

# **SB 463: CHEMICAL INVENTORY AND ROOT CAUSE ANALYSIS REGULATIONS**

## **NOTICE OF PROPOSED RULEMAKING ACTION**

### **REGARDING**

#### **TITLE 14. NATURAL RESOURCES DIVISION 2. DEPARTMENT OF CONSERVATION CHAPTER 4. DEVELOPMENT, REGULATION, AND CONSERVATION OF OIL AND GAS RESOURCES**

Notice Published April 19, 2024

Office of Administrative Law Notice File Number: Z2024-0409-03

**NOTICE IS HEREBY GIVEN** that the California Department of Conservation (Department) proposes to adopt the regulations described below after considering all comments, objections, and recommendations regarding the proposed action.

#### **WRITTEN COMMENT PERIOD AND PUBLIC COMMENT HEARING**

Any person, or his or her authorized representative, may submit written statements, arguments, or comments related to the proposed regulatory action to the Department.

Comments may be submitted by email to:

[undergroundgasstorageregs@conservation.ca.gov](mailto:undergroundgasstorageregs@conservation.ca.gov)

or by mail to:

Department of Conservation  
715 P Street, MS 1907  
Sacramento, CA 95814  
ATTN: SB 463 Rulemaking

**The written comment period closes at 11:59 pm on June 5, 2024.** The Department will only consider comments received at the Department's offices by that time.

### **Public Hearing**

Any interested person, or his or her authorized representative, may present, either orally or in writing, comments regarding the proposed action at the virtual public hearing to be held on **June 4, 2024 at 5:30 pm**.

Register for the public hearing on zoom:

[https://us06web.zoom.us/webinar/register/WN\\_4aLwWnrISFSLyElgH0dK0A](https://us06web.zoom.us/webinar/register/WN_4aLwWnrISFSLyElgH0dK0A)

Or join by telephone: 877-336-1831 Conference Code 148676  
Spanish: 888-455-1820 Código de Conferencia 3642190

### **Accessibility**

If you have a disability and require a reasonable accommodation to fully participate in this event, please contact Sarah Rubin, Outreach and Engagement Coordinator, as soon as possible to discuss your accessibility needs.

Email: [Sarah.Rubin@conservation.ca.gov](mailto:Sarah.Rubin@conservation.ca.gov) | PH: (916) 214-5731

[English]

Translation and interpretation services may be provided upon request. To ensure availability of these services, please make your request no later than ten working days prior to the workshop by contacting Sarah Rubin, Outreach and Engagement Coordinator. Email: [Sarah.Rubin@conservation.ca.gov](mailto:Sarah.Rubin@conservation.ca.gov) | PH: (916) 214-5731

[Spanish]

Se podrán proporcionar servicios de traducción e interpretación a petición previa. Para poder garantizar la disponibilidad de estos servicios, asegúrese de realizar su solicitud a más tardar diez días hábiles antes de la reunión comunitaria comunicándose con Sarah Rubin, Coordinadora de Alcance y Participación. Correo electrónico: [Sarah.Rubin@conservation.ca.gov](mailto:Sarah.Rubin@conservation.ca.gov) | Tel: (916) 214-5731

### **AUTHORITY AND REFERENCE**

Pursuant to the authority vested by California Public Resources Code sections 3013, 3106, and 3180, and to implement, interpret, or make specific sections 3011, 3106, 3180, 3181, 3181.5, 3183, 3184, 3186.3, 3220 and 3403.5 of the Public Resources Code, the Department proposes to amend title 14, division 2, chapter 4, subchapter 1, article 5 of the California Code of Regulations, sections 1726.1, 1726.3, 1726.3.1, 1726.4.4, and 1726.6.1, and add new sections 1726.3.2, 1726.3.3, and 1726.4.3.

