public comment for at least 30 days before a final decision by OSFM. At the federal level, this process is required, and the requests are called Special Permits. The public has a right to be informed about which standards operators are being held to, especially if those standards differ from the regulations. By requiring public notice and comment on these requests, OSFM would be mirroring the federal special permit process and ensuring accountability and public transparency. (PC05-02)	the OSFM incorporated alternative measures in the regulations. However, we appreciate your comments and will consider this information in potential future rulemakings.
§ 2174.3(b)(3)(C) – Valves	Section 2174.3(b)(3)(C) - Vapor Dispersion Analysis in EFRD: The final regulations explicitly require that vapor dispersion analysis be used when conducting the EFRD study. Requiring this modeling to inform valve placement near sensitive receptors is an important improvement. (PC02-02) Vapor Dispersion Analysis in EFRD: The final regulations should explicitly require that the vapor dispersion analysis in Section 2174.3(b)(3)(C) -be made publicly available under a centralized public portal. (PC02-13)	(PC2-02) Thank you for your comment on Section 2174.3(b)(3)(C). The OSFM agrees that requiring a vapor dispersion analysis completed in accordance with section 2177.2 to be used when conducting the EFRD study is beneficial. (PC02-13) This information is not mandated for disclosure in the Statute. However, we appreciate your comments and will consider this information in potential future rulemakings.
§ 2174.4 – Leak Detection	Section 2174.4 - Leak Detection: The final regulations specify that leak detection systems must include a computational pipeline	(PC02-01) Thank you for your comment on Section 2174.4. The OSFM agrees that requiring a CPM leak detection system and a continuous externally based leak detection

	monitoring (CPM) system alongside a continuous externally based sensor system, providing a stronger minimum standard. (PC02-04) As drafted, Section 2174.4(a) appears to require both a computational pipeline monitoring (CPM) system and a continuous externally based leak detection system on every CO_2 pipeline. While 1PointFive supports robust leak detection, requiring both systems in all cases is redundant and may not align with the actual risk profile of every pipeline segment. Different technologies have different strengths depending on operating conditions, terrain, and pipeline configuration, and requiring both in all instances does not necessarily result in better detection than a single well-designed, validated system. Recommendation: Revise section 2174.4(a) to allow compliance through subsection (1), (2), or (3), and redesignating current subsection (b) accordingly. This would preserve the safety objective while allowing appropriate technological flexibility and engineering judgment. (PC06-02)	system provides a strong minimum standard for carbon dioxide pipelines. (PC06-02) The OSFM disagrees with the commenters assertion that having two leak detection systems may not align with the actual risk profile of pipeline segments. The OSFM consulted with industry standards and experts and found that many recommend complementary leak detection systems (LDS). An internal LDS, such as a CPM, may not be appropriate on a shut-in pipeline when another LDS may be more reliable, such as a continuous externally based LDS. Additionally, the OSFM requires CO2 pipelines to have a continuous externally based LDS that uses sensors to directly detect the presence of carbon dioxide or physical changes in environment due to a leak in addition to a Computational Pipeline Monitoring (CPM) LDS because industry workgroup members indicated that fiber optics LDS may be more reliable than CPM. Finally, the OSFM expects that any leak detection system installed on a carbon dioxide pipeline is well-designed and validated. However, we appreciate your comments and will consider this information in potential future rulemakings.

§ 2175.2 - Protection from hazards.	Section 2175.2 currently uses mandatory “must” language to require operators to perform geotechnical analysis and take practicable steps to protect pipelines from geohazards. The use of “must” creates an absolute obligation that may not be appropriate given that site-specific conditions, terrain variability, and engineering judgment are inherently involved in identifying and mitigating geologic risks. The Pipeline and Hazardous Materials Safety Administration (PHMSA) has addressed comparable geohazard concerns using performance-based language that allows operators to apply appropriate engineering methods rather than mandating a prescribed approach in every circumstance. Recommendation: Revise “must” to “should” to align with the federal framework and preserve appropriate engineering discretion. (PC06-03)	This requirement was responding to a finding from the Denbury Gulf Coast Pipelines, LLC carbon dioxide failure investigation report. The results of the geotechnical analysis performed as part of this investigation concluded that the soil movement found on the Delhi Pipeline Right-of-Way could induce axial stresses sufficient to cause an overload condition in the pipeline near the incident location. PHMSA’s draft regulations also required enhanced inspections and measures to address geologic hazards and reduced depth of cover issues (see page 141 of the RIN 2137-AF60 and generally throughout the document). Therefore, the OSFM adopted regulations to provide standards for geohazards consistent with the PHMSA draft regulations. The Legislature also provided for further regulatory action on issues such as land movement as identified by Statute (see section 51011.5(a)(2)(G))
§ 2175.3(a) - Proximity to sensitive receptors.	Enforceable Siting Standards: Section 2175.3(a) retains “as far as practicable” without a requirement to demonstrate that alternative routes were evaluated. This standard doesn’t provide an enforceable basis to reject a pipeline route near homes, schools, or healthcare facilities and must be replaced with specific, enforceable requirements. (PC02-07)	The OSFM is not a permitting agency or lead agency under the California Environmental Quality Act. The issue of pipeline routing approvals is not under the purview of OSFM and is up to the lead agency and project proponent to determine. The OSFM drafted the regulations in Section 2175.3(a) to address the requirements in Government Code, Section 51011.6: An operator shall not be permitted to construct a pipeline to transport carbon dioxide in a location where one or more sensitive receptors are located within the emergency planning

