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Final U.S. EPA and California Regulations to Reduce Methane Emissions from Oil & Natural Gas Sector Expected in 2016

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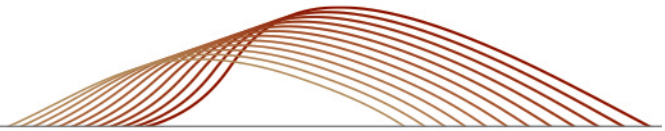
Introduction

In 2015, the U.S. Environmental Protection Agency ("EPA") proposed its first ever regulation to control methane emissions from the oil and natural gas sector. The proposed regulation will amend the agency's existing new source performance standards ("NSPS") for the oil and natural gas source category by setting standards for both methane and volatile organic compounds ("VOC") for specific equipment, processes and activities, including hydraulically fractured oil and natural gas wells. While EPA's proposed regulation is limited to new and modified sources, the California Air Resources Board ("CARB") has circulated a draft regulation establishing greenhouse gas ("GHG") emission standards for fugitive and vented methane emissions from certain new *and* existing oil and natural gas facilities. Both agencies are expected to finalize their respective regulations in 2016 creating extensive, and potentially overlapping, regulatory programs for reducing methane emissions from the oil and natural gas sector in California.

Background

In 2012, EPA finalized its NSPS revision for the oil and gas sector to regulate VOC emissions from gas wells, centrifugal compressors, reciprocating compressors, pneumatic controllers and storage vessels (the "2012 Oil & Gas NSPS").[1] As part of the 2012 Oil & Gas NSPS, EPA did not take final action to address methane emissions from such operations.[2] Rather, the agency decided to "continue to evaluate the appropriateness of regulating methane with an eye toward taking additional steps if appropriate."[3] Soon after EPA finalized the 2012 Oil & Gas NSPS, a number of environmental organizations petitioned EPA to convene a proceeding to reconsider whether to establish such standards of performance, asserting that data necessary to consider whether such a standard was appropriate were available.[4]

Less than a year after EPA adopted the 2012 Oil & Gas NSPS, President Obama released his Climate Action Plan, which proposed a combination of measures aimed at reducing GHG emissions in the United States 17 percent below 2005 levels by 2020.[5] The Climate Action Plan, among other things, directed EPA and five other federal agencies to develop an interagency strategy to reduce methane emissions. Following a series of white papers released as part of EPA's Methane Strategy,[6] the President announced in January 2015 a new goal to cut methane emissions from the oil and natural



gas sector by 40–45 percent from 2012 levels by 2025.[7] EPA's proposed amendments to the 2012 Oil & Gas NSPS (the "Oil & Gas NSPS Amendments")[8] are expected to reduce up to 180,000 tons of methane from affected facilities by 2020 and 400,000 tons by 2025 (or 25–30 percent of the 40–45 percent target).[9] According to EPA, during the 2012 Oil & Gas NSPS rulemaking, data on methane emissions were just emerging, but since then, it has obtained and evaluated the necessary information confirming that the oil and natural gas industry is one of the largest emitters of methane.[10]

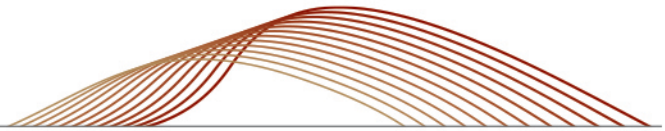
In May 2014, CARB adopted the first amendment to its Scoping Plan, which recommended the development of measures to control fugitive methane emissions from oil and gas production, processing, and storage tanks.[11] In addition, CARB directed its staff to develop a strategy to identify sources and reduce associated emissions of short-lived climate pollutants ("SLCP"), such as black carbon, methane, and fluorinated gases.[12] To that end, CARB proposed in April 2015 draft GHG emission standards for oil and natural gas facilities ("CARB Oil & Gas GHG Standards") and held a series of public workshops regarding its draft regulatory language.[13] The CARB Oil & Gas GHG Standards will affect (1) onshore and offshore oil and natural gas production, processing and storage facilities; (2) natural gas underground storage operations; and (3) natural gas transmission compressor stations.[14] According to CARB, the proposed regulations uniformly expand certain local regulations to all local air districts and include additional infrastructure components that are not currently covered by air district programs.[15]

