devon

Devon Energy Corporation
20 North Broadway
Oklahoma City, OK 73102-8260

Richard Luedecke
405 228 4279 Phone
Richard.Luedecke@dvn.com

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Mr. Bruce Moore
Sector Policies & Programs Division
Mail Code: E143-05
Research Triangle Park, NC 27711
Moore.Bruce@epa.gov

Re: Oil and Natural Gas Sector Consolidated Rulemaking, Docket ID No. EPA-HQ-OAR-2010-0505

Dear Mr. Moore:

Devon Energy Corporation is very concerned that the proposed New Source Performance Standard (NSPS) and National Emission Standards for Hazardous Air Pollutant (NESHAP) rules dated August 23, 2011, are seriously flawed and must be withdrawn or significantly modified because the flaws cause overstatement of potential environmental benefits and understatement of potential costs to achieve them.

In the detailed comments below, Devon will show that the proposal is based in significant part on seriously overestimated emissions of natural gas – and proportional emissions of gas stream volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) – from natural gas wells by 1,200 percent or more. The rule should be set aside until the adoption of realistic estimates that provide the basis for reasonable benefit and economic analyses of the proposal. Otherwise, it should be significantly modified in light of incorrect conclusions as to costs and benefits. Our comments also include other areas in which improvements are needed.

Headquartered in Oklahoma City, Devon is a leading independent oil and gas exploration and production company. Devon's operations are focused onshore in the United States and Canada. We also own transmission and processing assets in many of our production areas, making us one of North America's larger producers of natural gas liquids. Devon is among the largest U.S.-based independent oil and natural gas producers. As such, we are pleased to offer these comments. And while we support the Environmental Protection Agency's effort toward ever-improving environmental quality standards, we have important concerns with the proposed rule that we address below and that are included in comments by American Petroleum Institute (API), the American Natural Gas Alliance (ANGA) and the Gas Processors Association (GPA).

Flawed Methodology – Unconventional Well Emissions

The EPA assumes that 9,175 mscf of natural gas is emitted from most unconventional well completions. This emission factor was derived using a flawed methodology and is incorrect.

The 9,175 factor is published in the EPA's 2010 Greenhouse Gas Emission Reporting from the Petroleum and Natural Gas Industry Technical Support Document (GHG TSD) and has been used to inform this proposed rule.

Problems with the EPA's methodology are discussed at length in a recent IHS CERA report (Attachment A), in a position paper developed by Devon (Attachment B), and in a testimony provided by Devon (Attachment C) at the public comment hearing held Sept. 29, 2011, in Arlington, Texas. The following are significant findings of these documents:

- The EPA assumes that the volume of gas captured from performing a green completion is the same volume of gas emitted when green completions are not performed. This assumption is invalid.

- IHS CERA states *"EPA derives its new emissions factor from two slide presentations at Natural Gas STAR technology transfer workshops, one in 2004 and one in 2007. These two presentations primarily describe methane that was captured during "green" well completions, not methane emissions. EPA assumes that all methane captured during these green completions would have been emitted in all other completions. This assumption does not reflect industry practice."*

- It is unknown how the Natural Gas Star data was calculated. It is not known whether consistent methods were used or how robust the data is. Green completion or reduced emission completion reporting under the Natural Gas Star Program was never meant to represent emissions from wells that were not green completed. The quality of this data and what it represents is questionable.

- EPA assumes that producers vent to the atmosphere during flowback, rather than commonly flaring or capturing emissions, in those states that do not mandate flaring or recovery.

- Research studies and reports that estimate the life-cycle greenhouse gas emission from unconventional gas are using this gross overestimate. The potential policy implications of this could be damaging to the natural gas industry.

Devon questioned the credibility of this emission factor. If true, it would mean that Devon would be losing more than $305 million per year to the atmosphere. Knowing that the actual emissions from the industry must be much smaller, Devon launched an internal data collection effort to provide the EPA with actual emission estimates from unconventional gas wells. Devon used the EPA-endorsed equation from Subpart W and some conservative (overestimating) assumptions to calculate these emissions. Please see the attached methodology (Attachment D) for more information.

Devon's data effort revealed that actual well completion emissions from 49 wells, spread over 10 U.S. hydrocarbon basins, was 6.7% of the EPA estimate. Additionally, Devon performs advanced early production process[1] (or AEPP) completions on 91% (vs. EPA's 15%) of the wells and flared emissions from 57% (vs. EPA's 51%) of the wells that couldn't be completed with AEPP. Please see the attached summaries (Attachments E & F) for more detailed information.

Devon met with EPA representatives from the climate program, the Natural Gas Star program and the Office of Air Quality Planning and Standards on October 21, 2011, to discuss the flawed methodology, the results of the Devon study, and to request that the EPA revert to its original well completion emission factor in light of this evidence. EPA committed to continuing work to address Devon concerns but would not consider an emission factor change until more data was received from the rest of our industry.

Devon, working with ANGA, coordinated an industry effort to provide EPA with this data. A total of seven (7) companies participated in the second data collection effort and, provided data on approximately 1,200 wells. This effort resulted in the following:

- A completion emissions estimate of only 8.3% of the EPA estimate;
- 92% of the wells were AEPP completed;

[1] The term advanced early production process or AEPP is synonymous to green completion (GC) or reduced emission completions (RECs), but Devon prefers AEPP because it more accurately describes the purpose of this activity, which is to allow wells to be produced earlier than would be possible without the use of temporary flowback equipment.