	In section 2175.3(a) referring to enforceable sitting standards, the OSFM fails to demonstrate applicable criteria to determine what a safe distance is from sensitive receptors such as, homes, schools, and hospitals. The current language is stated as “as far as practicable” leaving no enforceable standard and no alternative routes that might mitigate the proximity to sensitive receptors. It is prudent to have an enforceable standard to reduce the ambiguity on project design. Leaving protection of sensitive locations to what is “practicable” risks siting pipelines in locations that pose significant risks because project proponents determine that safer locations are not practical or feasible. We request this be amended to contain an enforceable and sufficiently protective distance from sensitive receptors. (PC04-01)	zone unless an analysis based on validated, engineering-based computational fluid dynamics model that assesses the potential for one or more sensitive receptors to be harmed by exposure to carbon dioxide from a pipeline rupture and determines that the risk of exposure to carbon dioxide is within an acceptable range as determined by the lead agency, as defined in Section 21067 of the Public Resources Code. Section 2175.3(b)(1) requires pipeline operators to perform a vapor dispersion analysis to assess the impact of sensitive receptors. The lead agency is responsible for determining that the risk of exposure to carbon dioxide is within an acceptable range.
§ 2175.3(b) - Proximity to sensitive receptors.	Higher Design Standards Near Sensitive Receptors: There are no enhanced physical design requirements, other than maximum EFRD distances, that apply to pipeline segments near sensitive receptors. Where communities cannot be avoided, operators must be required to use thicker-walled pipes. (PC02-09)	The OSFM has required all pipeline segments to be designed to meet material toughness properties for initiation, propagation and arrest of fractures. Section 2174.1 requires pipelines to be designed to mitigate the effects of fracture propagation and to arrest cracks at a specific distance. Additionally, Section 2174.2(a)(3) allows operators to accomplish this requirement through thicker walled pipe.

§ 2175.4 - Cover over buried pipeline.	Section 2175.4 requires a minimum of 48 inches of cover for all buried CO_2 pipeline segments without exception. This requirement is more stringent than the federal baseline under 49 CFR Part 195, which establishes graduated cover requirements and recognizes situations where equivalent protection may be achieved through alternative means. A uniform 48-inch requirement does not account for differences in terrain, road and water crossings, rocky substrates, and other installation conditions that routinely affect cover depth engineering decisions. Recommendation: Revise Section 2175.4 to recognize the exceptions and alternative compliance mechanisms permitted under 49 CFR 195.248, or to allow operators to demonstrate equivalent protection through engineering analysis where the 48-inch minimum is impractical. (PC06-04)	This requirement is more stringent than required under 49 CFR Part 195.248. It was drafted to address issues observed in California and across the United States as it relates to pipeline strikes and damage from third parties, among other causes of pipeline damage. This section specifically speaks to the differences the commenter raised related to cover at ground level, road bed, river bottom, and underwater natural bottom. Additionally, conversations with industry revealed that planned projects already intend to bury pipelines with at least 48 inches of cover. We agree that a 48-inch requirement may not be sufficient in all scenarios. It is possible that additional cover may be necessary to ensure pipeline safety. Our office will consider your comments on impractical cover in potential future rulemakings.
§ 2176.1(b) – Pressure testing requirements	OSFM should revise the pressure testing requirements in the proposed emergency regulations to include inert gas as an acceptable test medium. (PC09-04)	Carbon dioxide pipelines used in sequestration projects will operate in very high pressures. And though water and carbon dioxide when mixed together can develop carbonic acid that impacts the integrity of a steel pipe water was still required for pressure testing. This medium was chosen over inert gas because inert gas is more compressible than water and consequently stores a significant amount of energy during the test. This essentially means that if a pipeline undergoing a pressure test with an inert gas failed, the resulting failure would be uniquely catastrophic compared to water. The stored energy in the compressed

		inert gas is many times more than that of water. The pipe failure would incur a massive explosion that could extend unknown distances down the length of the pipe similar to bomb. The material and shockwave from the explosion would be multiple times worse than a failure with water and places sensitive receptors at unnecessary risk. Proper dewatering of a pipeline will be necessary to ensure no adverse effects, such as corrosion, following testing, in accordance with § 2176.1(c).
§ 2177.2 - Vapor dispersion analysis.	Section 2177.2 requires operators to conduct a detailed vapor dispersion analysis, while Section 2170(a)(4) defines the emergency planning zone as a fixed two-mile radius from the pipeline centerline. Since the emergency planning zone is fixed by definition and cannot be modified by modeling results, the rule should clearly explain what additional regulatory function the vapor dispersion analysis is intended to serve. As currently drafted, it is unclear whether the dispersion analysis can affect the size of the planning zone, inform additional valve or emergency flow restriction device (EFRD) placement, modify training obligations, or serve some other compliance function. Without clarity on this point, operators face the risk of conducting duplicative analyses without a clear basis for determining what compliance actions, if any, might result from the modeling. Recommendation: Clarify the regulatory purpose and compliance function of the	Section 2175.3(b)(1) requires pipeline operators to perform a vapor dispersion analysis in accordance with Section 2177 to assess the impact of sensitive receptors. After reviewing the vapor dispersion analysis, the lead agency under the California Environmental Quality Act is responsible for determining that the risk of exposure to carbon dioxide is within an acceptable range consistent with Government Code section 51011.6.

	vapor dispersion analysis in relation to the fixed two-mile emergency planning zone. (PC06-05)	
§ 2177.3(a) - Emergency training.	Section 2177.3(a) requires operators to “provide” annual training to State and local emergency services, disaster agencies, hospitals, residents, local businesses, and other utilities within the Emergency Planning Zone. However, this obligation as written, requiring operators to “provide” training to residents, businesses, and hospitals, not just emergency responders, raises significant practical and legal questions. Pipeline operators cannot compel residents or private businesses to receive or participate in training. Moreover, combining first responder training with general public outreach conflates two distinct functions that are more effectively addressed through separate programs. Recommendation: Revise the training obligation so that operators are required to offer and make available training to responders and interested parties, rather than being required to ensure participation by all listed groups. (PC06-06)	We agree that the OSFM cannot compel residents or private businesses to receive or participate in training. This section is drafted to direct operators to take the necessary steps and afford those entities listed the opportunity to participate in the provided trainings. Section 2177.3(a) is broken up into separate sentences. The first sentence focuses on trainings required to State and local emergency responders and must take place prior to commencing operations. The second sentence is broader and allows for participation by various interested parties including residents and local business. The second sentence focuses on allowing those parties to engage in a training that may involve emergency responders, but it is not necessarily required to combine both emergency and non-emergency personnel. Section 2177.3(b) requires trainings to be recorded and post the most recent recording to the OSFM and operator’s website so that parties that cannot or choose not to participate in person may review the emergency training material at their leisure.

