

## MAJOR REGULATIONS STANDARDIZED REGULATORY IMPACT ASSESSMENT SUMMARY

DF-131 (NEW 11/13)

### STANDARDIZED REGULATORY IMPACT ASSESSMENT SUMMARY

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#### 1. *Statement of the need for the proposed major regulation.*

The proposed regulations are necessary to fully implement a functional, improved, rigorous system of precautionary risk mitigation measures for the construction, operation, and routine testing of underground gas storage projects, in accordance with the legislative mandate set forth in Senate Bill 887 (Pavley, Chapter 673, Statutes of 2016). The proposed regulations will replace emergency regulations adopted by the Department of Conservation in February 2016, following the major leak incident at well SS-25 in the Aliso Canyon Natural Gas Storage Facility, and improve upon those emergency regulations by identifying specific requirements and performance standards to achieve more rigorous precautionary requirements for well construction and testing specifically-tailored to the unique engineering challenges presented by underground gas storage projects. The proposed regulations will substantially reduce the likelihood of leaks occurring at natural gas storage facilities, and increase the likelihood that leaks will be more quickly identified and fixed when they do occur. By so doing, the proposed regulations will serve to reduce pollution from the escape of natural gas to the atmosphere, reduce risks to public health and safety associated with exposure to natural gas and proximity to gas injection wells with compromised mechanical integrity, and improve conservation of valuable natural gas resources. Without the proposed regulations, the legislative mandates of Senate Bill 887 would lack sufficient clarity and specificity for operators of underground gas storage facilities to fully comply, and the operation of underground gas storage projects would continue to be regulated under the requirements of California's Underground Injection Control Program, which applies to wells engaged in injection of fluids associated with oil and gas production generally.

#### 2. *The categories of individuals and business enterprises who will be impacted by the proposed major regulation and the amount of the economic impact on each such category.*

The gas storage industry will experience the primary impacts of the proposed regulations. Large capital costs will occur the first five years of implementation as work is performed. Oil and gas service provider jobs will see a slight increase due to work demanded on UGS facilities. Secondary industries that may see this slight increase in product or service demand include manufacturing of instruments for measuring, displaying and controlling industrial process variables; machinery, equipment, and supplies merchant wholesalers; mining, quarrying, oil and gas extraction and support activities; oil and gas extraction industry including storage and monitoring; pipeline transportation of natural gas and operations; and scientific research and development services including physical, engineering, and life sciences.

#### 3. *Description of all costs and all benefits due to the proposed regulatory change (calculated on an annual basis from estimated date of filing with the Secretary of State through 12 months after the estimated date the proposed major regulation will be fully implemented as estimated by the agency).*

Costs: Estimated direct costs likely to be incurred by regulated industries for the years 2017-21 are \$243 million (2017); \$236 million (2018); \$234 million (2019); \$233 million (2020); and \$231 million (2021). This includes costs for compliance with new standards pertaining to, among other things, records management, surface controlled subsurface safety valves (SCSSVs), maintenance, testing, observation wells, leak detection equipment, and staffing costs, as detailed in the SRIA.

Benefits: The proposed regulations will improve the reliability of underground gas storage facility operations across the state, reduce the escape of stored natural gas resources into the atmosphere as pollutants, and reduce the likelihood of disruption in natural gas energy supply. Although the proposed regulations will create large upfront capital investment costs to bring existing underground gas storage project facilities into compliance, the proposed regulations may provide long-term cost savings for operators by reducing the likelihood and severity of any future gas leaks. With the implementation of the proposed regulations, the risk of a gas leakage incident on par with the leak at the Aliso Canyon facility well SS-25 occurring again will be greatly reduced.

#### 4. *Description of the 12-month period in which the agency estimates the economic impact of the proposed major regulation will exceed \$50 million.*

The proposed regulations' economic impacts are estimated to exceed the \$50 million threshold for a 12-month period (2017) after implementation. Underground gas storage facility operators will incur costs to comply with new requirements pertaining to records management, SCSSVs, maintenance, testing, observation wells, leak detection equipment, staffing costs, and more (details in SRIA). Using the best information available and the assumptions described in the analysis, it is estimated that once the initial capital expenditures necessary to bring existing facilities into compliance have been completed (approximately five years), annual costs for operators to maintain compliance the proposed regulations will drop substantially.

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### 5. Description of the agency's baseline:

The baseline used for this analysis is the anticipated conduct of underground gas storage facility operators to comply with existing regulatory requirements, administrative orders of the State Oil and Gas Supervisor, and the new Senate Bill 887 legislative mandates put in place January 1, 2017, absent any requirements specifically attributable to the proposed regulations. This baseline was then compared to the economic impact of compliance with the proposed regulations, as modeled using RIMS II multipliers (2007/2013) provided by the U.S. Bureau of Economic Analysis, utilizing inputted estimates of direct costs specifically attributable to the proposed regulations.