## INFORMATIVE DIGEST / POLICY STATEMENT

The California Geologic Energy Management Division (Division), within the Department, supervises and regulates oil, gas, and geothermal well operations, including their attendant facilities, throughout the State. (See Pub. Resources Code, § 3106.) The Division carries out its regulatory authority to encourage the wise development of oil and gas resources, while preventing damage to life, health, property, and natural resources. The Division regulates the injection of natural gas into large underground reservoirs for storage before the gas is later withdrawn for sale to residential, commercial, and industrial customers and natural gas power plants. The Division oversees underground gas storage (UGS) facilities to ensure that the original reserves are not lost, that drilling of new wells is conducted safely, and to minimize the risk of damage to public health and the environment. (Pub. Resources Code, §§ 3106, 3180, 3181, 3183, 3184, 3220 and 3403.5.) The Division's duties include the protection of public health and safety and environmental quality, including reduction and mitigation of greenhouse gas emissions associated with the development of hydrocarbon resources. (Pub. Resources Code, § 3011.)

### **Existing Regulations**

On October 23, 2015, a natural gas leak was discovered from an injection and production well in the Aliso Canyon Natural Gas Storage Facility in Los Angeles County. The leak, and subsequent well blowout, represented a significant threat to the public peace, health, safety, and general welfare. It resulted in the relocation of thousands of people from the areas proximal to the facility and, according to the California Air Resources Board, released at least 109,000 metric tons of methane. On February 11, 2016, the operator temporarily controlled the leak by injecting mud from a relief well intersecting the bottom of the leaking well. A permanent seal of the well was announced on February 18, 2016.

In response to the Aliso Canyon incident, the Division promulgated emergency regulations on February 5, 2016, imposing requirements on all UGS facilities in the state. The Legislature also responded to the incident, and, effective January 1, 2017, Senate Bill 887 (Pavley, Chapter 673 statutes of 2016) (SB 887) established a number of significant new statutory requirements for UGS facilities, including a requirement that no single point of failure pose an immediate threat of loss of control of fluids. Consistent with the statutory requirements of SB 887, the Division promulgated a set of regulations specific to UGS facilities which became effective on October 1, 2018.

The 2018 regulations were implemented within the California Code of Regulations as a new article that is dedicated to the regulation of UGS activities, and which created a

comprehensive regulatory framework tailored to the regulatory concerns specific to UGS projects. UGS operators also remain subject to the existing requirements for all wells enforced by the Division.

Upon implementation of the 2018 regulations, UGS operators were subject to risk management plan (RMP) and emergency response plan (ERP) requirements, well construction standards, mechanical integrity testing, data requirements, records management protocols, and monitoring and inspection requirements for wells and UGS projects. The proposed regulations build on these requirements consistent with statutory mandates and goals for UGS projects to reduce risks to health, safety, and the environment, and to facilitate thorough and transparent oversight, evaluation, and risk assessment of UGS projects.

### **Proposed Regulations**

Investigations into Aliso Canyon continued after the new regulations were in place. The California Public Utilities Commission (CPUC), in consultation with the Division and the federal Pipeline and Hazardous Materials Safety Administration (PHMSA), selected Blade Energy Partners to perform an independent analysis in parallel with investigations being performed by the Division and the CPUC. On May 17, 2019, Blade issued a root cause analysis report for the incident that includes a main report and four volumes of supplementary reports (Blade Report).

Simultaneously, local public health officials, private health professionals, and community groups were reaching out to the Legislature and the Division, concerned that there was insufficient information regarding the chemical makeup of the gas that had been released during the Aliso Canyon event to properly evaluate public health impacts on neighboring communities.

In response to these concerns, the Legislature passed Senate Bill 463 (Stern, Chapter 773 statutes of 2019) (SB 463) which requires operators to provide to the Division "a complete chemical inventory of the materials, of any phase, that may be emitted from the gas storage well in the event of a reportable leak...no less than annually." It also requires the Division to review and revise its regulations related to reportable leaks at least every 10 years. Finally, SB 463 requires the Division to review, and if necessary, revise, its policy and regulations to address the root causes identified by the Blade Report, including consideration of cathodic protection, well control plans, and investigations into leaks and equipment integrity.