U.S. EPA Oil & Gas NSPS Amendments

EPA's proposed Oil & Gas NSPS Amendments include standards for methane and VOC for certain new and modified equipment, processes and activities across the oil and natural gas source category. These emission sources include: (1) sources not currently regulated under the 2012 Oil & Gas NSPS,[16] (2) sources currently regulated for VOC, but not for methane under the 2012 Oil & Gas NSPS;[17] and (3) certain equipment used across the source category, but which the 2012 Oil & Gas NSPS regulates VOC emissions from only a subset of such equipment,[18] except for compressors located at well sites.[19]

Best System of Emission Reduction

Section 111(b) of the Clean Air Act grants EPA authority to promulgate NSPS for new, modified, or reconstructed stationary sources that EPA finds "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare."[20] NSPS are to reflect the degree of emission limitation achievable through the application of the best system of emission reduction ("BSER"), which EPA determines has been adequately demonstrated in practice. The Oil & Gas NSPS Amendments set forth operation or work practice standards for the majority of emission sources, based on EPA's conclusion that numerical standards are infeasible for such equipment.[21] In addition, EPA may revise standards of performance by adding emission limits for pollutants not currently regulated for that source category.[22] However, because EPA concluded that BSER for methane and VOC are the same for such equipment, the Oil & Gas NSPS Amendments do not require additional emission control requirements for sources currently regulated under the 2012 Oil & Gas NSPS.



The Oil & Gas NSPS Amendments identify BSER for controlling methane and VOC from the following emission sources:

Well Completions at Hydraulically Fractured Oil and Natural Gas Wells

Subcategory 1 Wells: Hydraulically Fractured Non-Wildcat[23] *and Non-Delineation Wells*[24]

- Combination of gas capture and recovery (i.e., Reduced Emissions Completion or "REC") and completion combustion devices to minimize venting of gas and condensate vapors.[25]

Subcategory 2 Wells: Hydraulically Fractured Exploratory and Delineation Wells

- Use of a combustion device to minimize venting during the completion operations.[26]

Fugitive Emission Components at Well Sites and Compressor Stations

- Development of fugitive emissions monitoring plan and repair, recordkeeping and reporting requirements.[27]

Pneumatic Controllers

- In the production and transmission and storage segments, low-bleed controllers rated less than or equal to 6 standard cubic feet per hour (scfh).[28] For the processing segment, zero natural gas bleed rate by operating an instrument air system (in place of natural gas) to drive the controllers.[29]

Pneumatic Pumps

- In the production and transmission and storage segments, routing emissions to an existing control device or process.[30] For the processing segment, operating an instrument air system (in place of natural gas) to drive the pumps.[31]

Reciprocating Compressors

- Replace rod packing every three (3) years of operation. As an alternative, routing of emissions from the rod packing to a process through a closed vent system under negative pressure is permissible.[32]

Centrifugal Compressors

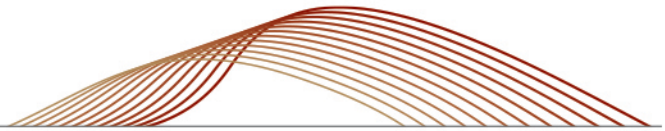
- Capturing and routing of emissions to a combustion control device. As an alternative, use of dry seal systems and routing emissions to a process is permissible.[33]

Equipment Leaks at Natural Gas Processing Plants

- Leak detection and repair program at the control level provided for in 40 C.F.R., Subpart VVa.[34]

CARB GHG Emission Standards for Oil and Natural Gas Facilities

CARB is currently working with local air districts and other stakeholders to develop its Oil & Gas GHG Standards for adoption by mid-2016. As noted above, the regulation will address (1) onshore and offshore oil and natural gas production, processing and storage facilities; (2) natural gas underground storage operations; and (3) natural gas transmission compressor stations.[35] While under development, the proposed regulation requires regulated entities to:



1. Install vapor recovery systems on primary and secondary vessels if they exceed 10 metric tons per year of methane, as determined by a flash analysis test procedure.[36] If the vapors cannot be collected using a sales gas system, flue gas system or an underground injection well, a vapor control device with at least 95 percent efficiency must be installed.[37]

