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Examining California's Implementation of SB 1371 to Address Natural Gas Pipeline Leaks

By Clare Ellis*

Without a coordinated regulatory approach for addressing natural gas pipeline leaks at the federal level, interstate pipeline operators are left to navigate duplicative and occasionally contradictory regulatory schemes. Under SB 1371, California has adopted a comprehensive approach to leak abatement, in an attempt to achieve the dual objectives of pipeline safety improvements and emission reductions. This article provides an overview of SB 1371's requirements and implementation in the years since it was enacted, as a counterpoint to such requirements at the federal level.

It has been more than five years since California Governor Jerry Brown signed SB 1371 into law, directing the California Public Utilities Commission ("CPUC" or the "Commission") and the California Air Resources Board ("CARB") to work collaboratively to achieve the dual goals of minimizing the safety hazards associated with gas pipeline leaks and reducing pipeline greenhouse gas ("GHG") emissions to advance the state's climate change-related environmental goals. California's comprehensive approach to addressing both the safety and environmental impacts associated with gas leaks from pipeline infrastructure has not been widely followed in other states, nor at the federal level.

After reviewing the current state of SB 1371 implementation in California, this article notes that there may be opportunities for the U.S. Environmental Protection Agency ("EPA") and the federal Pipeline and Hazardous Materials Safety Administration ("PHMSA") to better align their regulatory programs for addressing gas pipeline leaks in a manner that would advance the dual objectives of pipeline safety and environmental protection.

SB 1371 OVERVIEW

California's total energy consumption, including natural gas, is the second highest in the nation.¹ CPUC regulates over 108,000 miles of transmission and

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¹ U.S. Energy Information Administration, California State Energy Profile, https://www.eia.gov/state/print.php?sid=CA.

distribution pipelines across the state.² Following the 2010 natural gas pipeline explosion in San Bruno, California, CPUC initiated proceedings for exploring potential means of developing a comprehensive leak reduction strategy for natural gas pipelines.³ These proceedings focused on safety and risk, however, rather than emissions reduction. The state senate noted in its analysis of SB 1371 that "[t]he natural gas that travels through transmission and distribution pipelines is more than 99.5% methane, a potent greenhouse gas" and that "[t]he largest human-derived source of methane emissions in the U.S. is leaks from natural gas extraction and transmission pipelines."4

Leaking gas pipelines had been previously recognized as a major safety problem, but at the time of the bill's passage, "the significant climate change impacts of fugitive methane emissions [were] just . . . coming into focus." The purpose of SB 1371 was thus to require CPUC to adopt regulations requiring gas leaks to be detected and promptly repaired, with the dual goals of promoting pipeline safety and reducing GHG emissions from Commission-regulated intrastate gas transmission and distribution lines in keeping with the ambitious climate change goals of the California Global Warming Solutions Act of 2006 ("AB 32").6

Specifically, SB 1371 (the "Leno Natural Gas and Leakage Abatement Bill"), signed into law on September 21, 2014, directed CPUC to require gas corporations to file reports summarizing leak management practices, a list of methane leaks by grade, a list of open leaks being monitored or repaired, and an estimate of gas loss due to leaks. It also directed CPUC to commence a proceeding by January 15, 2015 in consultation with CARB to adopt rules and procedures that, among other things:

- Provide for the maximum technologically feasible and cost-effective avoidance, reduction, and repair of leaks and leaking components in Commission-regulated intrastate transmission and distribution gas pipeline facilities within a reasonable time after discovery;
- · Provide for the repair of leaks as soon as reasonably possible after

² SB 1371, Senate Energy, Utilities and Communications Committee Analysis (April 24, 2014), https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201320140SB1371#.

³ *Id.* (discussing the Gas Safety Rate Case Proceeding (R.11-02-2019) started in February 2011 and a subsequent proceeding (R.13-11-006) initiated to update the General Rate Case process by incorporating explicit assessment of risks and the costs of minimizing them).

⁴ *Id.* at 2.

⁵ Senate Rules Committee, Senate Floor Analysis of SB 1371 (Aug. 27, 2014) at 5, https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201320140SB1371#.

⁶ See Cal. Pub. Util. Code § 975(b).

discovery, consistent with established safety requirements and the goals of reducing air pollution and the climate change impacts of methane emissions;

- Evaluate the operations, maintenance, and repair practices for those facilities to determine whether existing practices are effective at reducing methane leaks and promoting public safety and whether alternative practices may be more effective at achieving the goals of SB 1371; and
- Establish and require the use of best practices for leak surveys, patrols, leak survey technology, leak prevention, and leak reduction.