The amendments and additions to the UGS regulations proposed in this package respond to the requirements of SB 463 and include lessons learned by Division regulatory

professionals as they have applied the UGS regulations which became effective in 2018. The proposals include a definition for a Gas Storage Well Chemical Inventory as well as a dedicated regulatory section outlining what the inventory must contain and identifying the details of a protocol for collecting, maintaining, and submitting chemical information to the Division. A new section devoted to corrosion evaluation and mitigation includes language recommended by corrosion professionals at the Lawrence Livermore National Laboratory and requires consideration of cathodic protection as well as other mitigation strategies.

These proposed regulations further the Division's statutory mandate under Public Resources Code (PRC) sections 3011, 3106, 3180, 3181, 3181.5, 3183, 3184, 3186.3, 3220 and 3403.5 to maintain surveillance over UGS facilities by requiring tracking and reporting of off-normal events, to identify integrity concerns by prescribing corrosion evaluation, mitigation and monitoring that will reduce the risk of future incidents like Aliso Canyon, and to prevent damage to life, health, property, and natural resources by identifying the chemicals and pollutants that could be emitted from a UGS well.

The proposed regulations are intended to supplement the Division's current regulatory framework related to underground gas storage with the following objectives:

- Address new regulatory definitions, including "gas storage well chemical inventory," and "Inflow Performance Relationship."
- Expand elements of operator RMPs, including corrosion protocols and strategies, reporting of off-normal occurrences, and the inclusion of contractors' level of training, experience, and expertise in the assessment of human factors in operating and maintenance procedures.
- Address new elements of the ERP, including well-specific well control plans that include evaluations of the conditions indicated by well-specific inflow performance relationship curves, and identification of monitoring, sampling, and testing methods that may be utilized to detect and, if possible, quantify chemicals of concern if requested by the Division in the event of a leak.
- Address the timeframe for updates to the ERP.
- Address prevention and mitigation protocols regarding corrosion evaluation and corrosion monitoring and risk mitigation strategies.
- Address prevention and mitigation protocols for defining, investigating, tracking, and reporting to the Division any off-normal occurrences including content and

timing for reporting, investigation, evaluation and remediation of the occurrence, supplemental reporting, and the required use of the collected data to update and improve RMP methodology.

- Address the gas storage well chemical inventory, including the types of materials required to be listed, chemical abstract service number for each chemical, analytical test results of the chemical constituents present, a list of chemicals to be tested for, and a detailed protocol for maintaining and providing the inventory to the Division.

### **ANTICIPATED BENEFITS OF THE PROPOSED REGULATION**

The proposed regulations supplement the Division's current regulatory framework concerning gas storage wells by increasing well corrosion monitoring and mitigation, increasing the scope of RMPs and ERPs, requiring more frequent updates to an operator's ERP, increasing reporting requirements for off-normal occurrences, and requiring an accurate inventory of chemicals that have been added to each well.

In general, this rulemaking action will clarify, and augment the regulatory standards applicable to UGS projects in California to reduce threats to life, health, property, and natural resources, and protect stored resources, surface and underground waters, and the public welfare. The proposed chemical inventory regulations will provide needed transparency and information about the chemicals to which the public may be exposed in the event of a release from a gas storage well. The other proposed regulations and amendments will enhance the Division's existing UGS regulations to support and facilitate operator detection, investigation, evaluation, and mitigation of well integrity issues. These supplements will benefit public health and safety and the environment by reducing the risk of blowouts, strengthening emergency response procedures to be current and complete in the event of a blowout, and collecting information that can support public health analysis after a reportable leak occurs.

### **CONSISTENCY WITH FEDERAL STATUTE AND REGULATION**

In June 2016, Congress enacted the "Securing America's Future Energy: Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016" or "Safe Pipes Act." Of significance to UGS projects, the Safe Pipes Act added a new section entitled "Standards for Underground Natural Gas Storage Facilities." (49 U.S.C. § 60141.) That section authorizes states to adopt additional or more stringent safety standards for intrastate underground natural gas storage facilities if such standards are "compatible" with federal minimum standards implementing the Safe Pipes Act. (49 U.S.C. § 60141, subd. (e).)