§ 2177.3(b) - Emergency training.	Section 2177.3(b) requires that each training be recorded and that the most recent training be posted publicly on the operator's website and OSFM's website. While 1PointFive supports transparency in training efforts, the requirement to post training recordings publicly may undermine effective training design. Responders from different jurisdictions have different capabilities, equipment, command structures, and geographic challenges. Effective training must be tailored to local conditions, and requiring a single recorded training to be posted as if it applies uniformly to all personnel in the emergency planning zone may create confusion about which protocols apply in which locations. Recommendation: Revise the posting and distribution requirements to allow location-specific adaptation of emergency training content rather than implying a uniform training package applicable to all responders in all areas. (PC06-07)	Section 2177.3 is drafted to require operators provide trainings to state and local agencies. Th terms "local" should be emphasized here because, as the commenter noted, trainings are not universal and should apply to the specific pipeline. Operators should tailor their trainings to local emergency response organizations based on those unique characteristics encountered along a pipeline route. This is why section 2177.3(c) requires operators to provide local emergency response organizations with, and train them on the proper use of, any equipment, tools and material necessary for use in the event of an emergency. This allows for the location specific adaptation of emergency training content as recommended in the comment.

§ 2177.3(c) – Emergency Training	Section 2177.3(c) - Emergency Equipment for First Responders: The final regulations now require operators to provide local emergency response organizations with equipment, instruments, tools, and materials necessary for CO2 pipeline emergencies. The inclusion of these requirements brings California into alignment with the federal baseline SB 614 mandates. (PC02-01)	(PC02-01) Correct and thank you for noting the consistency.
§ 2177.4(a) – Emergency Preparedness Materials	Emergency Preparedness: Section 2177.4 states that emergency preparedness materials should be distributed to sensitive receptors. We support this section and recommend that these materials are provided in multiple languages. (PC02-08) Section 2177.4(a) requires operators to collect extensive personal and demographic information for all affected entities within the emergency planning zone, including names, ages, languages, phone numbers, evacuation access information, and special assistance needs. While 1PointFive supports effective emergency notification and evacuation planning, this requirement is overly broad and would impose substantial ongoing data collection and maintenance obligations on operators. Recommendation: Narrow the population survey and data collection requirements to	The OSFM received comments in support of this language and agrees that emergency preparedness materials are best developed and communicated to sensitive receptors effectively by understanding the demographic they are communicating with. The OSFM believes that this section is narrowly tailored to collect the necessary data needed to effectively communicate and develop emergency preparedness materials. The required data, includes names, ages, languages, phone numbers, evacuation access information, and special assistance needs. This list of data is relevant for direct contact in the most effective manner. For example, age is relevant for format of communication. Younger populations communicate more readily through cell phones and texting that may not be available to older populations relying on landlines. Language is significantly important because material presented in an unfamiliar language is completely unhelpful. Phone numbers are by far the easiest way to notify someone of an emergency, as opposed to going door to door to notify sensitive receptors. Physical notification is particularly dangerous in the event of a CO2 leak where internal combustion engines may not work. Evacuation access information is equally as important in the event sensitive receptors cannot shelter in place.

	information that is reasonably necessary for emergency communications and planning, and allow coordination with local emergency management agencies where appropriate. (PC06-08) It appears that pipeline operators may be required to collect and store sensitive data about building occupants on an ongoing basis, and it is unclear how that data would be protected and then disseminated effectively and securely during an emergency by a commercial pipeline operator. (PC10-02)	Understanding the mobility limitations of sensitive receptors is necessary to understand how an evacuation can be carried out knowing the particular needs of those most in danger (for example those with disabilities, in hospitals, or assisted living communities). Additionally, Government Code, Section 51011.5 requires the State Fire Marshal to adopt regulations governing the safe transportation of carbon dioxide in pipelines that are, at a minimum, as protective as the draft federal regulations set forth in the unofficial version of the Notice of Proposed Rulemaking issued by the federal PHMSA, pursuant to rulemaking (RIN 2137-AF60). The PHMSA draft regulations included a provision to collect this data for a required population density survey. (see page 323 of the RIN 2137-AF60). Operators are expected to secure data that is deemed sensitive in accordance with their business practices and applicable state and federal privacy laws.
§ 2177.4(a)(3) – Emergency Preparedness Materials	Mandatory Distribution of CO2 Monitors and Air Supply Respirators: Section 2177.4(a)(3) recommends residents obtain CO2 monitors and air supply respirators but does not require operators to provide them. Residents within the emergency planning zones should not bear the cost of safety equipment. Operators should be required to distribute these devices free of charge to all sensitive receptors before operations begin. (PC02-11) Section 2177.4(a)(3), states residents should obtain CO2 monitors and air supply respirators if they reside in the emergency planning zone. The onus should not be placed on residents to bear the cost and	The OSFM recognizes the importance of informing sensitive receptors about the risks associated with living in an emergency planning zone. However, it does not appear that the authorizing statutes gave the OSFM authority to issue a directive to operators that they provide CO2 monitors and respirators. In contrast OSFM received comments that indicated that the text should remove language related to recommendations for CO2 monitors and respirators. Our office finds that the existing language strikes a balance between requiring operators to provide respirators and CO2 monitors and eliminating the language entirely. Lastly, it is possible that local lead agencies involved in the planning, siting, and routing behind a potential pipeline may require the operator to provide CO2 monitors and respiration devices. It is possible that such a condition could be required during the CEQA

	obtain this personal protective equipment but rather the responsibility should be placed on the operators. We request that this be written into the rulemaking so additional undue burden is not placed on frontline communities. (PC04-02) Section 2177.4(a)(3) would require operators to include recommendations regarding CO_2 monitors and air supply respirators in public emergency preparedness materials. 1PointFive respectfully recommends that OSFM delete this requirement, as guidance concerning respiratory protection and monitoring equipment raises important safety, medical, training, maintenance, and liability considerations when directed to the general public. Such guidance is more appropriately developed and communicated by public safety, public health, or emergency management agencies with the relevant authority and expertise. Recommendation: Delete the requirement that emergency preparedness materials include recommendations for CO_2 monitors and air supply respirators. (PC06-09) …it appears pipeline operators would be responsible for identifying potential evacuation routes and providing recommendations on CO2 monitors and respirators. These are issues that would be	permitting process. However, that possibility is outside the scope of OSFM authority.