In addition, SB 1371 required CPUC to establish protocols for quantifying emissions from leaking gas pipeline facilities and for evaluating and tracking leaks, which would be used by gas companies in their operating plans as well as in tracking systems used for GHG reporting required under CARB regulations.

Finally, SB 1371 directed CPUC to require "to the extent feasible" that owners of Commission-regulated intrastate transmission and distribution lines calculate and report to both CPUC and CARB a baseline system-wide leak rate, to periodically update this calculation, and to annually report on measures to be taken in the following year to reduce the system-wide leak rate to achieve the dual goals stated above.⁷

On the same day that SB 1371 was signed into law, Governor Brown also approved SB 605 ("Short-lived climate pollutants"), requiring CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants ("SLCPs") including natural gas emissions. Two years later, on September 8, 2106, Governor Brown signed SB 32 into law, requiring CARB to ensure statewide GHG emissions reduction to 40 percent below 1990 levels by 2030.

SB 1371 IMPLEMENTATION

CPUC's rulemaking proceedings to implement SB 1371 were initiated January 22, 2015.8 As part of this rulemaking effort, CPUC required regulated gas companies to file their statutorily-mandated reports on their natural gas leaks and leak management practices by May 15, 2015 and to file update reports each year since then. Since 2015, regulated natural gas companies have

⁷ Cal. Pub. Util. Code § 975(d).

⁸ See R.15-01-008 "Order Instituting Rulemaking to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage consistent with Senate Bill 1371" issued January 22, 2015. See also, CPUC, "Methane Leak Proceeding" (R.15-01-008), https://www.cpuc.ca.gov/General.aspx?id=8829.

filed five annual reports to demonstrate progress towards the bill's dual hazardous leak abatement and emission reduction objectives.

On June 15, 2017, CPUC approved the first phase of the regulatory program, the Natural Gas Leak Abatement Program, which included:

- Annual reporting to track methane emissions;
- 26 best practices for minimizing methane emissions (encompassing gas meters, pipelines, storage facilities, compressors and other infrastructure, leak detection, leak repair, and leak prevention; as well as policies and procedures, recordkeeping, and training);
- Biennial methane leak compliance plans, which must be incorporated into an operator's safety plans required by CPUC General Order 112-F beginning in March 2018;
- "Soft" methane reduction targets to support California's statutory methane emissions reduction target of 40 percent below 2013 levels by 2030 (subject to review in a second phase of the proceeding); and
- Preliminary cost recovery processes to facilitate CPUC review and approval of incremental expenditures to implement best practices, pilot programs, and research & development (also subject to review in a second phase of the proceeding).

Regulated companies submitted their first compliance plans in March 2018 setting forth proposed measures to implement the 26 best practices and associated revenue requirements for 2018–2019.

In January 2020, CPUC and CARB issued their fifth annual joint staff report analyzing regulated gas companies' most recent annual reports reflecting 2018 emissions data. The report reflects that emissions attributable to leaks and vented emissions from California's natural gas transmission and distribution system totaled 5,971 million standard cubic feet ("MMscf") of natural gas, 6.7 percent lower than the emissions volume reported in 2017 and 631 MMscf or 9.6 percent below the 2015 baseline. 10

According to the report, the overall decrease from 2017 to 2018 is the result of significant emission decreases in blowdowns, graded pipeline leaks, and

⁹ See CPUC and CARB Joint Staff Report, Analysis of the Utilities' June 17, 2019 Natural Gas Leak and Emission Reports, SB 1371 (Leno) Natural Gas: Leakage Abatement, R.15-01-008/D.17-06-015/D.19-08-020 (Jan. 2, 2020).