### 6. For each alternative that the agency considered (including those provided by the public or another governmental agency), please describe:

- a. All costs and all benefits of the alternative
- b. The reason for rejecting alternative

Alternative 1 is more strenuous than the proposed regulations, requiring all underground gas storage wells to be equipped with SCSSVs within five years of implementation. Estimated costs are an increase in \$82 million for the years 2017-21 above the proposed regulation estimated costs. The benefit of Alternative 1 relative to the proposed regulations would be extra protection against the risk of uncontrolled gas leaks caused by catastrophic damage to wellhead equipment. Alternative 1 was rejected because it fails to tailor well remediation requirements to circumstance-specific analysis, leading to cost-ineffective and potentially counterproductive risk mitigation results. The proposed regulations allow case-by-case evaluations that better prioritize remediation requirements according to actual risk.

Alternative 2 focuses on a less strenuous mechanical integrity testing regime. Alternative 2 requires operators to conduct corrosion pressure and electromagnetic casing tests once every five years instead of once every two years as recommended in the proposed regulations. Under Alternative 2, over a five year period the affected industry would save approximately \$888 million compared to the proposed regulations due to the reduced frequency of required testing. While this would benefit industry by reducing costs, the alternative was rejected because it would be substantially less successful in achieving risk mitigation objectives identified by Division as necessary to best protect the interests of public health, safety, and the wise use of natural resources. Inherent to proper gas storage facility operation is the need to periodically verify the mechanical integrity of wells. This verification is best accomplished by a series of tests to examine the condition of the well casing, well tubing, and the attached pipelines. Frequent testing allows a corrosion "rate" to be more accurately assessed. This gives operators and the Division a better data set to evaluate long-term well damage and identify where well casing will need to be repaired or replaced, rather than less frequent testing that discovers sudden damage or an ongoing leak. The testing regime in the proposed regulations was developed by the Division in consultation with independent experts, including scientists from the National Labs system. The Division believes the testing frequency in the proposed regulations is balanced to protect safety at a reasonable cost.

### 7. A description of the methods by which the agency sought public input. (Please include documentation of that public outreach).

From February 17, 2016 through March 18, 2016, the Division undertook a public outreach process to solicit focused input from the public on how best to accomplish improved safety regulation of underground gas storage facilities. As part of that outreach, the Division provided a summary of its regulatory goals regarding underground gas storage, along with a targeted set of questions, to a broad range of stakeholders that included oil and gas operators, environmental groups, and members of the general public who had previously expressed an interest in being involved with rulemaking related to the Underground Injection Control program.

On July 8, 2016, the Division publicly released pre-rulemaking draft regulations (a discussion draft) and held a public comment period for the purpose of receiving additional input on the proposed regulations. This public comment period ended on August 22, 2016.

The Division also conducted two public workshops to receive input from interested parties, in Sacramento (August 9, 2016) and in Woodland Hills (August 11, 2016).

Additionally, the Department directly contacted representatives of all underground gas storage operators in the state to solicit estimates of compliance costs for use in analyzing the economic impact of the proposed regulations.

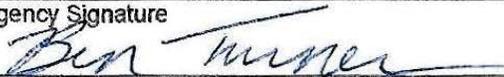
### 8. A description of the economic impact method and approach (including the underlying assumptions the agency used and the rationale and basis for those assumptions).

In order to estimate the economic impacts associated with the regulations, Division staff identified a list of activities likely to be necessary for underground gas storage facility operators to comply with the requirements of the proposed regulations, and assumed these activities would be representative of the direct costs of the proposed regulations to affected operators. To develop the direct cost estimates, Division staff surveyed all underground gas storage facility operators in the state to obtain their individual reported cost of performing the identified compliance activities, and then used the average of these reported costs for each compliance activity as the representative direct cost value of that activity.

After the direct cost estimates were determined, indirect costs and economic impacts were derived using a computational general equilibrium model of the California economy provided by the U.S. Bureau of Economic Analysis and known as Regional Input-Output Modeling System II (RIMS II). The RIMS II model (2007/2013) generates year-by-year estimates of the total regional effects of a policy or set of policies. Industries that would be affected by the gas storage regulations with their corresponding North American Industry Classification System (NAICS) numbers were identified with their corresponding RIMS II Type I multipliers in the analysis and assessment. The RIMS II model is designed to be regionally specific, and produces a set of multipliers representing output that occurs in affected industries delivered to final demand.

The derived impacts considered in this analysis were determined under the assumption that the proposed regulations would not cause any adjustments to the price of natural gas. Prices for natural gas utility services are regulated by the California Public Utilities Commission as a matter of state policy.

Agency Signature



Date

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