	better handled by experts in emergency preparedness and management rather than commercial pipeline operators. (PC10-03)	
§ 2178 - Operations and Maintenance.	Restriction of CO2 transport to only dense phase, 90% CO2 streams, …OSFM could include flexibility for a pipeline operator to use composite materials in CO2 pipeline construction and alleviate the concern about corrosion. … OSFM could allow gaseous phase CO2 transport and require such leak detection methods for gaseous phase CO2 pipelines. Suggested alternative to 90%, dense phase requirement: § 2178. Operations and Maintenance. (a) No operator may operate or maintain its carbon dioxide pipeline systems at a level of safety lower than that required by this Article and the procedures it is required to establish under Section 2173. (b) No operator may operate any part of a carbon dioxide pipeline unless (1) It was designed and constructed by this article, and (2) The carbon dioxide transported is a fluid consisting of more than 90 percent carbon dioxide molecules <u>if the carbon dioxide transported is compressed to a dense phase</u>. (PC07-01)	OSFM proposes to require operators transport CO2 as a fluid consisting of more than 90 percent carbon dioxide molecules compressed to a dense phase because: a. This is consistent with existing PHMSA regulations and regulatory experience, b. Transporting CO2 in a single phase is easier to predict flow, pressure drops and to determine of the critical point of the product stream. c. Carbon dioxide vapor clouds containing other stream constituents may entail public safety and environmental risks. d. CO2 can be transported more efficiently as a dense vapor using smaller diameter pipelines. e. Dense phase is often used in CCS projects where temperatures are naturally high. Companies planning to sequestration carbon in California were invited and participated in the carbon dioxide pipeline regulation workgroup to assist in developing these regulations, including California Resources Corporation. During the workgroup meetings, it was expressed that existing projects in California intended to transport carbon dioxide in a dense phase. This is likely because of efficiencies and known factors related to transport in dense phase. Operators have conveyed that existing plans are for pipelines to transport in a dense phase and that systems can produce up to 97 percent carbon dioxide purity. Operators have also conveyed that they do not wish to compromise their pipeline integrity or fill up valuable pore space at sequestration sites with material other than carbon dioxide as that is their primary economic and safety driver.

	OSFM's rule effectively prohibits the pipeline transport of gaseous phase carbon dioxide when the gas being transported by pipeline is more than 50% -- but less than 90% -- carbon dioxide. OSFM justifies this by noting that other gases in a gaseous phase pipeline might be corrosive. OSFM also argues that leaks are easier to detect when the gas transported is in dense phase. Corrosivity concerns can be addressed with use of non-corrosive, non-metallic pipeline construction and leak detection for gaseous phase emissions can be deployed Neither of these mitigation factors appear to have been considered as they could be in a more robust rulemaking, as envisioned by SB 614. (PC09-05)	More operational knowledge and research is needed for operating carbon dioxide pipelines in a gas phase at 50 percent carbon dioxide. Specifically, the deleterious effects that unknown constituents in the carbon dioxide gas stream may have on the pipe or pipeline material used would need to be studied before OSFM would consider any potential amendments to the operating limits established in this Article.
§ 2178.7 - Depth-of-cover survey.	Ambiguity in depth of cover survey requirement. (PC07-02)	A depth-of-cover survey must be able to determine the condition of the pipe location and the cover that complies with section 2175.4 of this Article. The OSFM considered a prescriptive method for depth of cover surveys. It was decided that a single method or process may not be appropriate for every pipeline, pipeline right-of-way, or terrain. Each operator must determine the methodology best suited for their pipeline right-of-way and incorporate a written procedure for this process in their Carbon Dioxide Pipeline Safety Program.
§ 2179	Section 2179 (2)(A): Setting a 50 ppmv limit is not supported by operating pipeline data or corrosion reports that involve higher purity CO2 sources that	Government Code, Section 51011.5 requires the State Fire Marshal to adopt regulations governing the safe transportation of carbon dioxide in pipelines that are, at a minimum, as protective as the draft federal regulations set

	are not from post-combustion CO2 capture. Placing this low limit on all projects ignores the fact that CO2 sources do not have the same impurities and disproportionately penalizes projects that involve higher quality sources. The range of CO2 pipeline water specification is 150 ppmv to 600 ppmv for current pipelines in service. The water specification of a pipeline should be correlated to the quality of the CO2 in the pipe, not an arbitrary value based on a theoretical composition with contaminants that may not apply to the project. (PC03-02)	forth in the unofficial version of the Notice of Proposed Rulemaking issued by the federal Pipeline and Hazardous Materials Safety Administration (PHMSA), pursuant to rulemaking (RIN 2137-AF60). The PHMSA draft regulations included a provision prohibiting free water and otherwise limiting water to 50 ppm by volume of total product in any phase. (see page 341 of the RIN 2137-AF60). However, we appreciate your comments and will consider this information in potential future rulemakings.
	Section 2179 addresses internal corrosion control and monitoring. To the extent the regulations also impose or reference cathodic protection standards, 1PointFive recommends OSFM expressly recognize the 100 mV polarization shift as an alternative compliance criterion. The -850 mV instant-off criterion is not achievable in all pipeline configurations due to soil resistivity, current distribution, and other system-specific conditions. NACE SP0169 and 49 CFR 195.571 both recognize the 100 mV shift as a technically sound and accepted alternative, and California's regulations should not be more restrictive than the federal baseline without documented technical justification.	(PC06-10) Thank you for your comment on the proposed provision for cathodic protection requirements. The OSFM considered this in previous revisions of the regulations and agrees that requiring all pipelines to meet -850mV instant-off may present unforeseen consequences such as potential coating disbondment. Therefore, in the final version of the regulations, OSFM removed this provision.

