

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191 and 192

[Docket No. PHMSA–2016–0016; Amdt. Nos. 191-24; 192-122]

RIN 2137-AF22

Pipeline Safety: Safety of Underground Natural Gas Storage Facilities

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Interim Final Rule.

SUMMARY: This interim final rule (IFR) revises the Federal pipeline safety regulations to address critical safety issues related to downhole facilities, including wells, wellbore tubing, and casing, at underground natural gas storage facilities. This IFR responds to Section 12 of the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016, which was enacted following the serious natural gas leak at the Aliso Canyon facility in California on October 23, 2015. This IFR incorporates by reference two American Petroleum Institute (API) Recommended Practices (RP): (1) API RP 1170, “Design and Operation of Solution-mined Salt Caverns used for Natural Gas Storage,” issued in July 2015, and (2) API RP 1171, “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs,” issued in September 2015.

DATES: Effective Date: This IFR is effective **[INSET DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

COMMENTS: Comments must be received by **[INSERT DATE 60 DAYS FOLLOWING DATE OF PUBLICATION]**.

ADDRESSES: You may submit comments identified by the docket number PHMSA-2016-0016 by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Fax: 1-202-493-2251.
- Mail: Send comments to Docket Operations, M-30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.
- Hand Delivery or Courier: Bring comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: If you submit your comments by mail, submit two copies. To receive confirmation that PHMSA received your comments, include a self-addressed stamped postcard.

Note: Comments are posted without changes or edits to <http://www.regulations.gov>, including any personal information provided. There is a privacy statement published on <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Kenneth Lee, by telephone at 202-366-2694, by fax at 202-366-4566, or by mail at U.S. DOT, PHMSA, 1200 New Jersey Avenue, SE, PHP-80, Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:

I. Background

A. Underground Natural Gas Storage Facilities

According to the Energy Information Administration,¹ there are approximately 400 interstate and intrastate underground natural gas storage facilities currently in operation in the United States, with more than four trillion cubic feet of natural gas working capacity. Three hundred twenty-six (326) of those facilities store natural gas in depleted hydrocarbon reservoirs, while the remainder store natural gas in salt caverns (31) and depleted aquifers (43). The recent failure of Well SS25 at the Aliso Canyon facility, an intrastate regulated facility located in Southern California, and its aftermath have revealed the need for minimum federal standards for the wells and downhole facilities located at both intrastate and interstate underground storage

¹ The Energy Information Administration is part of the U.S. Department of Energy. *See* http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/undrgrnd_storage.html

facilities. The promulgation of minimum federal standards would, for the first time, establish safety standards under the Pipeline Safety Regulations at Title 49, CFR Parts 191 and 192, for the currently unregulated downhole facilities at 197 interstate underground gas storage facilities and provide consistent, minimum standards for the remaining 203 intrastate facilities.

While there are DOT safety regulations in Part 192 that apply to the surface piping at these facilities, there are no regulations in Part 192 covering downhole facilities—such as wells, wellbore tubing, and casing—or the operations, maintenance, integrity management, public awareness, and emergency response activities associated with these downhole facilities. Therefore, even if all states had effective regulations for their intrastate facilities, 197 interstate facilities (that cumulatively have several thousand individual wells) would not be subject to any safety regulatory requirements with respect to their downhole facilities in the absence of federal action. In the event of a well failure, the interstate underground storage facilities could have consequences of a similar or even greater magnitude as the Aliso Canyon intrastate facility. The pipe at these facilities is threaded, rather than welded like a pipeline, making the pipe more susceptible to breaks. A broken pipe at any facility would allow gas to escape at a much higher rate and would be more likely to catch fire, leading to a greater risk to life and property. However, these underground storage facilities are currently not required to meet any part 192 design, operations, or maintenance standards to ensure the integrity and safety of these wells and downhole facilities.

Most of the states that regulate underground gas storage have agencies separate and apart from the PHMSA-certified agency that regulates intrastate pipeline safety. Under the interim final rule, all intrastate transportation-related underground gas storage facilities will become subject to minimum federal safety standards and be inspected either by PHMSA or by a state

entity that has chosen to expand its authority to regulate these facilities under a certification filed with PHMSA pursuant to 49 U.S.C. 60105.

Because state regulation of intrastate facilities is done through an annual certification under 49 U.S.C. 60105 and involves state adoption of the minimum federal standards, federal regulations are needed as the basis for effective state regulation as well. While many states have underground storage regulations with material integrity testing components to ascertain a well's condition, most states do not have specific and consistent regulations that include operating procedures and remediation for operations, maintenance, integrity demonstration and verification, monitoring, threat and hazard identification, assessment, remediation, site security, emergency response and preparedness, and recordkeeping requirements. The minimum federal standards will set baseline fitness for service requirements for all interstate and intrastate facilities and will allow state regulators to go above and beyond the minimum federal standards to require additional or more stringent safety safeguards at intrastate facilities. In other words, the regulation of intrastate underground gas storage facilities operates in the same manner as the existing federal-state regulatory scheme for gas and hazardous liquid pipelines.

After issuance of the IFR, PHMSA will further evaluate the need for any additional regulatory requirements for underground storage facilities. PHMSA encourages persons to participate in this rulemaking by submitting comments containing relevant information, data, or views. We will consider all comments received on or before the closing date for comments in finalizing this rule. We will consider late filed comments to the extent practicable.

B. Aliso Canyon and Other Incidents

On October 23, 2015, Southern California Gas Company's (SoCal Gas) Aliso Canyon Well SS25 developed a natural gas leak near an area known as Porter Ranch in Los Angeles, CA.

The well leak is believed to have originated from the subsurface (downhole) well casing. The well was drilled in 1953 and converted to natural gas storage in 1972. On January 6, California Governor Jerry Brown issued a proclamation declaring the Aliso Canyon incident a state emergency. Before the leak was finally stopped (cement plugged), approximately 5.7 billion cubic feet (BCF) of natural gas had been released into the atmosphere, a volume equivalent to the yearly greenhouse gas emissions of approximately a half-million cars. PHMSA estimates the social costs of the climate-related impacts from these emissions at approximately \$123 million (with a range of \$55 million to \$344 million, depending on the discount rate). Additional operator-reported costs were approximately \$763 million as of November 2, 2016. Over 5,790 households (families) were relocated due to the co-release of natural gas odorant (mercaptans), according to the Aliso Canyon Incident Command briefing report issued on February 16, 2016.

The Aliso Canyon facility has 115 storage wells, and is the second-largest storage facility of its kind in the United States. It is an intrastate facility that is subject to the authority of the California Public Utility Commission (CPUC), which is certified by PHMSA to regulate the intrastate gas pipeline facilities in California in accordance with 49 U.S.C. 60105.

While the root cause of the failure of Well SS25 is the subject of ongoing investigations and assessments, the serious nature of the harm suffered by the public is widely recognized. The initial investigations by the CPUC and its partner agencies indicate that the risk of potential harm to the public could be addressed, at least in part, through the incorporation by reference of API RPs 1170 and 1171 into the pipeline safety regulations and requiring that underground gas storage facilities adopt minimum procedures for operations, maintenance, integrity demonstration and verification, monitoring, threat and hazard identification, assessment, and anomalies that affect safety.

The Aliso Canyon incident is not the only high-profile underground gas storage incident to occur in recent years. On January 17 and 18, 2001, a wellbore failure at an underground storage facility near Hutchinson, Kansas, caused a natural gas leak from a gas storage field. The gas traveled approximately nine miles underground and exploded under some buildings, killing two people in a mobile home park and destroying two businesses in downtown Hutchinson. Approximately 143 million cubic feet of natural gas escaped from the storage field.²

Similarly, in 2004, a well at an underground storage facility in Liberty County, TX, malfunctioned, resulting in a fire that burned for six and one half days and released approximately 6 BCF of natural gas.³ These incidents have also resulted in heightened awareness from governmental officials and the general public about the safety of these facilities, including the potential for explosions and uncontrolled burns, and the potentially immense environmental damage associated with the uncontrolled release of natural gas into the atmosphere from the failure of even a single one of the thousands of wells at the underground gas storage facilities across the country.