- 55% of the non AEPP wells were flared instead of vented. Please see the attached URS memo (Attachment G) for additional information.

The well completion emission factor of 9,175 mcf/completion in the 2010 GHG TSD is an overestimate of emissions from the natural gas industry. This factor was used in this rulemaking to justify a requirement for green completions. Devon asks the EPA to acknowledge the data provided by industry and use it to reevaluate its economics for controlling completion emissions. Devon also asks EPA to accept this data as the basis for the development on an emissions factor for unconventional well completions. Devon requests that the proposed rule be suspended until reliable emission estimates reflective of the industry are available.

General Comments

The extensive notification, monitoring, recordkeeping, performance testing, and reporting requirements impose a significant burden on operators while providing no benefit to the environment. It is imperative that the EPA spend adequate time omitting, streamlining and optimizing these processes to avoid these costly, no value added requirements. These administrative burdens act as disincentives for pro-environmental efforts. For instance, an operator may overlook potential emission saving changes at a site just to avoid the burden of recordkeeping, monitoring and reporting that would result if the change would be deemed a facility modification.

Industry has requested a 60-day rule deadline extension. Devon supports this. A rule of this impact and magnitude requires more time to review and implement.

Completions

In light of the results from the flawed methodology section, Devon strongly urges the EPA to reevaluate its economic evaluation for well completion controls, and suspend the rule until reliable emission estimates reflective of the industry are available.

If EPA still proposes to require controls for well completions, a one year phase in period is critical. Lack of equipment availability will prevent operators from controlling emissions on all applicable completions. A period of one year should be sufficient for industry to push for increased equipment availability. This phase-in period would need to apply to both AEPP and flare equipment.

EPA must understand that AEPP completions are not always possible. The more rural and less mature an area is, the less likely it is that temporary flowback equipment will be available. Third-party pipeline to a well site prior to the well's completion often is difficult to coordinate because of ever-changing drilling and completion schedules. Conversely, the more developed an area is, the more likely business will be established to provide this equipment/service and that a greater pipeline infrastructure will exist. Lack of local equipment availability and pipeline infrastructure can dictate whether a well is completed with AEPP.

There are other reasons why AEPPs or flaring are not feasible, many of which will be submitted in ANGA/AXPC and API comment packages. However, below are more common instances specific to Devon:

- As previously mentioned, waiting on third party pipeline. AEPP not possible.

- Oil and gas regulators often restrict the size of multi-well pads on public land. Often, the size of the well pad is too small to accommodate temporary AEPP equipment for all the wells in flowback. In these cases, some of the wells cannot use AEPP and are flared instead.

Similar to how the layout of permanent production varies site by site, so does the use of temporary production equipment. It is not valid for the EPA to prescribe equipment used during AEPPs. It should be left up to the service company and operator to decide how to best handle AEPPs.

Storage Vessels
Mandatory VOC control of storage vessels based on a throughput threshold is not valid. An emission threshold must be an option.

For instance, low-pressure separation technology can effectively eliminate most flashing emissions from tanks. Although throughput can be much higher than the 1 bcpd or 20 bopd, emissions can be much lower than 6 tpy VOC.

A cost analysis performed by API concludes that a 6 tpy VOC threshold is not cost effective. Furthermore, emission controls for tanks are not cost effective until a threshold of 12 tpy VOC is reached. Devon recommends a tank VOC emissions threshold of 12 tpy rather than 6. Additional information can be found in API comments.

Production decline could also prove costly. We request that the use of mandatory control equipment not be a "once in always in" situation and that the EPA provide a threshold where control equipment be removed and used elsewhere.

Pneumatics
Devon does not support the use of 6 scfh as the cutoff to categorize a pneumatic controller as either high or low bleed. There is no available justification for this number. Manufacturers are hesitant to certify their equipment as either high or low bleed based on this arbitrary number. Without certification, an Operator cannot know whether the equipment being changed is in compliance with the rule. A higher bleed rate cutoff is needed to give manufacturers the ability to certify their equipment as either high or low bleed.

Compressors
Although not as common as reciprocating engines in Devon, centrifugal engines could cost as much as $1 million to retrofit from wet seals to dry seals. Rather, a cheaper and just as effective alternative would be to provide an option for Operators to control emissions from wet seals.

After discussions with compressor technicians, Devon believes that changing out rod packing every three years should be extended to five. To minimize unnecessary shutdowns, rod packing is most conveniently changed during major maintenance programs. Devon believes that every compressor would have major maintenance work every five years.

Equipment Leaks
EPA has no justification to require a change in the definition of a leak from a 10,000 ppm VOC to 500 ppm VOC. Data from API shows that potential emission reductions from lowering the threshold to 500 ppm would contribute only a fraction to the current threshold. Devon asks the EPA to reevaluate its cost estimation data based on comments from API and GPA. The result will be less cost effective, if cost effective at all.

Summary
Devon is committed to continuing to work with the EPA on this important rulemaking. However, it is seriously flawed to the extent that overestimates of methane, VOC and HAP emissions from natural gas wells cause overstatement of benefits and understatement of costs. The rule should be put aside or significantly modified to address these flaws. In addition, there are other parts of the proposed rule that should be amended before final adoption.

Please contact Darren Smith at 405-228-8584 if you have any questions or would like to discuss any of our comments.

Sincerely,

Richard Luedecke
VP EHS
Devon Energy

Cc: Bill Whitsitt - Devon
Dave Hager - Devon
Darren Smith - Devon
Joe Leonard - Devon
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