	Recommendation: Revise the cathodic protection standard to allow compliance through the 100 mV polarization shift method recognized under NACE SP0169 and 49 CFR 195.571, as an alternative to the -850 mV instant-off criterion. (PC06-10)	
§ 2180.2 – Notification of Rupture or Potential Rupture.	Section 2180.2 - Rupture Notification: The final regulations require operators to immediately trigger the automatic notification system within the emergency planning zone upon any rupture or potential rupture, integrating community notification directly into the rupture reporting requirement. (PC02-03)	Thank you for your comment. It appears you are referring to Section 2177.5(a)(3), which requires pipeline operators, after identifying an emergency on the pipeline, to initiate an automatic notification system that will contact sensitive receptors within the emergency.
General - 1	Require clear setback distances from homes, schools, hospitals, and other sensitive locations. (PC01-01)	The OSFM is not a permitting agency or lead agency under the California Environmental Quality Act. The issue of pipeline routing approvals is not under the purview of OSFM and is up to the lead agency and project proponent to determine. The OSFM drafted the regulations in Section 2175.3(a) to address the requirements in Government Code, Section 51011.6: “An operator shall not be permitted to construct a pipeline to transport carbon dioxide in a location where one or more sensitive receptors are located within the emergency planning zone unless an analysis based on validated, engineering-based computational fluid dynamics modeling that assesses the potential for one or more sensitive receptors to be harmed by exposure to carbon dioxide from a pipeline rupture determines that the risk of exposure to carbon dioxide is within an acceptable range as determined by the lead agency, as defined in Section 21067 of the Public Resources Code.”

		Section 2175.3(b)(1) requires pipeline operators to perform a vapor dispersion analysis to assess the impact of sensitive receptors. The lead agency is responsible for determining that the risk of exposure to carbon dioxide is within an acceptable range.
General - 2	Require operators to provide CO2 monitors and emergency breathing equipment to residents within pipeline emergency zones, at no cost. (PC01-02)	Please see our responses to § 2177.4 above.
General - 3	Improve public notification, transparency, and community participation before permits are approved and create a centralized public portal for real-time monitoring of projects. (PC01-03)	These regulations have a requirement for pipeline operators to develop and implement an engagement program with external stakeholders for each pipeline under construction and throughout the life of those pipelines (see section 2173(c)). The OSFM is not considered a lead agency or permitting agency for California Environmental Quality Act (CEQA) projects. In addition, under CEQA, local lead agencies are required to take certain actions prior to permitting a project which may include the items you listed such as notifications, centralized public portal, and community participation.
General - 4	Require operators to train local emergency responders for CO2 pipeline incidents. (PC01-04)	Please see our responses to § 2177.3 above.
General - 5	Strengthen pipeline design standards near waterways and populated areas. (PC01-05)	§ 2175.3 requires operators of pipelines within an emergency planning zone to conduct a vapor dispersion analysis, provide training and equipment to emergency services and disaster agencies, distribute emergency preparedness materials, and install rupture mitigation valves. Thank you for drawing attention to waterways as a potential concern. We may consider this during any potential future amendments to this Article.

General - 6	Protect parks, tribal lands, wilderness areas, and other sensitive ecosystems from pipeline development. (PC01-06)	Thank you for your comment. However, pipeline development, land use planning, routing, and siting of future pipelines falls outside of the scope of OSFM authority and is best left to local lead agencies as identified in CEQA and specifically noted in Government Code section 51011.6.
General - 7	Ensure California's regulations go beyond withdrawn federal standards and prioritize public safety. (PC01-07)	Our office agrees that it is important to set more stringent standards than the withdrawn federal regulations, where appropriate. In fact the OSFM has done so in several sections, including but not limited to: - Adopted industry standards related to landslide hazards and pipeline public engagement to require operators to monitor and mitigate geohazards around their pipeline and to require operators to develop and implement an engagement program with external stakeholders for each pipeline under construction and throughout the life of those pipelines - Require Emergency Flow Restriction Devices (EFRD) findings to be implemented within 6 months, not to exceed 6 months after permits are received. - Require CO2 pipelines to have a continuous externally based LDS that uses sensors to directly detect the presence of carbon dioxide or physical changes in environment due to a leak. This is in addition to the PHMSA proposed Computational Pipeline Monitoring (CPM) LDS because industry workgroup members indicated that fiber optics LDS may be more reliable than CPM. - Requiring pipelines to have at least 48 inches of cover regardless of location for additional protection against excavation damage and explosive decompression in the event of a dense phase carbon dioxide pipeline failure.

		- Require a spike hydrostatic pressure test, if an operator uses hydrostatic testing as an integrity assessment method. Spike hydrostatic pressure tests are a useful tool to detect cracks or crack-like defects in lieu of using an appropriate in-line inspection device. - Require operators have procedures for inspecting the affected areas prior to repopulation for the presence of carbon dioxide or other hazardous conditions that may impact the health of sensitive receptors as a result of the release of carbon dioxide AND provide recommendations for carbon dioxide monitors and air supply respirators in their emergency preparedness materials. - Require pipelines to remain non-operational until an investigation is completed that determines the origin and cause of the failure. The OSFM, in consultation with appropriate State, Federal, and local agencies, shall determine if or when a pipeline may resume operations.
General - 8	Build robust safety analysis, public disclosure, and community participation requirements directly into the CO2 pipeline permitting framework to protect against potential significant weakening of CEQA as it relates to CO2 pipelines. (PC01-08)	The OSFM believes that the requirements for vapor dispersion modeling, and emergency preparedness, among other requirements, will improve awareness and provide important information to local lead agencies as the decision-making bodies under CEQA. Importantly, OSFM is limited by statute from being a lead agency or permitting agency as it relates to CEQA (see 51011.6)
General - 9	Odorant Requirements: The final regulations do not contain an odorant or colorant requirement and don't include a review process for revisiting this decision. (PC02-10) OSFM's current language does not require odorants to be added to CO2 pipelines.	The California Government Code requires OSFM to consider the use of odorants. However, the OSFM found that further research into carbon dioxide odorant is needed. It is unknown how additional components within odorants will impact the design or materials used in a carbon dioxide pipeline or associated appurtenances. The negative impacts from adding odorants could