In addition to threatening public safety and causing disruptive evacuations of large areas, when a natural gas storage well such as Well SS25 fails, the very process of attempting a “well kill,” which is intended to stop the flow of natural gas from the well by pumping a weighted fluid

² Allison, M. Lee, 2001, The Hutchinson Gas Explosions: Unraveling a Geologic Mystery, Kansas Bar Association, 26th Annual KBA/KIOGA Oil and Gas Law Conference, V1, pg 3-1 to 3-29. http://www.kgs.ku.edu/Hydro/Hutch/Refs/Hutch_KBA_final.pdf

³ October 7, 2004 news release by Duke Energy Partners, owner of the facility in 2004. <https://www.duke-energy.com/news/releases/2004/Oct/2004100702.asp>

down the wellbore, puts company workers and first responders directly in life-threatening situations.⁴ Fortunately, an errant spark did not ignite the gas at Aliso Canyon, but well failures often involve such ignition, which can result in flame jets that can be seen from many miles away and take weeks to extinguish.

Based on its field experience and knowledge of the industry, PHMSA is aware that many of the existing underground natural gas storage facilities across the country have wells with characteristics similar to Well SS25. Many wells, like Well SS25, are over 50 years old and were originally designed for petroleum production, where the flow of crude oil from underground depths actually *reduced* the pressure on the casing pipe as it flowed toward the ground surface. Natural gas storage, in contrast, often has a much lower pressure drop when flowing to the ground surface. These converted facilities also were originally constructed using certain techniques that are different from typical pipeline industry construction, such as having pipe sections joined by threaded coupling, not welds.⁵ They also generally do not have a corrosion-resistant internal or external protective coating, which is required for all new pipelines.

The combined effects of a lack of corrosion-resistant coating, no effective cathodic protection, and a corrosive flow product that includes a mixture of water and other corrosive components presents a serious risk of leakage at some point in the life span of these wells. These

⁴ PHMSA maintains “Underground Natural Gas Storage” informational web pages, which explain underground storage operations. These pages are available to the public at <http://primis.phmsa.dot.gov/ung/index.htm>

⁵ Threaded casing pipe connections have less strength than a welded connection and are more prone to corrode during the life of the casing pipe.

risks can be significantly mitigated by an effective operations and maintenance program that includes reassessments and preventive and mitigation measures based upon unique conditions and threats to the well casing, tubing, and wellhead.

Most underground natural gas storage wells operate at pressures ranging from 200 pounds per square inch (psi) to about 4500 psi. By comparison, the maximum U.S. interstate transmission pipeline pressures are about 2000 psi, with most below 1000 psi. Underground storage wells also lack consistent standards for design safety factors to contain the well pressure, which provides a margin of yield strength. If a given grade of steel would deform or yield at 1.00 of its specified minimum yield strength, a safety margin of 25% would equate to a 0.80 design factor. For example, a pipeline generally has a design factor of 0.72 or less (safety margin of 39%), whereas a well casing may not have any safety factor. This means that corrosion of well casing pipe used with no safety factor would need the maximum operating pressure of the casing pipe to be reduced in order to “maintain safety” whenever a loss of wall thickness was found in the casing pipe.

Preventing well-failure incidents is not only a matter of public safety and protecting the environment from methane leaks and catastrophic failures, such as those that have occurred at Aliso Canyon, CA; Liberty County, TX; and Hutchinson, KS, but is also a key part of ensuring the reliable transportation of the nation’s energy supplies. If storage facility operators need to rapidly draw down their supplies of gas to reduce the leak rate at a failed well or experience complete interruptions of operations, the public may suffer serious natural gas supply outages. When large underground natural gas storage facilities such as Aliso Canyon fail, the interruption in supply can have a major impact on the availability of heating fuel in colder climates and electricity in hot summer months. Businesses, hospitals, and governmental facilities also rely on

the supply and distribution of gas as well as the energy produced by gas turbine electric power plants to keep the economy moving.

C. PHMSA Actions

Recently, PHMSA, along with the Federal Energy Regulatory Commission (FERC), five state regulatory agencies, and numerous industry representatives, participated in the development of two American Petroleum Institute (API) Recommended Practices (RP): API RP 1170, “Design and Operation of Solution-mined Salt Caverns used for Natural Gas Storage” (July 2015), and API RP 1171, “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs” (September 2015).⁶ Both API RPs 1170 and 1171 recommend that operators of underground natural gas storage facilities implement a wide range of current recommended practices, including construction, maintenance, risk-management, and integrity-management procedures.

On February 5, 2016, PHMSA issued Advisory Bulletin ADB–2016–02 (81 FR 6334).⁷ The advisory bulletin recommended that operators of underground natural gas storage facilities review their operating, maintenance, and emergency response activities to ensure that the integrity of underground natural gas storage facilities is properly maintained. This bulletin informed operators about certain recommended practices and urged operators to take all

⁶Available at: <http://publications.api.org/IBR-Documents-Under-Consideration.aspx>

⁷ <http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Advisory%20Notices/2016-02228.pdf>

necessary actions to prevent and mitigate breaches of integrity, leaks, or failures at their underground natural gas storage facilities, to ensure the safety of the public and operating personnel, and to protect the environment. Operators were advised to:

- 1) verify that the pressure required to inject intended natural gas volumes does not exceed the design pressure limits of the reservoir, wells, wellheads, piping, casing, tubing, or associated facilities;
- 2) monitor all wells for the presence of annular gas or liquids on a periodic basis;
- 3) inspect the wellhead assembly and attached pipelines for each of the wells used;
- 4) conduct periodic functional tests of all surface and subsurface safety valve systems and wellhead pipeline isolation valve(s) for proper function and ability to shut-off or isolate the well and remediate improperly functioning valves;
- 5) perform risk assessments in a manner that reviews, at a minimum, the API RP 1171 criteria to evaluate the need for subsurface safety valves on new, removed, or replaced tubing strings or production casing;
- 6) conduct ongoing assessments for the verification and demonstration of the mechanical integrity of each well and related piping and equipment;
- 7) develop and implement a corrosion monitoring and integrity evaluation program for piping, wellhead, casing, and tubing including the usage of appropriate well log evaluations;
- 8) develop and implement procedures for the evaluation of well and attendant storage facilities that include analysis of facility flow erosion, hydrate potential, individual facility component capacity and fluid disposal capability at intended gas flow rates and pressures, and analysis of the specific impacts that the

intended operating pressure range could have on the corrosive potential of fluids in the system;

- 9) identify potential threats and hazards associated with operation of the underground storage facility;
- 10) perform ongoing verification and demonstration of the integrity of the underground storage reservoir or cavern using appropriate monitoring techniques for integrity changes, such as the monitoring of pressure and periodic pressure surveys, inventory (injection and withdrawal of all products), product levels, cavern subsidence, and the findings from adjacent production and water wells, and observation wells;
- 11) ensure that emergency procedures are reviewed, conducted, and updated at least annually; and
- 12) ensure that records of the processes, procedures, assessments, reassessments, and mitigation measures are maintained for the life of the storage well.

On July 14, 2016, PHMSA held a public meeting on the topic of potentially extending federal pipeline safety regulations to include transportation-related underground gas storage facilities. The discussion covered both interstate and intrastate storage facilities, including wells and wellbore tubing. PHMSA heard from a diverse group of stakeholders, including state and federal regulators, emergency responders, and residents of the Aliso Canyon area who were directly impacted by the 2015 incident. PHMSA also heard from facility operators and technology experts. Based on its knowledge of storage well facilities across the country, available information concerning the Aliso Canyon accident, and other aspects of the record

developed at this public meeting, PHMSA has concluded that the two recently adopted industry recommended practices, developed through the API consensus process, should be incorporated into Part 192 of the federal pipeline safety regulations as an urgent first step in preventing similar incidents in the future. If an operator fails to take any measures recommended by API RP 1170 or 1171, then it would need to justify in its written procedures why the measure is impracticable and unnecessary.

Rapid incorporation of API RP 1170 and 1171 into PHMSA's regulations will require operators to assess the operational safety of their underground natural gas storage facilities and document the implementation of identified safety solutions. PHMSA and its state partners will monitor operators' implementation of the requirements in the interim, and once the requirements become effective PHMSA will begin inspecting facilities to enforce the requirements. Based upon facility inspections by PHMSA and its state partners and input from the public, PHMSA plans to continue to monitor and evaluate the safety of underground storage facilities and plans to incrementally build on the framework of the IFR as necessary in order to ensure that operators fully address the safety issues presented by underground natural gas storage.