¹⁰ *Id.* at 5 (noting that methane is the primary component of such emissions, comprising approximately 93.4 percent of the volume of utility grade natural gas).

pipeline damages, offset by minor increases in other categories.¹¹ The total natural gas emissions of 5,971 MMscf equates to 2.67 million metric tons of carbon dioxide ("MMTCO2e") using the Intergovernmental Panel on Climate Change ("IPCC") Fourth Assessment Report ("AR4") 100-year methane Global Warming Potential ("GWP") of 25, or 7.70 MMTCO2e using the 20-year methane GWP of 72.¹²

The report notes that the CARB Oil and Gas Rule ("OGR") took effect in 2018, requiring quarterly surveys that helped the agencies in updating and accounting for components that had not been previously listed, along with more stringent leak detection threshold. This resulted in "more granular leak detection," "shorter average time to repair," and a "focus on compressor and storage facilities' emissions," among other things—causing overall a net decrease in emissions from component and compressor leaks, as well as facility leaks, due to shorter time to repair and leak duration. 14

As explained in the joint staff report, "leak" is defined broadly for purposes of SB 1371 and includes "any breach, whether intentional or unintentional, whether hazardous or non-hazardous, of the pressure boundary of the gas system that allows natural gas to leak into the atmosphere." ¹⁵ Any vented or fugitive emission to the atmosphere is considered a "leak" for the purposes of the analysis. ¹⁶ Consequently, as the agencies acknowledge in their report, this leak definition is broader than the federal pipeline safety definition discussed below. ¹⁷

The report focuses heavily on emissions data but there is almost no discussion of safety improvements inuring from the SB 1371 regulatory effort. Indeed, the conclusions of the report focus entirely on strides made in emissions reductions without addressing hazardous leak reductions at all. This suggests that the safety goal of the enactment and CPUC implementation have been eclipsed by the state's GHG emissions reductions goals. Indeed, the focus of CPUC regulatory efforts under SB 1371 in abatement of *all* leaks from pipeline infrastructure, regardless of hazard or safety risk posed to the persons or property, indicates the sweeping nature of the program and is arguably

¹¹ Id.

¹² *Id.*

¹³ *Id.* at 7.

¹⁴ Id. at 10.

¹⁵ *Id.* at 54.

¹⁶ *ld*.

¹⁷ Id.

inconsistent with the statutory directive that nothing in SB 1371 "shall compromise or deprioritize safety as a top consideration." ¹⁸

CURRENT FEDERAL LEAK MONITORING AND ABATEMENT REQUIREMENTS

PHMSA implements the federal pipeline safety program for interstate natural gas and hazardous liquid pipeline systems, under congressional directives in the federal Pipeline Safety Act ("PSA"), 19 PHMSA regulates pipeline infrastructure under a safety mandate, to "provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities." 20 Congress directed PHMSA in the PSA to prescribe regulatory standards for pipelines that are "practicable "and "designed to meet the need for gas pipeline safety . . . and protecting the environment." 21

Correspondingly (and unlike California's program under SB 1371), PHMSA leak monitoring and repair requirements for natural gas pipeline facilities generally apply only to "hazardous" leaks. PHMSA requires operators to conduct leakage surveys on all regulated transmission lines and distribution systems at regular intervals²² and provides that "[h]azardous leaks must be repaired promptly."²³ Leaks that are non-hazardous (or that do not have the potential to become hazardous), on the other hand, are mostly left to the discretion of the operator.

PHMSA regulatory requirements for hazardous leak detection and repair on interstate pipeline facilities include that:

- Potentially hazardous leaks must be located and eliminated before operating a new segment or returning a segment of pipeline to service:²⁴
- Pipelines, depending upon type and pressure, must be tested in a manner that ensures discovery of potentially hazardous leaks in the segment being tested;²⁵ and
- Pipelines subject to incremental pressure increases must be checked for

¹⁸ SB 1371 § 1(a) (emphasis added).

^{19 49} U.S.C. § 60101 et seq.

²⁰ 49 U.S.C. § 60102(a)(1).

^{21 49} U.S.C. § 60102(b).

²² 49 C.F.R. § 192.706.

²³ 49 C.F.R. §§ 192.703(c); 192.723.

²⁴ 49 C.F.R. § 192.503(a).

²⁵ 49 C.F.R. §§ 192.509(a); 192.513(b).

leaks, but only leaks determined to be potentially hazardous must be repaired. $^{\mathbf{26}}$

PHMSA regulations provide no generally applicable definition for "leaks" or "hazardous leaks;" however, such leaks *are* defined for purposes of gas distribution line integrity management requirements as any leak that "represents an existing or probable hazard to persons or property and requires immediate repair or continuous action until the conditions are no longer hazardous."²⁷ Distribution pipeline operators must maintain a written integrity management plan that provides for the development and monitoring of performance measures from an established baseline, including the number of hazardous leaks eliminated or repaired as required by § 192.703(c), categorized by cause and material.²⁸

