Producers Association-EPA Meeting on Reconsideration of Subparts OOOOb and OOOOc, March 10, 2025

Existing Source Issues

1. Understanding marginal wells
    a. There are about 750,000 marginal wells roughly divided equally between oil and natural gas.
        i. 600,000 are six boe/d and less.
        ii. 300,000 are one boe/d and less.
    b. As these wells deplete and move to lower production, their operating characteristics change.
    c. Oil wells differ from natural gas wells.
        i. Natural gas wells can operate more closely to 24 hours per day, but many must have natural gas sucked from the well because its internal pressure has diminished.
        ii. Oil wells, particularly as they reach the 0-2 b/d production volumes do not operate 24/7.
            1. They may be on automatic pumping a few hours per day or they may one or a few days per week.
            2. Their methane emissions are associated gas which has diminished throughout the life of the well.
        iii. These dynamics affect their emissions profiles and their ability to meet the requirements of the federal methane regulations and emissions guidelines.
    d. A thorough understanding of the emissions profiles of these wells does not exist; the DOE Marginal Wells Study is the only effort that tries to raise these issues but its database is limited.
    e. Analyses of the Subpart OOOOb regulations and, particularly, the Subpart OOOOc Emissions Guidelines conclude that about 300,000 marginal wells will be shut down as a result of their requirements.
        i. These consequences are primarily a result of the pneumatic controller and Leak Detection and Repair (LDAR) requirements.
        ii. They can be avoided or significantly mitigated if cost effective measures are chosen.
        iii. Much can be learned from the DOE Marginal Wells Study.
2. Assessing the DOE Marginal Wells Study
    a. EPA's reference to the DOE study largely focuses only on its conclusion that marginal wells can account for half of US methane emissions.
        i. It fails to observe that its estimates are 25 percent of the EDF studies.
        ii. It fails to address the key information on the nature of the emissions.

b. The DOE study identified numerous factors that can affect emissions and help develop profiles.
c. For industry, the most significant factor affecting their operations is the production rate while EPA focuses primarily on component counts.
d. The DOE study reports that 90 percent of emissions come from 10 percent of operations, but more information can be derived from the details of the study
    i. The predominant sources are leaking tanks (open thief hatches and leaking seals), failure of some pneumatic controllers and failure to close vents.
e. Focusing a control strategy on these components would dramatically reduce marginal wells emissions and such a strategy can be crafted far more cost effectively than the current EPA regulations/emissions guidelines.
f. A rough evaluation of the emissions data presented in the DOE study indicates that by addressing the high emissions sources with cost effective actions, average marginal well emission can drop by about 1 ton/year to about 0.5 tons/year, with some as low as 0.1 tons/year.

3. Natural Gas Pneumatic Controllers
    a. Marginal wells have a limited number of pneumatic controllers, and the overwhelming majority will be intermittent controllers.
        i. In EPA's analysis of BSER for pneumatic controllers for both Subpart OOOOb and OOOOc, EPA assumes that for "small" facilities there would be 2-4 intermittent bleed controllers.
    b. However, EPA's emissions calculations are based on flawed emissions factors and inconsistent application of the factors given the EPA regulatory framework.
    c. Depending on the iteration of the OOOOc regulatory proposal, EPA used either 13.5 scf/h or 8.8 scf/h as the emissions factor for intermittent controllers. Neither of these reflects EPA's approach to assessing emissions from intermittent controllers that would now use a mix of emissions factors with one for failed controllers (24.1 scf/h) and one for properly operating controllers (0.3 scf/h). Based on experienced analysis of failure rates, this analysis shows that the natural gas pneumatic controllers replacement technologies were not cost effective for any sized production facility – and therefore least effective for small facilities.
    d. Even this analysis overstates the emissions amounts because under the EPA LDAR requirements, quarterly monitoring is required which would identify failed pneumatic controllers within three months. Based on this approach a properly operating pneumatic controller would emit less than 0.05 tons/year of methane.
    e. These analyses are consistent with information supplied by the API that it would take 15 to 30 pneumatic controllers at a site to reach EPA's test for cost effectiveness – clearly a number that would never be present at a marginal well.
    f. Use of a cost effective LDAR program can readily manage pneumatic controller emissions at marginal wells.

4. Leak Detection and Repair
    a. EPA's LDAR program is not cost effective for marginal well sites.
    b. EPA's focus on component counts as its basis for creating LDAR categories produces unrealistic collections of well sites in inappropriate categories.
        i. Most notably, EPA's component count approach forces marginal wells into the LDAR category designed for large facilities.
        ii. This result is critical in the analyses showing that 300,000 marginal wells will be shut down because of this action.
    c. The key issue relates to EPA's Category 3 LDAR requirements and definition.
        i. The Category 3 requirements of quarterly OGI LDAR are far more costly than the small well site quarterly AVO LDAR.
        ii. The component count structure of Category 3 captures the substantial majority of marginal wells.
            1. A brief review of marginal well sites at facilities across the country indicates that approximately 70 to 90 percent of marginal wells will fall into Category 3.
    d. EPA argues that Category 3 was created because these component counts reflect the types of facilities that produce Super Emitters.
        i. EPA's definition of a Super Emitter amounts to an emissions rate of about 130 mcfd.
        ii. The maximum production rate of a marginal well is 90 mcfd; the average marginal natural gas well produces 22 mcfd; the tier of marginal natural gas wells most affected by the excessive LDAR requirement would be about 6 mcfd.
        iii. It is impossible for marginal wells to emit at the rate of a Super Emitter.
    e. The Producer Associations raised the potential for this consequence in its 2022 comments on the proposed Subpart OOOOb/OOOOc regulations and recommended some options.
        i. For example, it suggested for a small well site that the criteria should be: A booster compressor or a well site with production of 6 boe/day based on definition at 26 USC 613A(c)(2)(A) and no more than 220 components with no more than 2 uncontrolled tanks, no other component limitations.
        ii. Other recommendations that mixed production rates for marginal wells and component counts would also provide a more realistic assessment of the emissions profile of marginal wells.
5. Associated Gas
    a. EPA's initial analysis of associated gas did not consider different volumes from older wells; EPA later developed its lower emissions existing source emissions guidelines for facilities emitting less than 40 tons/year of methane.
        i. Requires flaring as a minimum technology.