II. Justification

A. PHMSA Authority and Regulatory History

Under 49 U.S.C. 60101 and 60102, PHMSA sets minimum safety standards for the transportation of natural gas, which includes underground natural gas storage facilities incidental to transportation. While PHMSA's existing Part 192 regulations cover much of the surface piping up to the wellhead at underground natural gas storage facilities served by pipeline, PHMSA has not previously issued regulations for the "downhole" portion of these facilities. Accordingly, the only specific regulatory requirements for operators to inspect the safety of their

underground natural gas storage facility wellheads, casings, and tubing strings are state standards that apply to intrastate facilities. Not all states have adopted safety standards for underground storage facilities, and while in some cases states that are certified by PHMSA to regulate their intrastate gas pipeline facilities can and have issued state standards for these wells and wellbores, the absence of a minimum federal standard has led to a regulatory gap for the wells and downhole pipe and tubing for the interstate facilities and a lack of adequate, consistent standards for all intrastate facilities.

PHMSA considered regulating the wells and downhole pipe and tubing at underground storage facilities more than 20 years before the Aliso Canyon incident. In 1994, PHMSA's predecessor agency, the Research and Special Programs Administration (RSPA) held a public meeting (Docket PS-137; 59 FR 30567; June 14, 1994) on underground storage of gas and hazardous liquids, in order to gather information on the extent of then-current regulation and to determine what action RSPA should take on underground storage regulation. At the meeting, representatives of industry, state governments, and the public presented statements on safety issues, industry practices, the status of state underground storage regulations, and the need for additional federal regulations. While different views were expressed on whether RSPA should begin to regulate the wells and downhole pipe and tubing, RSPA's regulation of the surface piping at these facilities appeared sufficient and further federal regulatory action on the wells was not seen as an immediate need. At that time, however, no widely accepted industry standards existed for the underground storage of natural gas. In addition, much of the underground storage well piping and components, which do not have external coatings and cathodic protection, have aged another 22 years since RSPA conducted the 1994 review. Finally, there have been three significant accidents in the last 15 years, including Aliso Canyon.

Taken together, these are compelling factors warranting regulatory action by PHMSA, as discussed more fully in Section D below.

On June 22, 2016, the “Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016” (the Act), became law (Pub. L. 114-183). Section 12 of the Act mandates that PHMSA issue regulations for underground gas storage facilities within two years from the date of enactment and that PHMSA “shall, to the extent practicable—

- (1) Consider consensus standards for the operation, environmental protection, and integrity management of underground natural gas storage facilities;
 - (2) Consider the economic impacts of the regulations on individual gas customers;
 - (3) Ensure that the regulations do not have a significant economic impact on end users;
- and

(4) Consider the recommendations of the Aliso Canyon natural gas leak task force established under section 31” of the Act.

The Act further provides that PHMSA may allow state authorities to continue exercising their traditional role in the oversight of intrastate gas pipeline facilities and gas transportation, including underground gas storage facilities, in the same manner through an annual certification process under 49 U.S.C. 60105 and the interstate agent provisions of 49 U.S.C. 60106. This mandate reflects the seriousness with which Congress has focused on underground storage facility safety following the Aliso Canyon accident. It also reflects Congress’ desire for states to maintain their role as strong federal partners in protecting the safety of underground gas storage facilities. While the RPs do include material that is relevant to determining whether a given geologic formation or depleted reservoir is suitable for gas storage use, permitting is not a PHMSA function. PHMSA is not authorized to prescribe the location of an underground gas

storage facility or to require the Secretary of Transportation's permission to construct such a facility. Therefore, Congress has preserved the traditional permitting role of the states in the case of intrastate facilities and the Federal Energy Regulatory Commission in the case of interstate facilities.

This latest accident has made PHMSA and other stakeholders, including the public, acutely aware of both the safety and environmental hazards of underground gas storage. Moreover, there is generally a greater awareness on the part of the public of greenhouse gas emissions. The external cost of not regulating such emissions must now be considered by agencies, including PHMSA, as part of executive branch policy governing agency regulatory actions.

Section 31 of the PIPES Act also created the Aliso Canyon Natural Gas Leak Task Force (Task Force), co-chaired by the U.S. Departments of Energy (DOE) and DOT. The Task Force has provided a mechanism for interagency consultations that has included the U.S. Departments of Health and Human Services, Interior, Commerce, the Environmental Protection Agency, and the Federal Energy Regulatory Commission. The Task Force Report, entitled "Ensuring Safe and Reliable Underground Natural Gas Storage," was issued by DOT and DOE on October 18, 2016 (Report). PHMSA worked closely with DOE in preparing the Report, which has informed PHMSA's development of the IFR.

Widely accepted industry standards now exist with the recent development of API RPs 1170 and 1171, both of which were finalized about one year ago. API RPs 1170 and 1171, developed over the course of more than 4 years, are suitable for mandatory incorporation-by-reference into the operating procedures of these facilities, at least as a first step to address safety and environmental concerns with underground storage. This avenue would provide an

immediate and reasonable means by which PHMSA would begin to regulate the downhole portions of underground storage of natural gas and respond to emerging risks in the area of underground gas storage, while at the same time implementing section 31 of the PIPES Act.

B. Industry and Public Support for Rulemaking

The recent history of serious underground storage incidents, including the Aliso Canyon incident, has made PHMSA and the public acutely aware of both the safety and environmental hazards of underground natural gas storage. Representatives of both industry and the public have recently requested that PHMSA promulgate minimum federal regulations.

On January 20, 2016, the Interstate Natural Gas Association of America (INGAA), a major industry trade association representing the vast majority of interstate natural gas pipeline transmission companies in the United States and a participant in the development of API RPs 1170 and 1171, petitioned PHMSA to incorporate both API RPs by reference into 49 CFR Part 192. In the petition, INGAA supported federal safety regulation and oversight of natural gas storage facilities over the current patchwork of state regulations.

That petition, along with a February 11, 2016, letter from INGAA, urged PHMSA to adopt API RPs 1170 and 1171 as quickly as possible in order to put into place a set of consensus standards for operators of underground storage facilities to follow in assessing their facilities and establishing procedures to ensure safety. INGAA, the American Petroleum Institute (API), and the American Gas Association (AGA) have all reached out to PHMSA in the aftermath of the Aliso Canyon incident and expressed support from their member companies for the rapid adoption of the API RPs. API recommended practices are frequently adopted by a majority of

the industry, and PHMSA has previously adopted other industry consensus standards into the pipeline safety regulations.

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113) directs federal agencies to use voluntary consensus standards in lieu of government-written standards whenever possible. Voluntary consensus standards are standards developed or adopted by voluntary bodies that develop, establish, or coordinate technical standards using agreed-upon procedures. In addition, Office of Management and Budget (OMB) issued OMB Circular A-119 to implement section 12(d) of Public Law 104-113 relative to the utilization of consensus technical standards by federal agencies. This circular provides guidance for agencies participating in voluntary consensus standards bodies and describes procedures for satisfying the reporting requirements in Public Law 104-113.

API elected to issue RPs 1170 and 1171 in the form of “recommended practices,” as opposed to “standards.” This presented PHMSA with the challenge of dealing with concerns about the enforceability of these practices. Accordingly, as part of incorporating the API RPs by reference, PHMSA is adopting the non-mandatory provisions of API RPs 1170 and 1171 in a manner that would make them mandatory (i.e., API provisions containing the word "should" or other non-mandatory language will be considered mandatory), except that operators will be permitted to deviate from the API RPs if they provide a sufficient technical and safety justification in their program or procedural manuals as to why compliance with a provision of the recommended practice is not practicable and not necessary for the safety of a particular facility. PHMSA will evaluate these justifications as part of its compliance inspection process, taking into account whether the operator’s procedures reflect sound engineering principles and achieved acceptable performance as demonstrated by annual reports and incident data. PHMSA will

incorporate lessons learned from these compliance reviews of underground storage facility operations into inspection protocols and inspector training programs.

State pipeline regulators also support the issuance of underground gas storage facility regulations by PHMSA. In 2010, the National Association of Pipeline State Representatives (NAPSR), which represents PHMSA's state pipeline regulatory partners, submitted a resolution to PHMSA supporting underground natural gas storage facility regulations.⁸ PHMSA's state partners are a vital element in helping to protect the integrity of the nation's gas transmission and distribution systems. PHMSA's expanded role in underground natural gas storage facilities will produce a safer and more environmentally sound system.