2. Install vapor recovery systems on all circulation tanks used in conjunction with well stimulation treatments.[38]

3. For reciprocating natural gas compressors, either: (i) collect the rod packing or seal vent gas with a vapor collection system and route the collected gas to an existing sales gas system, fuel gas system, or vapor control device; or (ii) regularly measure the rod packing or seal vents and replace such components, as necessary.[39]

4. Replace centrifugal natural gas compressor wet seals with dry seals, or collect the wet seal vapors and route the gas to an existing sales gas system, fuel gas system or vapor control device.[40]

5. Operate pneumatic devices and pumps with compressed air or collect the vented gas and route it to an existing sales gas system, fuel gas system or vapor control device.[41]

6. Implement a leak detection and repair ("LDAR") program that requires testing of components for leaks of methane at crude oil and natural gas facilities that are not already covered by an existing LDAR program, and establish a requirement to repair leaks that are above a specified leak threshold of 1,000 parts per million (ppm).[42]

Unlike EPA, CARB proposes requirements specific to unloading liquids from natural gas production wells.[43] In particular, it requires the use of a vapor collection system at wells that are vented to remove liquids that accumulate at the bottom of the production well and inhibit gas flow.[44] According to CARB, it is also investigating ways—including offset requirements—to ensure that there is no net increase in oxides of nitrogen (NOx) emissions in cases where methane and VOC emissions cannot be sent to an existing sales gas system, fuel gas system or vapor control device, and are instead captured by collection and combustion devices on existing storage tanks.[45]

Conclusion

The oil and natural gas industry comprises a wide range of operations and equipment that include wells, gathering lines, processing facilities, compressors, controllers, storage tanks, pumps and pipelines, and is second only to fossil-fuel electricity generation as the largest emitter of GHGs in the United States.[46] The recent natural gas leak in Los Angeles County has renewed calls from environmental organizations for more extensive regulation of methane emissions from the oil and gas industry beyond what EPA and CARB currently propose. Governor Brown recently directed CARB to develop a program to fully mitigate the methane emissions associated with the leak by March 31, 2016, and the Department of Conservation, Division of Oil, Gas and Geothermal Resources to promulgate emergency regulations requiring gas storage and facility operators to comply with new safety and reliability measures.[47] While U.S. EPA and CARB are expected to finalize their respective regulations in 2016, the agencies may consider adopting more stringent LDAR or other requirements as part of the final rules in response to these concerns. The pressure to do so will likely intensify if, as expected, the leak continues for several more months.

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If you have any questions concerning these developing issues, please do not hesitate to contact any of the following Paul Hastings San Francisco lawyers:

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[1] EPA combined the NSPS and National Emissions Standards for Hazardous Air Pollutants elements of the rulemaking into a single Federal Register notice. *See* 77 Fed. Reg. 49,490 (August 16, 2012).

[2] EPA estimates that methane is 28–36 times more potent than carbon dioxide (CO_2) in terms of its global warming potential over a 100-year period. 80 Fed. Reg. 56,606.

[3] 77 Fed. Reg. at 49,513.

[4] *See Sierra Club et al.*, "In the Matter of: Final Rule Published at 77 Fed. Reg. 49490 (Aug. 16, 2012), entitled 'Oil and Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final Rule, Docket N. EPA-HQ-OAR-2010-0505, RIN 2060-AP76.'" (October 15, 2012), at 17–18, http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2010-0505-4575.

[5] Executive Office of the President, The President's Climate Action Plan, at 6 (June 2013), https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf.

[6] The Methane Strategy instructed EPA to complete any new oil and natural gas regulations pertaining to the sources addressed in the white papers by the end of 2016. *See* Climate Action Plan, Strategy to Reduce Methane Emissions (March 2014), https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf.

[7] "FACT SHEET: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions," https://www.whitehouse.gov/the-press-office/2015/01/14/fact-sheet-administration-takes-steps-forward-climate-action-plan-anno-1.

[8] 80 Fed. Reg. 56,593 (September 18, 2015).

[9] *Id*. at 56,654. *See* Comments by Janet McCabe, Acting Assistant Administrator for EPA Office of Air and Radiation, http://www.bostonherald.com/news_opinion/national/2015/08/us_proposes_to_cut_methane_from_oil_gas_by_nearly_half; http://www.fox19.com/story/29812426/us-proposes-to-cut-methane-from-oil-gas-by-nearly-half.