	Carbon dioxide is a colorless and odorless gas; therefore, late detection is inevitable without a required odorant. This has been the standard for natural gas pipelines, also a colorless and odorless gas, so the public can be aware of a leak before the gas build-up creates a devastating explosion. This early detection is imperative for the safety of communities. It allows for potential time to evacuate areas that are compromised especially if combustion engines are rendered useless. We request the draft be edited to make odorants mandatory. (PC04-04) Odorizing the substances within pipelines allows members of the public to detect a release by smell. Often, odorant can be the first warning sign that the public should take action to protect themselves and others. The California Government Code requires OSFM to consider the use of odorants and require them if determined safe, feasible, and effective. The proposed rule does not require operators to use an odorant. PST understands that research into carbon dioxide odorant is ongoing, and therefore, it is imperative that OSFM/PSAC review relevant odorant information annually to determine if an odorization requirement is feasible. If, after annual review, no conclusive odorant is available,	be worse than the benefits derived from the inclusion of odorizing agents. Therefore, we will consider odorant standards and requirements in potential future regulation activities.

	OSFM/PSAC must document the research, analysis, and its decision not to require an odorant, and make those documents publicly available. OSFM owes it to the public to be detailed, proactive, and transparent in making such an important determination. (PC05-04)	
General - 10	Centralized Public Portal and Real-Time Monitoring: The final regulations don't require a centralized public information portal or real-time monitoring dashboard. OSFM should require operators to publish real-time pipeline monitoring data publicly, and establish a centralized state portal for pipeline locations, emergency planning zone maps, inspection records, and incident reports. (PC02-12)	The commenter is correct that the final regulations do not require a public information sharing portal. This was not a requirement in the statutory authority directing the OSFM to adopt regulations. Our office will take this comment in consideration for potential future rulemakings. It should be noted that many of the items listed present security concerns in relation to bad actors and publicly publishing the requested information. For example, pipeline location, planning zone maps, inspection records, and incident reports may contain GPS or other location identifying information that could be used to sabotage or cause harm through intentionally damaging a CO2 pipeline. Essentially providing a road map for someone to cause mass devastation. Sensitive receptors within emergency planning zones should already be made aware of the information needed to respond to a pipeline emergency through the following sections of the regulations (not limited to these sections): 2177, 2177.1, 2177.3, 2177.4, and 2177.5.
General – 11	Risk Assessment Requirement: There is still no requirement that operators conduct a risk analysis assessment or to outline what should be included in one. Since the FEMA risk assessment map (Figure 5) reflects that most California counties are in a moderate to high risk category, it is	A risk analysis is required pursuant to section 2174.3 and includes a list of factors that operators must consider when one or more sensitive receptors are located within the emergency planning zone. This analysis should could conducted by operators prior to building a pipeline as it will inform the location, number, and type of valves to be installed on a

	imperative that these assessments take place prior to the build out of a pipeline. (PC02-14) Language in this draft fails to provide a risk assessment requirement for the build out of pipelines. FEMA's risk assessment map suggests most of California counties are in a moderate to high level risk category for natural hazards and social vulnerability. Therefore, it is vital that these risks are documented and thoroughly evaluated before the construction of pipelines. In 2025, California ranks third among states for the most seismic activity. This alone can have catastrophic impacts on pipeline integrity, and this is only one of the many hazards the state contends with. We request that risk assessment requirements be added prior to build out of pipelines. (PC04-03) Risk assessments are federally required to be included in an operator's Integrity Management Plan (IMP). However, these risk assessments are required only once the pipeline is operational. PST requests that prior to construction, operators be required to perform and submit to OSFM for approval a pre-construction risk assessment and analysis, in addition to any other information required as part of an application to a lead agency. At a minimum, this risk analysis should include the	pipeline to provide for protection of human health and the environment. (PC02-14) Pipeline operators are also required to conduct a geotechnical analysis pursuant to section 2175.2. The regulatory language requires operators to take steps to protect pipelines from ground movement, seismic activity makes the ground move and would be included in this analysis. Section 2175.2 is included in the sections related to construction. Therefore, an operator should consider geotechnical issues prior to construction to protect pipelines from geohazard prone issues when planning the pipeline. See 2175.2 (a) (PC04-03) Thank you for your comments regarding operators submitting preconstruction risk assessment and analysis. As well as, requiring operators to provide any other information to OSFM that is required by a lead agency pursuant to CEQA. Our office will consider these suggestions in potential future rulemakings. It should be noted that the vapor dispersion analysis would include the pipeline design specifications including diameter, thickness, and shut-off valve locations. Which is completed prior to construction if it is within an emergency planning zone and a release could impact sensitive receptors. That information though valuable to OSFM is also valuable to the lead agency when they are conducting their evaluation to determine that the risk of exposure to carbon dioxide is within an acceptable range as determined by the lead agency. The role of OSFM by statute is to ensure that the operator includes all the required components of an analysis, it is not our role to conduct the evaluation or second guess the lead agency determination as required by 51011.6(a). (PC05-03)

	already required vapor dispersion analysis under § 2177.2 of these regulations, as well as the pipeline design specifications including diameter, thickness, and shut-off valve locations. This analysis would help operators and OSFM identify segments of higher risk and prioritize them. It is also how operators choose preventative and mitigative measures for reducing risk for certain segments, and determine whether the selective measures were effective at reducing risk. Additionally, this risk analysis and assessment will help operators, and in turn the lead agency, determine which pipeline segments could affect sensitive receptors, what the risk to sensitive receptors looks like, and whether that risk is within an “acceptable range” as is statutorily required in Section 51011.6 of the Government Code. This analysis is a critical tool to ensure the safety of communities living and working near carbon dioxide pipelines. (PC05-03)	
General - 12	Prioritization of co-location for carbon capture and pipeline projects: The final regulations do not require a project developer and/or operator to prioritize co-location or minimize the total distance of pipeline transportation from a carbon capture or removal project site to a suitable well and/or geologic storage site. If a project developer/ operator	The OSFM does not have authority to require this information in authorizing statutes. This information is likely best required during the CEQA process, by local lead agencies, or other permitting authorities that regulate portions of these projects.