C. Good Cause Basis for an IFR

Under the Administrative Procedure Act (APA) and the Federal Pipeline Safety Law, PHMSA may issue an IFR when there is "good cause" to find that the notice-and-comment process would be "impracticable, unnecessary, or contrary to the public interest," and the agency incorporates that finding and a brief statement of the reasons supporting the finding in the rulemaking document. See 5 U.S.C. 553(b)(3)(B), and 49 U.S.C. 60102(b)(6)(C). PHMSA's pipeline safety regulations similarly recognize this exception at 49 CFR 190.311. However, PHMSA may modify aspects of the IFR issuing the Final Rule after receiving and reviewing

⁸ NAPSR Resolution 2010-03 AC.2. The NAPSR resolution contained recommendation including the development of regulations to assess the integrity of existing wellbores used to store natural gas and the safety of operations for geologic formations used to store natural gas. <http://www.napsr.org/SiteAssets/NAPSR-Resolutions-Open/201003%20Storage%20Field%20Wellbores%20Resolution.pdf>.

public comments, as well as any other relevant documents. The good cause exception allows PHMSA to respond to safety risks quickly when delay would jeopardize the public interest through risks to public safety and the environment.

PHMSA finds that good cause exists to proceed with this IFR. Normal notice and comment procedures are impracticable and not in the public interest because PHMSA knows, as evidenced by the release at Well SS25 in Aliso Canyon, that existing facilities operating without minimum federal PHMSA safety standards are prone to corrosion due to the combined risks of a lack of corrosion-resistant coating, no effective cathodic protection, and a corrosive flow product that includes a mixture of water and other corrosive components. The RP's have sections concerning integrity monitoring methods for safety threats from corrosion of the wellbore piping and wellhead. The other 114 wells at the Aliso Canyon facility are currently being evaluated for integrity deficiencies. However, the concerns about well integrity are not limited to Aliso Canyon. They are national in scope. The lack of applicable PHMSA federal regulations for the downhole facilities presents an immediate threat to safety, public health, and the environment because there is currently no effective means for the agency to ensure compliance with safety standards at underground natural gas storage facilities.

Given the nature of the safety and environmental threat posed by the current lack of federal regulations for underground gas wells, any delay in adopting the API recommended practices would be impracticable and contrary to the public interest. The failure of a single well can cause substantial environmental harm and put populated areas at risk. The Aliso Canyon facility, for example, was located near a densely populated area and resulted in approximately 5,790 households being relocated due to the co-release of natural gas odorant (mercaptans), according to the Aliso Canyon Incident Command briefing report issued on February 17, 2016.

Further, while the full extent of the damage caused by the Aliso Canyon incident will not be known until much later, as of June 30, 2016, SoCalGas had made provisions for expenses of nearly \$763 million to control the release, monitor air emissions, relocate residents, and cover its legal and other expenses (Sempra, 2016).⁹ These costs are those incurred by Sempra and do not include additional costs to society as a result of the release.¹⁰ For example, this figure does not include \$123 million in estimated social costs (ranging from \$55 million to \$344 million) from the climate impacts of approximately 5.7 BCF of gas released into the atmosphere.¹¹

There is also a major public interest in preventing supply interruptions for hundreds of thousands of consumers who need gas to heat their homes. Potential interruptions in the supply of gas can also impact the reliable operation of gas turbine electrical power plants that power businesses and the U.S. economy. The Aliso Canyon incident highlights the need for explicit PHMSA standards relating to the safety of these facilities, and as noted above many of the

⁹ Of the \$763 million, Sempra Energy notes “approximately 70% is for the temporary relocation program (including cleaning costs and certain labor costs) and approximately 20% is for efforts to control the well, stop the leak, stop or reduce emissions, and the estimated cost of the root cause investigation. The remaining amount includes legal costs incurred to defend litigation, the value of lost gas, the costs to mitigate the actual natural gas released and other costs. Cost estimate excludes any potential damage awards, restitution and any civil, administrative or criminal fines and other penalties that may be imposed, as well as any additional costs to clean homes and future legal costs necessary to defend litigation, among other potential costs, as we cannot estimate what amounts, if any, will be incurred for such matter.” (Sempra Energy, 2016).

¹⁰ On August 17, 2016, SoCal Gas provided PHMSA with a supplemental data response regarding Aliso Canyon remediation costs as of August 15, 2016.

¹¹ The range reflects different assumptions on the discount rate used in estimating the social cost of methane. See Section 6 in RIA for details.

approximately 400 existing facilities across the country have wells that have similar characteristics to Well SS25.

Upon the effective date of the Final Rule, PHMSA will move expeditiously to institute a program for identifying, inspecting and enforcing the new standards for all interstate facilities. Implementation at the state level will also involve time for states to update their state codes and in some cases certify additional agencies. Conducting a full notice and comment rulemaking proceeding prior to the incorporation of the API RPs would potentially leave the public unprotected and without any safety standards for underground natural gas storage for months or years to come. It would also leave PHMSA without any enforceable regulations for interstate underground natural gas storage wells and downhole facilities during the rulemaking process. However, in the absence of advance public notice and comment, PHMSA is providing for a post-promulgation comment period and will consider subsequent amendments or modifications in the final rule based on the comments received.

The rapid incorporation of API RPs 1170 and 1171 into Part 192 provides PHMSA with an immediate tool to begin inspection and enforcement for interstate underground storage facilities and provides the foundation for states to begin adopting the minimum federal standards for intrastate underground storage facilities for prevention and response to future incidents. PHMSA understands that implementation at the state level will involve time for states to update their state codes and in some cases certify additional agencies, but the incorporation of the API RPs into the Part 192 regulations will not prevent states from adopting additional or more stringent regulations on underground gas storage facilities, provided they are compatible with the new minimum federal standards.

D. The American Petroleum Institute Recommended Practices 1170 and 1171

PHMSA reviewed API RPs 1170 and 1171 for requirements covering design, construction, material, testing, commissioning, reservoir monitoring, and recordkeeping for existing and newly constructed underground natural gas storage facilities. API RPs 1170 and 1171 have operations and maintenance (O&M) procedures and practices for newly constructed and existing underground natural gas storage facilities that include operations, maintenance, threat identification, monitoring, assessment, site security, emergency response and preparedness, training, and recordkeeping. The standards are available for public viewing in a read-only format at <http://publications.api.org/IBR-Documents-Under-Consideration.aspx>.

API RP 1170, “Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage, First Edition” provides the functional recommendations for salt cavern facilities used for natural gas storage service and covers facility geomechanical assessments, cavern well design and drilling, solution mining techniques and operations, including monitoring and maintenance practices. This RP is based on the accumulated knowledge and experience of geologists, engineers, and other personnel in the petroleum and gas storage industries and promotes public safety by providing a comprehensive set of design guidelines. This RP recognizes the nature of subsurface geological diversity and stresses the need for in-depth, site specific geomechanical assessments with a goal of long-term facility integrity and safety. This RP includes the cavern well system from the emergency shutdown (ESD) valve, through the well, including wellhead, casing, tubing, cement, and completion techniques, to the design and construction of the cavern itself.

API RP 1171, “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs, First Edition” applies to natural gas storage in depleted oil and gas reservoirs and aquifer reservoirs, and focuses on storage well, reservoir, and fluid management for functional integrity in design, construction, operation, monitoring, maintenance, and documentation practices. Storage design, construction, operation, and maintenance include activities in risk management, site security, safety, emergency preparedness, and procedural documentation and training to embed human and organizational competence in the management of storage facilities. This RP embodies historical knowledge and experience and emphasizes the need for case-by-case and site-specific conditional assessments. This RP applies to both existing and newly constructed facilities. This document recommends that operators manage integrity through monitoring, maintenance, and remediation practices and apply specific integrity assessments on a case-by-case basis.

PHMSA has also added reporting requirements for underground natural gas storage facilities in 49 CFR Part 191. Four types of reports are required from operators for underground natural gas storage facilities: annual reports, incident reports, safety-related condition reports, and National Registry information. PHMSA is requiring this information because there currently are no annual submittal requirements for underground natural gas storage facilities in PHMSA’s regulations that include information about the wells and reservoirs. The first type of report noted is an “annual report,” which is needed to collect operator name, address and contact information; location of the facility; number of wells including injection, withdrawal and observation wells; and facility operational information such as gas storage volumes, gas storage pressures, well depths, gas injection and withdrawal rates, and maintenance information that is conducted to ensure the safety of the facility. The second type of report is an “incident report” that is needed

for operator reporting of an event that involves a release of gas, death or personal injury necessitating in-patient hospitalization, estimated property damage of \$50,000 or more, or unintentional estimated gas loss of three million cubic feet or more. The third type report noted is a “safety-related condition report” that is used to report findings that compromise the safety of the well or reservoir such as casing or tubing corrosion, cracks or other material defects, earthquakes, leaks, or anything that compromises the structural integrity or reliability of an underground natural gas storage facility. Lastly, National Registry information is needed by PHMSA to identify the facility operator that has primary responsibility for operations through an assigned Operator Identification Number (OPID).