PHMSA Operations & Maintenance Enforcement Guidance explains that the determination of whether a leak is "hazardous" and makes a pipeline "unsafe" depends upon the nature of the operation and local conditions.²⁹ According to PHMSA's guidance, "[t]he nature and size of the leak, its location, and the danger to the public are among the factors that must be considered by the operator."³⁰ Otherwise, operators are left to determine and define what constitutes a "hazardous leak" in implementing their own leak detection and repair programs.³¹

PHMSA does explain in its operations and maintenance guidance, however, that operators need to have a leak classification system if all leaks are not repaired promptly, and they need to have written procedures for leak classification and defining required repairs including time frames for performing repairs.³² Overall, though, the federal pipeline safety regulations do not address repairs of non-hazardous leaks on distribution and transmission lines.

²⁶ 49 C.F.R. § 192.553(a) (providing that, at the end of each incremental pressure increase, the pressure must be held constant while the entire segment of pipeline that is affected is checked for leaks, and that each leak detected must be repaired before a further pressure increase is made, except that a leak determined not to be potentially hazardous need not be repaired, if it is monitored during the pressure increase and it does not become potentially hazardous).

²⁷ 49 C.F.R. § 192.1001.

²⁸ 49 C.F.R. § 192.1007(e).

²⁹ PHMSA, Operations and Maintenance Enforcement Guidance (Part 192) at 93.

³⁰ *Id.*

³¹ *Id.* at 94 ("Operator needs to define hazardous leak. Part 192 Subpart P defines hazardous leaks. While this definition is only applicable to distribution systems, it may provide guidance for defining hazardous leaks.").

³² *Id.* at 95.

EPA regulates methane emissions from the oil and gas sector, including natural gas pipeline infrastructure, under Clean Air Act ("CAA") Section 111. In May 2016, the agency adopted New Source Performance Standards ("NSPS") intended to address methane and other emissions from new, reconstructed, and modified oil and gas sources—including natural gas transmission and distribution pipelines and related equipment. These regulations prescribe, among other things, enhanced leak detection and repair requirements for the sector.

More recently, however, EPA has issued final rules to amend these requirements.³³ In view of pending litigation and reconsideration petitions, the purpose of the amendments is to address concerns that the 2016 NSPS inappropriately expanded the source category when it swept in all sources in the transmission and storage segment of the oil and natural gas industry and subjected them to the NSPS. One of the recently-issued final rules reverses that addition to allow EPA to go through the process of amending the source category description and endangerment finding requirements of the CAA. As a result, the rule rescinds emission limits in the 2016 NSPS (including limitations on both methane and volatile organic compounds emissions).³⁴

The Agency also takes the position in the final rule that its obligation to develop emission guidelines to address methane emissions from existing sources under CAA Section 111(d) has been eliminated.³⁵ This is because the CAA only permits regulation of existing sources where a new source standard is in place.

POTENTIAL FOR FEDERAL COORDINATION

Given the lack of a coordinated federal regulatory program for safety and emissions reductions from natural gas pipeline infrastructure, operators have compliance obligations under both EPA and PHMSA regulations. This creates the potential for overlapping obligations with respect to leak detection, repair, and reporting. Although opportunities for coordination have periodically been examined at the federal level, ³⁶ EPA and PHMSA have not historically coordinated on emissions reduction and safety improvement strategies for

³³ EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review; Final rule (pre-publication copy issued Aug. 13, 2020); EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration; Final rule (pre-publication copy issued Aug. 13, 2020).

³⁴ EPA, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review; Final rule (pre-publication copy issued Aug. 13, 2020).

³⁵ *Id.*

³⁶ See, e.g., EPA, Office of Inspector General, Improvements Needed in EPA Efforts to Address

CA's Implementation of SB 1371

addressing natural gas pipeline leaks from a combined safety and environmental standpoint. As the federal regulatory program for methane emissions from the oil and natural gas transmission and storage sector is in flux, it is unlikely that such coordination will occur in the near future. Nonetheless, California's experience over the past five years in implementing SB 1371 may be instructive to the extent such a coordinated regulatory program is ever taken up at the federal level.

Methane Emissions from Natural Gas Distribution Pipelines (July 25, 2014) at 12 (noting that EPA and PHMSA have not historically partnered in their regulatory approach and that the "lack of coordinated action between EPA and PHMSA hinders an effective partnership...").