	cannot co-locate a project or access a geologic storage site with minimal pipeline distance, they must sufficiently demonstrate to the OSFM why the pipeline must go beyond this distance. This information should be made available to the public. (PC02-15)	
General - 13	Environmental Protection: These regulations do not require that, at a minimum, these pipelines are subject to the same federal and state siting regulations for oil and gas pipelines through state and national parks. The OSFM should ensure that pipelines are restricted or prohibited from running through areas identified by the federal government as tribal land, wilderness areas, national monuments, national parks, historic sites, and protected areas. Similarly, pipelines should not be allowed to run through state parks without the proper permits. (PC02-16)	The OSFM does not have authority to require this information in authorizing statutes.
General - 14	We recognize that SB 614 requires OSFM to reassess these safety standards at least once every five years. We urge OSFM to treat this statutory floor as the bare minimum and commit to ongoing engagement with frontline communities between review cycles. Specifically, we request that OSFM establish a formal mechanism for ongoing community input and proactively address identified regulatory gaps as new information about CO2 pipeline	Thank you for your comment. Any potential future rulemaking activities would be conducted consistent with the Administrative Procedures Act and include community participation.

	risks becomes available. (PC02-17)	
General - 15	We request that OSFM commit to developing and publishing a comprehensive public report after two years of final regulation implementation… This report must be publicly available on OSFM's website. We further request that OSFM submit this report to the California State Legislature to inform any future legislative action on CO2 pipeline safety, and that its findings be used as a basis for evaluating whether regulatory updates are warranted ahead of the five-year statutory review. (PC02-18)	Thank you for your comment. As you noted, the OSFM is not required to develop a report by statute. But we will consider your comments in potential future rulemaking.
General - 16	This draft fails to require increased training for first responders on CO2 leaks. It was obvious in the pipeline rupture in Satartia, Mississippi, first responders were unsure and underprepared to handle the situation. If a similar rupture happened in California and first responders were underprepared there could be a significant public health crisis. We request that OSFM add required training for first responders in any location where CO2 pipelines are proposed to be built. (PC04-05)	(PC04-05) The OSFM does require carbon dioxide pipeline operators to provide training services for State and local emergency services. Specifically, § 2175.3(b)(2) states: (b) For pipelines constructed in a location where one or more sensitive receptors are located within the emergency planning zone, the operator must: (2) Provide training services for State and local emergency services, and disaster agencies for training, exercises, and equipment related to carbon dioxide pipelines in accordance with section 2177.3. It should be noted that the National Association of State Fire Marshal's provides CO2 training to local first responders. The OSFM is contracted with NASFM to conduct these trainings at no cost to local agencies, and we encourage local agencies to contact NASFM and request trainings on this topic.
General - 17	In light of assertions made in the Supplemental Statement of Reasons for this proceeding, in	(PC08-01) Please see Public Resources Code section 71465(a)(2):

	particular the claim that “the moratorium remains in effect until OSFM adopts the proposed regulations,” it warrants mentioning that the objective of the Legislature in enacting SB 614, and the actual effect of the law, was to end the moratorium on the intrastate use of pipelines to transport CO2. Regardless of whether OSFM fulfills is obligation to expeditiously adopt regulations that track PHMSA’s draft, the moratorium no longer exists. (PC08-01)	(2) A pipeline, as defined in Section 51010.5 of the Government Code, shall be used to transport carbon dioxide to or from a carbon dioxide capture, removal, or sequestration project ***only after*** the State Fire Marshal adopts regulations pursuant to Section 51011.5 of the Government Code and the carbon dioxide capture, removal, or sequestration project operator demonstrates that the pipeline meets the standards in those regulations. (***Bold, underline, italics*** added for emphasis) The OSFM respectfully disagrees with the commenters assertion that SB 614 removed the moratorium by an act of the Legislature. Language found in the above Public Resources Code (originally passed as SB 905 in 2021-2022 legislative session) clearly states that the moratorium is only lifted following regulatory adoption by the State Fire Marshal. This law remains unchanged and, on the books, today. Despite the authors statement that the objective of the Legislature in enacting SB 614, the law does not in fact effectuate their conclusion. By the Legislatures own carefully chosen language, the only way the moratorium may be removed, is by OSFM adoption of regulations pursuant to Government Code 51011.5. Government Code section 51011.5(b)(1) provides additional language that evinces the Legislature’s intent to impose a moratorium until OSFM adopted regulations. This section specifically states that: “All requirements of the regulations adopted or amended pursuant to subdivision (a) ***shall apply to pipelines newly constructed*** to transport carbon dioxide ***after the effective date of the regulations*** or the regulations, as amended...” (***Bold, underline, italics*** added for emphasis) The legislature specifically chose to construct this sentence to reflect a prospective application to newly constructed pipelines, only following the