API elected to publish 1170 and 1171 in the form of “Recommended Practices,” as opposed to “Standards.” This presented PHMSA with the problem of how to ensure that the industry practices therein were enforceable as opposed to mere guidance about what operators “should” do. Accordingly, PHMSA is making the API RPs mandatory out of concern that failure to do so would weaken many important safety provisions. However, PHMSA will allow operators to vary from the API RPs when compliance with a provision of the recommended practice is not practicable and not necessary for safety with respect to specified underground storage facilities or equipment as long as they document the technical and safety justification for making such determinations. PHMSA or its state partner would review such justifications during compliance inspections and utilize our range of enforcement tools as necessary to ensure variances are not utilized inappropriately. In addition, PHMSA is able to issue advisory bulletins or otherwise notify operators advising them of variances that have frequently been deemed objectionable and should be avoided under most circumstances. This approach has worked well in pipeline regulation involving incorporation by reference. Therefore, we do not believe this

manner of adoption will be a significant departure from expected industry practices. In addition, operators may submit an application for a special permit under 49 CFR § 190.341 that would waive a given requirement or extend a deadline applicable to its facility if PHMSA determined that such waiver would not be inconsistent with safety.

III. Rulemaking Analysis and Notices

A. Statutory/Legal Authority for This Rulemaking

This IFR is published under the authority of the Federal Pipeline Safety Law (49 U.S.C. § 60101 et seq.). Section 60102 authorizes the Secretary of Transportation to issue regulations governing design, installation, inspection, emergency plans and procedures, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities. The amendments to the requirements for underground gas storage facilities involved in pipeline transportation addressed in this rulemaking are issued under this authority.

B. Executive Orders 12866 and 13563, and DOT Regulatory Policies and Procedures

Under title 5, United States Code, 553(b)(3)(B) and title 49, United States Code, 60102(b)(6)(C), advance notice, public procedure, and analysis of benefits and costs specified in 49 U.S.C. 60102(b)(2)(D) and (E) is not required when PHMSA for good cause finds (and incorporates the finding and a brief statement of reasons therefore in the rulemakings issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.

PHMSA has determined that the underground storage of natural gas is an immediate safety and environmental threat. Therefore, this IFR is being issued to address an emergency situation within the meaning of section 6(a)(3)(D) of Executive Order (EO) 12866 (58 FR

51735). Under section 6(a)(3)(D), in emergency situations, an agency must notify the Office of Management and Budget (OMB) as soon as possible and, to the extent practicable, comply with subsections (a)(3)(B) and (C) of section 6 of EO 12866. PHMSA has notified and consulted with OMB on this IFR.

The IFR has been designated by OMB as a significant regulatory action under Section 3(f) of EO 12866, and therefore was reviewed by OMB. This IFR also is considered significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034) because of substantial congressional, State, industry, and public interest in pipeline safety. PHMSA has prepared a regulatory impact analysis (RIA) for the IFR, which details the potential for incremental benefits and costs. The RIA in the docket for this IFR describes the baseline for the analysis, potential unit costs and benefits from compliance actions, and aggregate compliance costs. A table of the incremental annualized costs, from the RIA, is below:

Incremental Annualized Costs of the IFR (Million 2015\$)¹						
<i>Cost Component</i>	<i>Incremental Costs Relative to API RPs Implementation Baseline</i>					
	<i>Full Compliance Baseline</i>		<i>Partial Compliance Baseline</i>		<i>Regulatory Compliance Only Baseline</i>	
	<i>3% Discount Rate</i>	<i>7% Discount Rate</i>	<i>3% Discount Rate</i>	<i>7% Discount Rate</i>	<i>3% Discount Rate</i>	<i>7% Discount Rate</i>
	Mechanical integrity testing ²	\$0.0	\$0.0	\$27.2	\$31.7	\$170.6
Other RP elements	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Reporting	<\$0.1	<\$0.1	<\$0.1	<\$0.1	<\$0.1	<\$0.1
TOTAL¹	<\$0.1	<\$0.1	\$27.2	\$31.7	\$170.6	\$193.6

¹ Range reflects the assumed baseline level of compliance with API RPs in absence of regulatory requirements.

² Based on 10-year phase-in of integrity tests and a 10-year interval between tests. See Section 4 for details.

To the degree that the IFR promotes implementation of safer practices by making them mandatory and enforceable, PHMSA expects the benefits of the IFR in general, and of the mechanical integrity testing requirements in particular, to derive from preventing catastrophic

natural gas releases due to the failure of storage wells or of fugitive and vented emissions ancillary to the operation of storage facilities. These benefits include avoided property damage, loss of product, injuries and fatalities, methane emissions, adverse health effects, and others.

PHMSA expects mechanical integrity tests and other measures mandated by the IFR to reduce the likelihood of well failures in the future by detecting conditions that precede the failures. PHMSA did not find data to estimate quantitatively the reduction in risk that will result from conducting mechanical integrity tests on storage wells but notes that the tests are used to establish existing conditions and to monitor development of corrosion or other conditions (e.g., mechanical defects or damages) that could lead to a release or other consequences. Corrosion poses a serious threat to maintaining natural gas containment. Without proactive tests, serious integrity conditions may be discovered and addressed only after containment has already been compromised and the casing is leaking.

Reporting requirements incorporated in the IFR will help ensure compliance with the minimum safety measures specified in the API RPs and will provide data PHMSA needs to evaluate whether more stringent safety requirements are warranted to protect people and the environment.

PHMSA requests information from the public that could be used to estimate risk reduction from conducting mechanical integrity tests and the benefits of the IFR.

C. Executive Order 13132

PHMSA has analyzed this IFR according to Executive Order 13132 (“Federalism”). The IFR could impact state requirements because it sets a minimum federal standard applicable to

both intrastate and interstate underground storage facilities (see 49 U.S.C. 60104), but the IFR does not have a substantial direct effect on the states, the relationship between the national government and the states, or the distribution of power and responsibilities among the various levels of government. This IFR does not impose substantial direct compliance costs on State and local governments. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

D. Executive Order 13175

PHMSA has analyzed this IFR according to the principles and criteria in Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments.” Because this IFR would not significantly or uniquely affect the communities of the Indian tribal governments or impose substantial direct compliance costs, the funding and consultation requirements of Executive Order 13175 do not apply. We invite Tribes to comment on the IFR and PHMSA will take any Tribal comments and impacts into account when the Final Rule making the IFR permanent is issued.

E. Regulatory Flexibility Act and Executive Order 13272

Section 603 of the Regulatory Flexibility Act (RFA), Pub. L. 96-354, requires an agency to prepare an initial regulatory flexibility analysis describing impacts on small entities whenever an agency is required by 5 U.S.C. 553 to publish a notice of proposed rulemaking for any rulemaking. Similarly, section 604 of the RFA requires an agency to prepare a final regulatory flexibility analysis when an agency issues a rulemaking under 5 U.S.C. 553 after being required to publish a general notice of proposed rulemaking. Because of the need to move quickly to address the identified risk, prior notice and comment would be contrary to the public interest. As prior notice and comment under 5 U.S.C. 553 are not required to be provided in this situation,

the analyses in 5 U.S.C. 603 and 604 are not required. Nonetheless, PHMSA conducted a screening analysis of the impact of the rule on small entities which is included in the RIA for the rulemaking. The results support a determination that the IFR will not have a “significant impact on a substantial number of small entities” (SISNOSE). PHMSA invites comments on the costs and impact of this rule on small entities.

F. Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act (UMRA) of 1995, Pub. L. 104-4, requires that federal agencies assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under UMRA section 202, PHMSA generally must prepare a written statement, including a cost-benefit analysis, for rulemakings with “Federal mandates” that might result in expenditures by state, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million (adjusted annually for inflation) or more in any one year (i.e., \$151 million in 2015 dollars).

Based on the cost estimates detailed in the RIA for the most likely scenario in which a substantial fraction of the industry is already implementing API RPs 1170 and 1171 in the baseline, PHMSA determined that compliance costs in any given year will be below the threshold set in UMRA.