PHMSA is the federal agency primarily responsible for pipeline regulation and safety (49 USC, § 108, (b), (f)). It adopts regulations that prescribe minimum pipeline safety standards for the pipeline transportation of natural gas, as well as regulations that prescribe minimum standards for underground gas storage facilities. The Division's 2018 regulations for California UGS facilities were based on the same industry standards as PHMSA's safety rules and complement, rather than conflict, with those standards.

The proposed regulations do not unnecessarily duplicate or conflict with federal regulations contained in the Code of Federal Regulations addressing the same issues; they complement and extend corresponding PHMSA requirements. For example, PHMSA requires reporting of "safety-related conditions" within five to ten working days (49 CFR §§ 191.23 and 191.25 (a)), while the proposed regulations would require reporting of "off-normal occurrences" within 30 days. The term "safety-related condition" is not defined in 49 CFR, but reportable conditions are listed in § 191.23 and are similar in severity and level of urgency to the off-normal occurrences listed in the proposed regulations.

Unlike the PHMSA rule which does not require reporting of certain conditions corrected within five or ten working days, the proposed regulations require reporting of all off-normal occurrences, even if they have been repaired before the deadline for the filing of the report. This proposed requirement is consistent with the recommendation of the California Council on Science and Technology, which recommends an off-normal occurrence database as a source of learning and collaboration for operators and regulators,<sup>1</sup> requiring all events to be included, even if corrected.

SB 463 directs the Division to collect an inventory of the chemicals that may be emitted from a well in the event of a reportable leak. (Pub. Resources Code, § 3181.5.) There is no equivalent existing requirement under federal law. SB 463 also directs the Division to consider requirements for cathodic protection, well control, and off-normal incident reporting, to mitigate threats to life, health, property, the climate, or natural resources. (Pub. Resources Code, § 3186.3; see also Pub. Resources Code, § 3403.5 [charging the Division with responsibility to ensure that no damage occurs to the environment by reason of injection and withdrawal of gas at underground storage facilities].) The Division's proposed regulations are necessary to achieve California's statutory goals of greater protection of health and safety and are generally consistent with, compatible with, or stricter than the federal standards.

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<sup>1</sup> California Council of Science & Technology. Long-Term Viability of Underground Natural Gas Storage in California. Pg. 330-332. 2018. [https://ccst.us/wp-content/uploads/Full-Technical-Report-v2\\_max.pdf](https://ccst.us/wp-content/uploads/Full-Technical-Report-v2_max.pdf).

## **CONSISTENCY WITH EXISTING STATE REGULATIONS**

The Division has determined that the proposed regulations are not inconsistent or incompatible with existing state regulations. To the extent other state agencies may enforce health, safety, or environmental protection standards that could apply to underground gas storage facilities because they are regulations of general application affecting a wider range of industrial activities, those regulations are not expected to be inconsistent or incompatible with the regulations proposed here.

Certain aspects of the Division's proposed regulations would apply to intrastate natural gas pipelines and associated facilities that are located within the gas storage field. These pipelines also fall under the regulatory jurisdiction of the CPUC and are subject to CPUC General Order No. 112-F. To the extent the Division's proposed regulations overlap with CPUC's requirements as applied to certain pipelines, the Division's regulations would not be inconsistent or incompatible with CPUC's requirements.

For example, while CPUC's General Order requires protection of pipelines from external corrosion and regular inspection for evidence of corrosion (see General Order No. 112-F, §§ 125.4(f), 183.3, 183.5), the Division's proposed regulations would require development of a comprehensive prevention and mitigation protocol to provide for corrosion evaluation, corrosion risk mitigation, and monitoring. The Division's requirement for more extensive corrosion prevention and mitigation would not prevent compliance with the CPUC requirements. Further, the Division and CPUC have a Memorandum of Agreement in place to ensure coordinated, consistent, and non-duplicative regulation of pipelines and facilities associated with UGS projects.

## **PLAIN ENGLISH REQUIREMENT**

The Department staff prepared the proposed regulations pursuant to the standard of clarity provided in Government Code section 11349, subdivision (c), and the plain English requirements of Government Code sections 11342.580 and 11346.2, subdivision (a)(1). The proposed regulations are written in a manner to be easily understood by the persons that will use them.