ii. EPA's initial BSER analysis assumed emissions of 344 tons/year which is about 45 mcfd; even at 40 tons/year the emissions are about 5 mcfd.

b. Low production wells are a different emissions profile than EPA's model.
   i. Low production oil wells in the 0-6 boe/d range contain many wells that do not operate continuously.
      1. Wells may operate on a timer (3 hours/day) or limited days per week (3 days/week; one day/week).
   ii. Associated gas volumes diminish with production depletion; no emissions without production.
      1. DOE study indicates that the entire site emissions for oil wells from 0-6 boe/d would range from 0.017 mcfd to 0.24 mcfd.

c. EPA states that it believes flaring is the minimum requirement for all oil well associated gas emissions.
   i. EPA never evaluated the application of flaring to associated gas volumes that small wells intermittently produce.

d. 2022 RTC indicates that EPA recognizes potential small well issues on flaring but dumps issue to RULOF determination.

6. Section 111(d)
   a. BSER
      i. EPA chose to meet its responsibility to develop its existing source BSER for oil and natural gas facilities by paralleling its designated facilities to its NSPS BSER affected facilities.
      ii. This choice allowed EPA to avoid creating a cost benefit analysis that reflected the full impact of the collective regulations on marginal wells.
         1. Separating the LDAR requirements from the pneumatic controller requirements prevented the calculations that now show that collectively they will result in the shutdown of 300,000 wells.
   b. Subcategorization
      i. EPA chose not to use its authority to subcategorize existing sources thereby preventing the flexibility that would have been available for marginal wells
      ii. The oil and natural gas production industry and its ancillary industries like gathering and boosting operations are a clear example of the opportunity to use subcategories to regulate effectively.
         1. Oil wells differ from natural gas wells, large wells differ from small ones, conventional wells differ from unconventional wells.
         2. Subcategorization could use these differences to more realistically devise control requirements.

iii. EPA's failure to subcategorize results in devising control requirements across the universe of wells that result in inappropriate technology applications.

c. RULOF determination
   i. Section 111(d) provides for the differentiation of control requirements based on the remaining useful life of facilities and other factors, but its availability is questionable the way EPA has constrained its use.
   ii. Process
      1. Subpart Ba provides that RULOF can be applied to facilities or classes of facilities but there is no clarity regarding the creation of classes of facilities.
      2. The state planning process in Subpart Ba and Subpart OOOOc appears to require that states make their RULOF determinations at the time of submission of their plans.
         a. This process is unworkable for the oil and natural gas production industry because of the thousands of marginal wells that are threatened by the emissions guidelines requirements.
      3. If there is no subcategorization/no classes of facilities, it will not be possible for states to make their RULOF decisions in the time period of the planning process.
   iii. Requirements
      1. Subpart Ba provides that states may use trading and averaging as part of their state plans, but EPA forbids trading in Subpart OOOOc and limits averaging to use within designated facilities
         a. EPA created its myriad designated facilities – decisions that put in jeopardy at least 300,000 marginal wells – and then forbids logical averaging options to reduce compliance costs.
      2. EPA constrains the use of RULOF by arguing that it cannot be applied unless there is significant capital expenditures while knowing that the most significant regulatory challenge in the Subpart OOOOc emissions guidelines for marginal well will be the LDAR regulations.

New/Modified Source Issues

1. Storage Tanks
   a. Storage tank batteries are essential to oil and natural gas production to manage oil, natural gas liquids and even produced water.

b. Storage tank batteries or on-site tanks are developed to manage the initial production at a facility. Sometimes, they must be expanded as production at the facility increases. But, over time, as production decreases, there is more capacity than is necessary. However, many times, tanks are not removed because they may be useful in the future.
c. Tank usage can shift moving production from one tank to another based on production or maintenance needs. Additionally, it is common in conventional marginal well fields to drill new wells as old ones are taken out of service. These wells may operate at a higher production level for some months before they decline to marginal well status.
d. EPA's storage tank regulations create significant operational problems for little or no environmental benefits, particularly over the long term.
    i. EPA's requirement that a tank is considered modified and subject to Subpart OOOOb requirements if a tank receives production from a new well – whether that is an actual new well or an existing well routed to a different tank – results in costly, perhaps infeasible requirements.
    ii. Old tanks – those not subject to Subpart OOOO – supporting marginal well production cannot be modified to recover vapors safely if they are not structurally designed for it.
e. EPA needs to revise these regulations to recognize the complexity of their operations and produce cost effective requirements.