G. Paperwork Reduction Act

Pursuant to 5 CFR § 1320.8(d), PHMSA is required to provide interested members of the public and affected agencies with an opportunity to comment on information collection and recordkeeping requests. As a result of the requirements of this rulemaking, the following information collection impacts are expected:

Recordkeeping Requirements for Operators with Underground Storage Facilities

PHMSA is revising § 192.7 to incorporate by reference American Petroleum Institute (API) Recommended Practices (RP): API RP 1170, “Design and Operation of Solution-mined Salt Caverns used for Natural Gas Storage” (July 2015), and API RP 1171, “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs” (September 2015). Both API RPs recommend that operators of underground natural gas storage facilities should implement a wide range of actions to maintain safety, including the lifetime maintenance of certain records. PHMSA understands that the assessment, monitoring, planning, and recordkeeping activities are already conducted as part of normal business operations and may simply need to be modified and formalized to comply with the RPs. Accordingly, PHMSA estimates that all (estimated 124) owners and operators of underground natural gas storage facilities will take no more than 1 hour annually to comply with these recordkeeping requirements. The general recordkeeping requirements for operators of gas pipeline facilities are contained within the information collection under OMB Control No. 2137-0049. This information collection is being revised to account for the burden associated with these new recordkeeping requirements.

Reporting of Safety-Related Conditions in Underground Storage Facilities

PHMSA is revising § 191.23 to require operators of underground storage facilities to report certain safety-related conditions to PHMSA. PHMSA expects to receive four (4) of these safety-related condition reports annually from operators of underground storage facilities. This information collection is contained under OMB Control No. 2137-0578 which is being revised to account for the increased burden stemming from this requirement.

Incident and Annual Reporting Requirements for Operators with Underground Storage Facilities

PHMSA is revising § 191.15 to require each operator of an underground natural gas storage facility to submit DOT Form PHMSA F7100.2 as soon as practicable but not more than 30 days after detection of an incident. This form is contained under OMB Control No. 2137-0522 which is being revised to account for the estimated additional burden resulting from this requirement. Currently, PHMSA expects to receive four (4) incident reports involving an underground storage facility each year.

PHMSA is also revising § 191.17 to require each operator of an underground natural gas storage facility to submit an annual report on DOT PHMSA Form 7100.4-1 by March 15, for the preceding calendar year except that the first report must be submitted by **[INSERT DATE 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]**. PHMSA is requesting OMB's approval of this new form which will be contained under OMB Control No. 2137-0522. Currently, PHMSA expects to receive 124 annual report submissions from operators with underground storage facilities. PHMSA expects each operator to spend 8 hours compiling and submitting the requested data.

Operator Registry and Notification Requirements for Underground Storage Facilities

PHMSA is revising § 191.22 to require operators of facilities to obtain, or validate, an Operator Identification Number (OPID) and to notify PHMSA, no less than 60 days prior, of certain events such as construction of a new facility, well drilling, well workover, change of primary entity responsible for the facility and acquisition or divestiture of the facility as fully described in § 191.22(c). This information collection is contained under OMB Control No. 2137-0627 which is being revised to account for the additional burden expected to come from this requirement. As a result of the provisions in this rule, PHMSA expects to receive 24 new OPID requests and 25 ad hoc notifications from operators of underground storage facilities.

PHMSA will submit these information collection revision requests to OMB for approval. These information collections are contained in the pipeline safety regulations, 49 CFR Parts 190–199. The following information is provided for each information collection: (1) Title of the information collection; (2) OMB control number; (3) Current expiration date; (4) Type of request; (5) Abstract of the information collection activity; (6) Description of affected public; (7) Estimate of total annual reporting and recordkeeping burden; and (8) Frequency of collection. The information collection burden for the following information collections are estimated to be revised as follows:

1. Title: Recordkeeping Requirements for Gas Pipeline Operators.

OMB Control Number: 2137-0049.

Current Expiration Date: 04/30/2018.

Abstract: A person owning or operating an underground natural gas storage facility is required to maintain records, make reports, and provide information to the Secretary of Transportation at the Secretary's request. The types of records involved would include records for design activities, construction, maintenance activities, mechanical integrity tests and repairs, and other operation activities. As these activities have been widely adopted across the industry as RPs, PHMSA expects there to be minimal incremental burden.

Additionally, Each operator of a pipeline facility (except master meter operators) must document the justification if it plans to deviate from a provision of the RPs. PHMSA expects 10 percent of the affected community (approx. 12 operators) will make these deviations each year. PHMSA believes it will take operators 8 hours to complete such documentation. This includes the time to gather and draft the information necessary for

sufficiently demonstrating that compliance with a RP is not practicable and not necessary for safety with respect to specified underground storage facilities or equipment. This also includes the time necessary to have any deviation technically reviewed and documented by a subject matter expert to ensure there will be no adverse impact on design, construction, operations, maintenance, integrity, emergency preparedness and response, and overall safety; the time to have the deviation dated and approved by a senior executive officer, vice president, or higher office with responsibility of the underground natural gas storage facility; and the time to incorporate such deviations into the operator's program or procedural manual. This will result in an annual burden of 12 responses and 96 hours for this provision and an overall burden increase of 136 responses and 220 hours (124 hours for general recordkeeping + 96 hours to document deviations) for this information collection.

Affected Public: Operators of Underground Natural Gas Storage Facilities.

Annual Reporting and Recordkeeping Burden:

Total Annual Responses: 12,436.

Total Annual Burden Hours: 940,674.

Frequency of Collection: Annual.

2. Title: Reporting Safety-Related Conditions on Gas, Hazardous Liquid, and Carbon Dioxide Pipelines and Liquefied Natural Gas Facilities.

OMB Control Number: 2137-0578.

Current Expiration Date: 07/31/2017

Abstract: Each operator of a pipeline facility (except master meter operators) must submit to DOT a written report on any safety-related condition that causes or has

caused a significant change or restriction in the operation of a pipeline facility or a condition that is a hazard to life, property or the environment. See 49 U.S.C. 60102.

Based on the proposed revisions in this rule, the burden associated with this information collection is increasing by 4 responses and 24 burden hours.

Affected Public: Operators of Underground Natural Gas Storage Facilities.

Annual Reporting and Recordkeeping Burden:

Total Annual Responses: 146.

Total Annual Burden Hours: 876.

Frequency of Collection: On occasion.

3. Title: Incident and Annual Reports for Gas Pipeline Operators.

OMB Control Number: 2137-0522.

Current Expiration Date: 10/31/2017

Abstract: This information collection covers the collection of information from Gas pipeline operators for Incidents and Annual reports. Based on the proposals in the rule the burden associated with this information collection will increase by 128 responses (124 annual report submissions and 4 incident report submissions). PHMSA expects each of the 124 operators who submit the annual report to spend eight (8) hours completing this form, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information, for an overall burden of 992 hours for annual report submissions. Based on current reporting trends, PHMSA expects to receive four (4) incident reports per year from operators of underground storage facilities. PHMSA expects operators who are required to submit an incident report to spend 10 hours per submission resulting in a burden of 40 hours for

incident reporting. These two requirements, combined, will result in an overall burden increase of 128 responses and 1,032 burden hours.

Affected Public: Operators of Underground Natural Gas Storage Facilities.

Annual Reporting and Recordkeeping Burden:

Total Annual Responses: 12,292.

Total Annual Burden Hours: 93,353.

Frequency of Collection: On occasion.

4. Title: National Registry of Pipeline and Liquefied Natural Gas (LNG) Operators.

OMB Control Number: 2137-0627.

Current Expiration Date: 5/31/2018

Abstract: The National Registry of Pipeline and LNG Operators serves as the storehouse for the reporting requirements for an operator regulated or subject to reporting requirements under 49 CFR Parts 192, 193, or 195. This registry incorporates the use of two forms. The forms for assigning and maintaining OPID information are the Operator Assignment Request Form (PHMSA F 1000.1) and National Registry Notification Form (PHMSA F 1000.2). Based on the proposals in this IFR this information collection will increase by 49 responses and 49 burden hours.

Affected Public: Operators of Underground Natural Gas Storage Facilities.

Annual Reporting and Recordkeeping Burden:

Total Annual Responses: 679.

Total Annual Burden Hours: 679.

Frequency of Collection: On occasion.

Requests for copies of these information collections should be directed to Angela Dow or Cameron Satterthwaite, Office of Pipeline Safety (PHP-30), Pipeline Hazardous Materials Safety Administration (PHMSA), 2nd Floor, 1200 New Jersey Avenue, S.E., Washington, DC 20590-0001, Telephone (202) 366-4595.