## **LOCAL MANDATE**

The Department has determined that the proposed action does not impose a mandate on local agencies or school districts.



### **COST TO LOCAL AGENCIES**

This proposed action does not impose costs on any local agency or school district for which reimbursement would be required pursuant to Part 7 (commencing with section 17500) of Division 4 of the Government Code. This proposal does not impose other nondiscretionary costs or savings on local agencies.

### **COST OR SAVINGS IN FEDERAL FUNDING**

This proposal does not result in any costs or savings in federal funding to the state.

### **COST OR SAVINGS TO STATE AGENCIES**

Implementation of the requirements in the proposed regulations would require the Division to incur additional staff hours for oversight of operator compliance. During the first-year implementation period, the Division will incur an estimated total expense of \$241,962 from staff hours for RMP expansions. In subsequent years, the Division will incur an annual recurring expense of \$181,472 from staff hours for the monitoring of the same requirements. These impacts will be absorbable.

Implementation of the requirements in the proposed regulations will not affect non-discretionary costs or savings to local agencies, including costs to any local agency or school district requiring reimbursement pursuant to section 17500 et seq., and will not affect federal funding to the State.

### **EFFECT ON HOUSING COSTS**

The Department has determined that the proposed regulation will have no significant effect on housing costs.

### **IMPACT ON BUSINESS**

The proposed regulations will affect owners and operators of UGS facilities. Total direct costs to operators will be \$1.15 million in the first year and \$808 thousand in subsequent years. The following reporting, recordkeeping, and compliance requirements will result from the proposed regulations:

- Requirements for corrosion evaluation, corrosion risk mitigation strategies, and monitoring protocols for each gas storage well.
- Requirements for defining, investigating, tracking, and reporting any off-normal occurrence.

- Evaluation of the level of training, experience, and expertise of contractors and assessment of their contribution to risk.
- Creation and submission of well-specific well control plans to include Inflow Performance Relationship and the associated data or modeling.
- Identification of monitoring, sampling, and testing methods for chemicals of concern.
- Requirements for the identification of chemical constituents, and the tracking and reporting of a Gas Storage Well Chemical Inventory on a well-by-well basis with protocols for regular update.

The Department has made an initial determination that the adoption of these regulations will not have a significant, statewide economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The Department has considered proposed alternatives that would lessen any adverse economic impact on business and invites the submission of proposals. Alternatives already considered can be found in the Initial Statement of Reasons. Submissions may include the following considerations:

- The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to businesses.
- Consolidation or simplification of compliance and reporting requirements for businesses.
- The use of performance standards rather than prescriptive standards.
- Exemption or partial exemption from the regulatory requirements for businesses.

### **IMPACT ON SMALL BUSINESS**

The Department has determined that the proposed regulations will not directly affect small businesses, as the requirements of the proposed regulations apply only to operators of UGS projects which are not classified as small businesses.

### **COST IMPACTS ON A REPRESENTATIVE PRIVATE PERSON OR BUSINESS**

The Department drafted the proposed regulations after careful consideration of current best practices with regard to underground gas storage, as well as similar statutes and regulations implemented by other federal and state agencies. Additionally, the Department drafted the proposed regulations based on the requirements of SB 463. The following areas of the proposed regulations have been identified by the Department as potentially resulting in economic impact on a representative operator:

- Expansion of the RMP, including updating the ERP, expanding corrosion evaluation, mitigation, and monitoring protocols, and the reporting of off-normal occurrences.
- Creation and maintenance of a gas storage well chemical inventory for each well.

## **RESULTS OF THE ECONOMIC IMPACT ASSESSMENT/ANALYSIS**

Based upon its analysis, the Department determined:

- The proposed regulations may affect the creation of jobs within the State of California. The proposed regulations will not affect the elimination of jobs within the State of California.
- The proposed regulations will not affect the creation of new businesses or the elimination of existing businesses within the State of California.
- The proposed regulations will not affect expansion of businesses currently doing business within the State of California.
- The proposed regulations will benefit the health and welfare of California residents, worker safety, and the environment by improving regulatory oversight of UGS projects such that harms to the public are more likely to be avoided. More information on these benefits can be found in the Initial Statement of Reasons and Economic Impact Analysis.