[10] 80 Fed. Reg. at 56,601.

[11] CARB, First Update to Climate Change Scoping Plan, Table 6: Summary of Recommended Actions by Sector, at 94.

[12] CARB Resolution 41-16 (May 22, 2014). SLCP remain in the atmosphere for a much shorter period of time than longer lived GHGs, including CO_2, which is the primary driver of climate change. However, when measured in terms of their global warming potential, SLCP can be tens, hundreds, or even thousands of times more potent than CO_2. CARB, Draft Short-Lived Climate Pollutant Reduction Strategy (September 2015), at 18.

[13] *See* http://www.arb.ca.gov/cc/oil-gas/meetings/meetings.htm.

[14] CARB, Proposed Regulation Order, Article 3: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (April 22, 2015 Draft), http://www.arb.ca.gov/cc/oil-gas/meetings/Draft_Regulatory_Language_4-22-15.pdf.

[15] CARB, Draft Short-Lived Climate Pollutant Reduction Strategy (September 2015), at 52. There are 35 local air quality management districts in California that are responsible for regulating emissions from stationary sources. However, CARB is responsible for adopting and implementing regulations pursuant to AB 32, the 2006 law requiring the State to reduce its GHG emissions to 1990 levels by 2020.

[16] Hydraulically fractured oil well completions, pneumatic pumps, and fugitive emissions from well sites and compressor stations.

[17] Hydraulically fractured gas well completions and equipment leaks at natural gas processing plants.

[18] Pneumatic controllers, centrifugal compressors, and reciprocating compressors.

[19] 80 Fed. Reg. at 56,594–95.

[20] 42 U.S.C. § 7411(b)(1)(A).

[21] *See id*. § 7411(h) (permitting EPA to promulgate a work practice standard or other requirements, which reflects BSER, when it is not feasible to enforce an emission standard).

[22] *Id*. § 7411(b)(1)(B).

[23] A wildcat well, also referred to as an exploratory well, is a well drilled outside known fields or are the first well drilled in an oil or gas field where no other oil and gas production exists. 80 Fed. Reg. at 56,611.

[24] A delineation well is a well drilled to determine the boundary of a field or producing reservoir. *Id*.

[25] *Id*. at 56,630.

[26] *Id*. at 56,632.

[27] *Id*. at 56,637.

[28] *Id*. at 56,624.

[29] *Id*. at 56,610; 56,624.

[30] *Id*. at 56,627. This option results in a 95 percent reduction of emissions for both methane and VOC. *Id*.

[31] *Id*.

[32] *Id*. at 56,622. This BSER does not include use of reciprocating compressors located at well sites. *Id*.

[33] *Id*. at 56,620.

[34] *Id*. at 56,644.

[35] CARB, Proposed Regulation Order, Article 3: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (April 22, 2015 Draft), http://www.arb.ca.gov/cc/oil-gas/meetings/Draft_Regulatory_Language_4-22-15.pdf.

[36] Tit. 17 Cal. Code Regs., § 95213(a) (April 22, 2015 Draft).

[37] *Id*. § 95213(c).

[38] *Id*. § 95213(b).

[39] *Id*. § 95213(d), (e).

[40] *Id*. § 95213(f).

[41] *Id*. § 95213(g).

[42] *Id*. § 95213(i)(2).

[43] *See* 80 Fed. Reg. at 56,644 (explaining EPA's conclusion that it does not have sufficient information to propose a standard for liquids unloading).

[44] Tit. 17 Cal. Code Regs., § 95213(h) (April 22, 2015 Draft). In alternative, the volume of natural gas vented to remove the accumulated liquids can be measured by direct measurement or calculated and reported to CARB. *Id*.

[45] Draft Short-Lived Climate Pollutant Reduction Strategy (September 2015), at 52. As required by SB 1371 (2014), GHG emissions from oil and gas pipelines are being addressed in a proceeding before the California Public Utilities Commission. *See* CPUC R.15-01-008.

[46] 80 Fed. Reg. at 56,598.

[47] Proclamation of a State of Emergency, Edmund G. Brown, Jr., Governor of the State of California (January 6, 2016), https://www.gov.ca.gov/news.php?id=19264.