Comments are invited on:

- (a) The need for the proposed collection of information for the proper performance of the functions of the agency, including whether the information will have practical utility;
- (b) The accuracy of the agency's estimate of the burden of the revised collection of information, including the validity of the methodology and assumptions used;
- (c) Ways to enhance the quality, utility, and clarity of the information to be collected; and
- (d) Ways to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques.

Send comments directly to the Office of Management and Budget, Office of Information and Regulatory Affairs, Attn: Desk Officer for the Department of Transportation, 725 17th Street, N.W., Washington, DC 20503. Comments can be emailed to OMB using the following email address: OIRA_Submission@omb.eop.gov. Comments on the collections of information associated with this IFR should be received by OMB on or prior to **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

H. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes

the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

I. National Environmental Policy Act

PHMSA analyzed this IFR in accordance with section 102(2)(c) of the National Environmental Policy Act (42 U.S.C. 4321 – 4347), the Council on Environmental Quality regulations (40 CFR parts 1500 through 1508), and DOT Order 5610.1C, and has preliminarily determined that this action will not significantly affect the quality of the human environment. A preliminary environmental assessment of this rulemaking is available in the docket.

J. Executive Order 13211

This IFR is not a "significant energy action" under Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use). See additional details Section 8.5 of the RIA report. It is not likely to have a significant adverse effect on supply, distribution, or energy use. Further, the Office of Information and Regulatory Affairs has not designated this IFR as a significant energy action.

K. Privacy Act Statement

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (70 FR 19477).

L. Availability of Materials to Interested Parties

PHMSA currently incorporates by reference into 49 CFR Parts 192, 193, and 195 all or parts of more than 60 standards and specifications developed and published by standard developing organizations (SDOs). In general, SDOs update and revise their published standards every 3 to 5 years to reflect modern technology and best technical practices.

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113) directs federal agencies to use voluntary consensus standards in lieu of government-written standards whenever possible. Voluntary consensus standards are standards developed or adopted by voluntary bodies that develop, establish, or coordinate technical standards using agreed-upon procedures. In addition, Office of Management and Budget (OMB) issued OMB Circular A-119 to implement Section 12 (d) of Public Law 104-113 relative to the utilization of consensus technical standards by Federal agencies. This circular provides guidance for agencies participating in voluntary consensus standards bodies and describes procedures for satisfying the reporting requirements in Public Law 104-113.

In accordance with the preceding provisions, PHMSA has the responsibility for determining, via petitions or otherwise, which currently referenced standards should be updated, revised, or removed, and which standards should be added to 49 CFR Parts 192, 193, and 195. Revisions to incorporate by reference materials in 49 CFR Parts 192, 193, and 195 are handled via the rulemaking process, which allows for the public and regulated entities to provide input. During the rulemaking process, PHMSA must also obtain approval from the Office of the Federal Register to incorporate by reference any new materials.

PHMSA has worked to make the materials to be incorporated by reference reasonably available to interested parties. Section 24 of the “Pipeline Safety, Regulatory Certainty, and Job

Creation Act of 2011” (Pub. L. 112-90, January 3, 2012), amended 49 U.S.C. § 60102 by adding a new public availability requirement for documents incorporated by reference after January 3, 2013. The law states: “Beginning 1 year after the date of enactment of this subsection, the Secretary may not issue guidance or a regulation pursuant to this chapter that incorporates by reference any documents or portions thereof unless the documents or portions thereof are made available to the public, free of charge, on an Internet Website.” This section was further amended on August 9, 2013. The current law continues to prohibit the Secretary from issuing a regulation that incorporates by reference any document unless that document is available to the public, free of charge, but removes the Internet website requirements (Pub. L. 113-30, August 9, 2013).

Further, the Office of the Federal Register issued a November 7, 2014, rulemaking (79 FR 66278) that revised 1 CFR § 51.5 to require that agencies detail in the preamble of a proposed rulemaking the ways the materials it proposes to incorporate by reference are reasonably available to interested parties, or how the agency worked to make those materials reasonably available to interested parties.

To meet the requirements of section 24, PHMSA negotiated agreements with all but one of the standards-setting organizations with standards already incorporated by reference in the pipeline safety regulations to make viewable copies of those standards available to the public at no cost. One organization with which PHMSA has an agreement is API, which will voluntarily make these recommended practices available to the public on its read-only website. API’s mailing address and website is listed in 49 CFR Part 192.

List of Subjects

49 CFR Part 191

Underground Natural Gas Storage Facility Reporting Requirements

49 CFR Part 192

Incorporation by reference, Underground Natural Gas Storage Facility Safety

In consideration of the foregoing, PHMSA amends 49 CFR Parts 191 and 192 as follows:

PART 191 – TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE;
ANNUAL, INCIDENT, AND OTHER REPORTING

1. The authority citation for part 191 continues to read as follows:

Authority: 49 U.S.C. 5121, 60102, 60103, 60104, 60108, 60117, 60118, 60124, 60132, and 60141; and 49 CFR 1.97.

2. In § 191.1, paragraph (a) is revised to read as follows:

§ 191.1 Scope.

(a) This part prescribes requirements for the reporting of incidents, safety-related conditions, annual pipeline summary data, National Operator Registry information, and other miscellaneous conditions by operators of underground natural gas storage facilities and natural gas pipeline facilities located in the United States or Puerto Rico, including underground natural gas storage facilities and pipelines within the limits of the Outer Continental Shelf as that term is defined in the Outer Continental Shelf Lands Act (43 U.S.C. 1331).

* * * * *

3. In § 191.3, the definition for *Incident* is revised and the definition for *Underground natural gas storage facility* is added in appropriate alphabetical order to read as follows:

§ 191.3 Definitions.

* * * * *

Incident means any of the following events:

(1) An event that involves a release of gas from a pipeline, gas from an underground natural gas storage facility, liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and that results in one or more of the following consequences:

- (i) A death, or personal injury necessitating in-patient hospitalization;
- (ii) Estimated property damage of \$50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost;
- (iii) Unintentional estimated gas loss of three million cubic feet or more;

(2) An event that results in an emergency shutdown of an LNG facility or an underground natural gas storage facility. Activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident.

(3) An event that is significant in the judgment of the operator, even though it did not meet the criteria of paragraphs (1) or (2) of this definition.

* * * * *

Underground natural gas storage facility means an underground natural gas storage facility as defined in § 192.3 of part 192 of this chapter.

4. In 49 CFR 191.15, the title of § 191.15 is revised, paragraph (c) is revised, and paragraph (d) is added to read as follows:

§ 191.15 Transmission systems; gathering systems; liquefied natural gas facilities; and underground natural gas storage facilities: Incident report.

* * * * *

(c) Each operator of an underground natural gas storage facility must submit DOT Form PHMSA F7100.2 as soon as practicable but not more than 30 days after detection of an incident required to be reported under §191.5 of this part.

(d) *Supplemental report.* Where additional related information is obtained after a report is submitted under paragraph (a), (b) or (c) of this section, the operator must make a supplemental report as soon as practicable with a clear reference by date to the original report.

5. In § 191.17, the title of section 191.17 is revised, and a new paragraph (c) is added to read as follows:

§ 191.17 Transmission systems; gathering systems; liquefied natural gas facilities; and underground natural gas storage facilities: Annual report.

* * * * *

(c) *Underground natural gas storage facility.* Each operator of an underground natural gas storage facility must submit an annual report on DOT PHMSA Form 7100.4-1 by March 15, for the preceding calendar year except that the first report must be submitted by **[INSERT 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]**:

6. In § 191.21, the list of OMB control numbers is revised to read as follows:

§ 191.21 OMB control number assigned to information collection.

* * * * *

OMB Control Number 2137-0522

Section of 49 CFR Part 191 where identified	Form No.
191.5	Telephonic.
191.9	PHMSA 7100.1, PHMSA 7100.3.
191.11	PHMSA 7100.1-1, PHMSA 7100.3-1.
191.12	PHMSA 7100.1-2.
191.15	PHMSA 7100.2, PHMSA 7100.3.
191.17	PHMSA 7100.2-1, PHMSA 7100.3-1.PHMSA 7100.4-1.
191.22	PHMSA 1000.1, PHMSA 1000.2.