The proposed regulations satisfy the Division's statutory mandate under SB 463 to address the root causes identified in the 2015 well leak at the Aliso Canyon gas storage facility and require operators of gas storage wells to provide a complete chemical inventory of materials that may be emitted from a gas storage well in the event of a reportable leak. In addition, the proposed regulations satisfy the same statutory mandate to require an operator to report to the Division a leak that poses a significant present or potential hazard to public health and safety, property, or to the environment.

## **NO SIGNIFICANT STATEWIDE ADVERSE ECONOMIC IMPACT**

The Department has determined that the proposed regulations will not have a significant statewide adverse economic impact directly affecting business, including the ability of businesses within California to compete with businesses in other states.

## **BUSINESS REPORTING REQUIREMENT**

These regulations will require the submission of information to the Department by businesses that own and/or operate gas storage facilities and gas storage wells. The Department finds that it is necessary for the health, safety, or welfare of the people of this state that the submission of information required by these regulations applies to the affected businesses.

## **CONSIDERATION OF ALTERNATIVES**

In accordance with Government Code section 11346.5, subdivision (a)(13), the Department must determine that no reasonable alternative it considered or that has otherwise been identified and brought to the attention of the Department would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

The Department invites interested persons to present statements or arguments with respect to alternatives to the proposed regulations during the written comment period or at any hearing scheduled to take statements or arguments that are relevant to the proposed action.

## **CONTACT PERSONS**

Inquiries concerning the proposed administrative action may be directed to:

Department of Conservation  
715 P Street, MS 1907  
Sacramento CA 95814  
Attn: SB 463 Regulations

Christine Hansen  
Regulations Manager  
Phone: 916-694-7577

[Christine.Hansen@conservation.ca.gov](mailto:Christine.Hansen@conservation.ca.gov)

Nick Pesci  
Regulatory Analyst  
Phone: 916-208-4190

[Nicholas.Pesci@conservation.ca.gov](mailto:Nicholas.Pesci@conservation.ca.gov)

The Department has available the express terms of the regulation, the Initial Statement of Reasons, and all the information upon which the proposal is based (the rulemaking record). Copies of the primary rulemaking documents are available on the

Department website at <https://www.conservation.ca.gov/index/Pages/rulemaking.aspx>, with all documents being available upon request to the contact persons listed above.

#### **AVAILABILITY OF CHANGED OR MODIFIED TEXT**

The Department will consider all timely and relevant comments received during the written comment period and at the public hearings above. Thereafter, the Department may adopt the proposed regulations in substantially the same form as described in this Notice.

If the Department makes any modifications to the text of the proposed regulations that are substantial, but sufficiently related to the original proposed text as described in this Notice, the Department will make the modified text (with changes clearly indicated) available to the public for at least 15 days before adopting the proposed regulations as modified. The Department will accept written comments regarding modified regulations for 15 days after the date upon which they are made available to the public. Please send requests for copies of any modified regulations via email or mail to the persons identified as contact persons in this notice.

#### **AVAILABILITY OF THE FINAL STATEMENT OF REASONS**

Upon its completion, copies of the Final Statement of Reasons may be obtained by sending an inquiry to one of the contact persons above. The Final Statement of Reasons will also be available on the Department website at: <https://www.conservation.ca.gov/index/Pages/rulemaking.aspx>.

#### **AVAILABILITY OF DOCUMENTS ON THE INTERNET**

Copies of this Notice of Proposed Action, the Initial Statement of Reasons, and the text of the regulations in underline and strikeout can be accessed through our website at: <https://www.conservation.ca.gov/index/Pages/rulemaking.aspx>.

If you have any questions regarding the process of the proposed action, please contact Christine Hansen at [Christine.Hansen@conservation.ca.gov](mailto:Christine.Hansen@conservation.ca.gov).