		adoption of regulations by the OSFM may the moratorium be lifted. If the commenter believes that, with the passage of SB 614, they are now allowed to construct and operate a CO2 pipeline in the absence of regulations adopted by the OSFM, they may have misinterpreted the above statutes. Actions taken to operate a CO2 pipeline in the absence of OSFM adopting regulations could be in conflict with the law and the stated moratorium imposed by the Legislature.
General - 18	Indeed, while the Legislature did not limit OSFM's rulemaking authority to copying PHMSA's draft NPRM, the record does not suggest that they thought more would be needed, as evidenced by the short timeframe given to adopt similar rules on an emergency basis. Where the Legislature thought additional measures were needed, it prescribed them. And where it saw room for additional considerations, it identified those issues, namely the use of odorants, for future rulemaking. (PC08-02) Although the legislature did not require OSFM to follow the federal draft regulations to the letter, the license to go further was implicitly grounded in an expectation that additions would be feasible and effective. To the extent more study and discussion is needed to demonstrate that supplemental regulations meet these requirements, they should be	Government Code section 51011.5(a)(1(A) states: "On or before July 1, 2026, the State Fire Marshal shall adopt regulations governing the safe transportation of carbon dioxide in pipelines that are, ***at a minimum***, as protective as the draft federal regulations set forth in the unofficial version of the Notice of Proposed Rulemaking issued by the federal Pipeline and Hazardous Materials Safety Administration on January 10, 2025, pursuant to rulemaking (RIN 2137-AF60)..." (***Bold, underline, italics*** added for emphasis) Again, the OSFM respectfully disagrees with commenters assertion that the Legislature and "record does not suggest that they thought more would be needed..." beyond the federal minimum draft regulations. One need only look to the statutory language noted above in Government Code 51011.5(a)(1)(A) to read what the Legislature specifically stated, that the draft PHMSA regulations were the minimum and that OSFM could adopt additional measures beyond those specified in the draft federal regulations. The commenter further points to the short timeframe given to OSFM to adopt regulations as evidence that the office was to adopt only the language found in the draft federal regulations. However, this confuses the issue with the language contained in the statue.

	considered in subsequent proceedings. (PC09-01) SB 614 explicitly authorizes OSFM to subsequently amend the regulations as it deems necessary to address a range of issues, including appropriate requirements for depth of cover that should be informed and considered in full and thorough rulemaking process. OSFM should refrain from proposing these extensive requirements though the emergency rulemaking process and consider them in a subsequent full rulemaking. (PC09-06) PG&E recommends that OFSM conform with the scope of the PHMSA 2025 draft rule, and consider any further revisions or amendments through a full regulatory process with transparency and robust stakeholder engagement. (PC10-01)	Timing to adopt regulations neither prevents the OSFM from adopting more stringent regulations nor does it command OSFM to adopt only the federal minimum in the draft regulations. It only provides that regulations should be adopted by a specified date. Importantly, commenter even notes that "the legislature did not limit OSFM's rulemaking authority to copying" the draft federal regulations. Here the commenter is correct that, where the Legislature has delegated rulemaking authority to an agency (such as the OSFM) they directly recognize the expertise and knowledge of the agency in drafting details, technical standards, and enforcement mechanisms and are given discretion to draft regulations to achieve the end goal of the legislation, safe transportation of carbon dioxide by pipeline. The commenter goes on to state that odorants be considered in the initial emergency rulemaking as evidence that OSFM cannot go beyond the minimum required by the draft federal regulations. Commenter is only partially accurate when saying that: "Where the Legislature thought additional measures were needed, it prescribed them. And where it saw room for additional considerations, it identified those issues, namely the use of odorants..." The legislature did specify in 51011.5(a)(1)(C) that: "The State Fire Marshal ***shall*** consider the use of odorants and ***shall*** require the use of odorants if it finds the use of an odorant is feasible, safe, and effective." (***Bold, underline, italics*** added for emphasis) This subsection (C), is part of the initial subparagraph of (a)(1) directing the adoption of emergency regulations and contains the mandatory language "shall", which directs the OSFM to consider odorants as part of the initial emergency rulemaking. The OSFM did so, but found that odorant was not feasible, safe, and effective at this time. It should be noted that in all of 51011.5(a)(1) there is no language limiting the OSFM from adopting

		more protective regulations. In fact, when reading the statute, we find that the Legislature specifically stated that the OSFM adopt regulations that were, at a minimum, as protective as the draft federal regulation. The Legislature did not put an upward bounds or limit on what would be considered too protective or safe. It only specified that at least one factor must be considered, odorization. It did not include odorization to the exclusion of all other possibilities. Here, the Legislature rightfully delegated rulemaking authority to the OSFM to ensure a thorough and safe regulatory scheme was adopted, not that only the minimum draft regulations be flat out adopted.
General – 19	While we sincerely appreciate the efforts by the OSFM to timely produce the requested emergency regulations, we have previously noted that some of the provisions that go beyond or depart from the PHMSA draft regulations, in particular those that expand on the statutory requirements already prescribed and defined by the Legislature, risk creating duplicative permitting processes and requirements, unnecessarily increasing the costs of projects that the Legislature intended to promote as a mean of achieving their goals to arrest the impacts of climate change. We accordingly encourage OSFM to continually revaluate, and as necessary revise, the carbon dioxide pipeline regulations to ensure that they are grounded in facts about how CO2 pipelines perform and account for the benefits, recognized in	Thank you for your comment. The OSFM is required to reassess the safety standards in this Article at least once every five years in accordance with 51011.5(c). Any future rulemaking activities would be conducted consistent with the Administrative Procedures Act and include community participation.

	California law and policy, that such pipelines offer. (PC08-03)	
General - 20	The Supplemental Statement of Reasons further explaining the agency's rationale for the proposed emergency regulations rightly recognizes that CCUS technologies will be needed to support achievement of California's statutorily mandated greenhouse gas reduction goals. However, noticeably absent from these materials is any reference to or discussion of the extensive track record of safe transportation of CO2 via pipeline in the United States over several decades. (PC09-02)	Thank you for your comment regarding the extensive track record of safe transportation of CO2 via pipeline in the United States over several decades. The OSFM believes the regulations in this Article will continue upon that safe track record by ensuring carbon dioxide pipelines in California are designed, constructed, operated, and maintained in a safe manner to protect the people, environment, and property of Californians.