7. In 49 CFR § 191.22, paragraphs (a) and (b), the introductory text of (c), and (c)(2)(iii) are revised, and new paragraphs (c)(1)(iv) and (c)(2)(vi) are added, to read as follows:

§ 191.22 National Registry of Pipeline and LNG operators.

(a) *OPID Request.* Effective January 1, 2012, each operator of a gas pipeline, gas pipeline facility, underground natural gas storage facility, LNG plant or LNG facility must obtain from PHMSA an Operator Identification Number (OPID). An OPID is assigned to an operator for the pipeline or pipeline system for which the operator has primary responsibility. To obtain an OPID, an operator must complete an OPID Assignment Request DOT Form PHMSA F 1000.1 through the National Registry of Pipeline, Underground Natural Gas Storage Facility, and LNG Operators in accordance with § 191.7.

(b) *OPID validation.* An operator who has already been assigned one or more OPID by January 1, 2011, must validate the information associated with each OPID through the National Registry of Pipeline, Underground Natural Gas Storage Facility, and LNG Operators at <http://opsweb.phmsa.dot.gov>, and correct that information as necessary, no later than June 30, 2012.

(c) *Changes.* Each operator of a gas pipeline, gas pipeline facility, underground natural gas storage facility, LNG plant, or LNG facility must notify PHMSA electronically through the National Registry of Pipeline, Underground Natural Gas Storage Facility, and LNG Operators at <http://opsweb.phmsa.dot.gov> of certain events.

(1) * * *

(iv) Construction of a new underground natural gas storage facility or the abandonment, drilling or well workover (including replacement of wellhead, tubing, or a new casing) of an injection, withdrawal, monitoring, or observation well for an underground natural gas storage facility.

(2) * * *

(iii) A change in the entity (*e.g.*, company, municipality) responsible for an existing pipeline, pipeline segment, pipeline facility, underground natural gas storage facility, or LNG facility;

* * * * *

(vi) The acquisition or divestiture of an existing underground natural gas storage facility subject to Part 192 of this subchapter.

* * * * *

8. In § 191.23, paragraph (a)(9) is added and paragraphs (a)(2) through (a)(8) and (b)(3) are revised to read as follows:

§ 191.23 Reporting safety-related conditions.

(a) * * *

(2) In the case of an underground natural gas storage facility, including injection, withdrawal, monitoring, or observation well, general corrosion that has reduced the wall thickness to less than that required for the maximum well operating pressure, and localized corrosion pitting to a degree where leakage might result.

(3) Unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability of a pipeline or the structural integrity or reliability of an underground natural gas storage facility, including injection, withdrawal, monitoring, or observation well for an underground natural gas storage facility, or LNG facility that contains, controls, or processes gas or LNG.

(4) Any crack or other material defect that impairs the structural integrity or reliability of an underground natural gas storage facility or LNG facility that contains, controls, or processes gas or LNG.

(5) Any material defect or physical damage that impairs the serviceability of a pipeline that operates at a hoop stress of 20% or more of its specified minimum yield strength or underground natural gas storage facility, including injection, withdrawal, monitoring, or observations well for an underground natural gas storage facility.

(6) Any malfunction or operating error that causes the pressure of an underground natural gas storage facility or LNG facility that contains or processes gas or LNG to rise above its maximum well operating pressure (or working pressure for LNG facilities) plus the margin (build-up) allowed for operation of pressure limiting or control devices.

(7) A leak in a pipeline or an underground natural gas storage facility, including injection, withdrawal, monitoring, or observation well for an underground natural gas storage facility, or LNG facility that contains or processes gas or LNG that constitutes an emergency.

(8) Inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank.

(9) Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20% or more reduction in operating pressure or shutdown of operation of a pipeline or an underground natural gas storage facility, including injection, withdrawal, monitoring, or observation well for an underground natural gas storage facility, or an LNG facility that contains or processes gas or LNG.

(b) * * *

(3) Exists on a pipeline (other than an LNG facility or Underground Natural Gas Storage facility) that is more than 220 yards (200 meters) from any building intended for human occupancy or outdoor place of assembly, except that reports are required for conditions within the right-of-way of an active railroad, paved road, street, or highway: or

* * * * *

PART 192 – TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE:
MINIMUM FEDERAL SAFETY STANDARDS

9. The authority citation for Part 192 is revised to read as follows:

Authority: 49 U.S.C. 5103, 60102, 60104, 60108, 60109, 60110, 60113, 60116, 60118, 60137, and 60141; and 49 CFR 1.97.

10. In § 192.3, a new definition for *Underground natural gas storage facility* is added in appropriate alphabetical order to read as follows:

§ 192.3 Definitions.

* * * * *

Underground natural gas storage facility means a facility that stores natural gas in an underground facility incident to natural gas transportation, including—(A) a depleted hydrocarbon reservoir; (B) an aquifer reservoir; or (C) a solution-mined salt cavern reservoir, including associated material and equipment used for injection, withdrawal, monitoring, or observation wells, and wellhead equipment, piping, rights-of-way, property, buildings, compressor units, separators, metering equipment, and regulator equipment.

11. In § 192.7, paragraphs (b)(10) and (b)(11) are added to read as follows:

§ 192.7 What documents are incorporated by reference partly or wholly in this part?

* * * * *

(b) * * *

(10) API Recommended Practice 1170, “Design and Operation of Solution-mined

Salt Caverns Used for Natural Gas Storage,” First edition, July 2015 (API RP 1170), IBR approved for § 192.12.

(11) API Recommended Practice 1171, “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs,” First edition, September 2015, (API RP 1171), IBR approved for § 192.12.

* * * * *

12. A new § 192.12 is added to read as follows:

§ 192.12 Underground natural gas storage facilities.

(a) *Applicability.* Underground natural gas storage facilities must meet the following requirements.

(1) Each underground natural gas storage facility that uses a solution-mined salt cavern reservoir for gas storage constructed after **[INSERT 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]** must meet all requirements and recommendations of API RP 1170 (incorporated by reference, see §192.7).

(2) Each underground natural gas storage facility that uses a solution-mined salt cavern reservoir for storage including those constructed not later than **[INSERT 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]** must meet the operations, maintenance, integrity demonstration and verification, monitoring, threat and hazard identification, assessment, remediation, site security, emergency response and preparedness, and recordkeeping requirements and recommendations of API RP 1170, §§ 9, 10, and 11 (incorporated by reference, see §192.7) by **[INSERT 12-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]**.

- (3) Each underground natural gas storage facility that uses a depleted hydrocarbon reservoir or an aquifer reservoir for storage constructed after **[INSERT 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]** must meet all requirements and recommendations of API RP 1171 (incorporated by reference, see § 192.7).
- (4) Each underground natural gas storage facility that uses a depleted hydrocarbon reservoir or an aquifer reservoir for gas storage, including those constructed not later than **[INSERT 6-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]** must meet the operations, maintenance, integrity demonstration and verification, monitoring, threat and hazard identification, assessment, remediation, site security, emergency response and preparedness, and recordkeeping requirements and recommendations of API RP 1171, §§ 8, 9, 10, and 11 (incorporated by reference, see § 192.7) by **[INSERT 12-MONTHS AFTER THE EFFECTIVE DATE OF THE RULE]**.
- (5) Operators of underground gas storage facilities must establish and follow written procedures for operations, maintenance, and emergencies implementing the requirements of API RP 1170 and API RP 1171, as required under this section, including the effective dates as applicable, and incorporate such procedures into their written procedures for operations, maintenance, and emergencies established pursuant to § 192.605.
- (6) With respect to the incorporation by reference of API RP 1170 and API RP 1171 in this section, the non-mandatory provisions (i.e., provisions containing the word "should" or other non-mandatory language) are adopted as mandatory provisions under the authority of the pipeline safety laws except when the operator includes or references written technical justifications in its program or procedural manual, described in paragraph (5) above, as to why compliance with a provision of the recommended practice is not

practicable and not necessary for safety with respect to specified underground storage facilities or equipment. The justifications for any deviation from any provision of API RP 1170 and API RP 1171 must be technically reviewed and documented by a subject matter expert to ensure there will be no adverse impact on design, construction, operations, maintenance, integrity, emergency preparedness and response, and overall safety and must be dated and approved by a senior executive officer, vice president, or higher office with responsibility of the underground natural gas storage facility. An operator must discontinue use of any variance where PHMSA determines and provides notice that the variance adversely impacts design, construction, operations, maintenance, integrity, emergency preparedness and response, or overall safety.

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Part 1.97

Marie Therese Dominguez,
Administrator.