Interstate Natural Gas Association of America

VIA ELECTRONIC MAIL

November 22, 2011

Environmental Protection Agency
Attention Docket ID Number EPA–HQ–OAR–2010–0505
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: EPA Docket No. EPA–HQ–OAR–2010–0505; Comments regarding the Proposed Rule, *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews*, 76 Fed. Reg. 52738 (Aug. 23, 2011)

Dear Docket Clerk:

The Interstate Natural Gas Association of America (INGAA), a trade association of the interstate natural gas pipeline industry, respectfully submits these comments regarding the Proposed Rule, *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews*, 76 Fed. Reg. 52738 (Proposed Rule) dated August 23, 2011 (76 FR 52738 to 52843). INGAA's comments address the portions of the Proposed Rule that impact the transmission and storage segments of the natural gas industry, including: (1) proposed amendments to Title 40, Part 63, Subpart HHH of the Code of Federal Regulations (typically referred to as the Transmission and Storage NESHAP); and (2) the proposed New Source Performance Standard (NSPS), titled "Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution" (Part 60, Subpart OOOO).

INGAA is compelled to comment because INGAA members operate equipment affected by the Proposed Rule. In addition to this comment letter, INGAA submitted a comment letter on October 11, 2011 that expresses concerns regarding the need for the proposed NSPS for the natural gas transmission and storage segments of the industry.

INGAA member companies transport more than 85 percent of the nation's natural gas, through some 190,000 miles of interstate natural gas pipelines. INGAA member companies operate over 6,000 stationary natural gas-fired spark ignition internal combustion engines and 1,000 stationary natural gas-fired combustion turbines. These engines and turbines are installed at compressor stations along the pipelines to transport natural gas to residential, commercial, industrial and electric utility customers. Natural gas transmission and storage (T&S) facilities will be affected by the proposed NSPS and major source facilities with glycol dehydrators will be affected by proposed amendments to Subpart HHH.

INGAA comments are detailed in the document that follows this letter, and the comments address a number of topics associated with the Proposed Rule's applicability, standards and

implementation, including the administrative burden attributable to reporting and recordkeeping. An overview of key issues includes:

- The justification for regulating volatile organic compounds (VOCs) from natural gas transmission and storage sources is questionable and Subpart OOOO is not adequately supported. It appears that the proposed NSPS is a thinly veiled attempt to regulate T&S greenhouse gas (GHG) emissions.
- To mitigate VOC emissions, Subpart OOOO should only regulate T&S affected sources in VOC service – i.e., where the natural gas exceeds ten weight percent VOC. This threshold is in the existing NSPS (Subpart KKK) and also in §60.5400(f) of the Proposed Rule for natural gas processing plants.
- Subpart OOOO should not imply that "natural gas" is a regulated pollutant and the rule-specific definition of modification that refers to natural gas should be deleted.
- For pneumatic controllers, the affected source should be a continuous bleed pneumatic controller located at a gas processing plant or upstream of gas processing.
- Reconstruction and modification provisions should *not* apply to existing sources under Subpart OOOO.
- If Subpart OOOO requirements for the T&S sectors are retained, the requirements should be limited to affected sources within the facility fence line and reporting and recordkeeping should be simplified. Otherwise, unnecessary burden would be introduced for permitting, reporting, and recordkeeping without commensurate benefit. Unreasonable burden would be especially problematic for pneumatic controllers.
- EPA should clarify that storage tanks in the natural gas transmission and storage sectors are excluded from Subpart OOOO.
- Subpart HHH revisions that would eliminate the one ton per year (TPY) benzene compliance option should be clearly differentiated from the one TPY benzene criterion that define whether a dehydrator is a large or small unit.
- The Subpart HHH MACT floor analysis should be revisited to assess emissions variability and consider alternatives to the very limited data from the original rulemaking.
- Proposed compliance assurance approaches, including affirmative defense, third party verification, and electronic reporting, should be revised or excluded from the Final Rule.

INGAA appreciates your consideration of these comments. Please contact me at 202-216-5935 or lbeal@ingaa.org if you have any questions. Thank you.

Sincerely,

Lisa S Beal

Lisa Beal
Vice President, Environment and Construction Policy
Interstate Natural Gas Association of America

cc: Bruce Moore, EPA OAQPS
Peter Tsirigotis, EPA OAQPS

COMMENTS ON PROPOSED OIL AND NATURAL GAS SECTOR RULES:
"Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews"

Proposed Revisions to Title 40 of the Code of Federal Regulations

Part 60, Subpart OOOO and Part 63, Subpart HHH

76 Federal Register 52738, August 23, 2011

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November 22, 2011

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"Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews"

The Interstate Natural Gas Association of America (INGAA), a trade association of the interstate natural gas pipeline industry, submits these comments on the Proposed Rule, *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews*, 76 Fed. Reg. 52738 (Proposed Rule) dated August 23, 2011. INGAA's comments address the portions of the Proposed Rule that impact the natural gas transmission and storage segments of the industry, including:

(1) Proposed amendments to Title 40, Part 63, Subpart HHH of the Code of Federal Regulations (typically referred to as the Transmission and Storage NESHAP); and

(2) The proposed New Source Performance Standard (NSPS), titled "Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution" (Part 60, Subpart OOOO).

In addition to detailed comments submitted on November 22, 2011, INGAA submitted a comment letter on October 11, 2011 that expresses concerns regarding the need for the proposed NSPS for natural gas transmission and storage.

INGAA's comments address a number of topics associated with the Proposed Rule's applicability, standards and implementation. An overview follows.

- The justification for regulating volatile organic compounds (VOCs) from natural gas transmission and storage sources is flawed and Subpart OOOO is not adequately supported. Data from optimal scenarios from the voluntary Natural Gas STAR program should not be used as the basis for a rulemaking.
- EPA analysis over-estimates VOC emission reductions and under-estimates costs. For example, EPA does not adequately consider administrative costs associated with reporting, recordkeeping, and permitting. A primary contributor to over-estimates of VOC reductions is EPA's failure to consider that proposed requirements for low-bleed pneumatic controllers, reciprocating compressor rod packing maintenance, and dry seals for centrifugal compressors would be commonly implemented as current practices absent the rule. For example, nearly all new centrifugal compressors include dry seals without this rule.
- EPA's projected (and over-estimated) VOC reductions for transmission and storage are minimal – totaling 64 tons per year nationwide for the three affected source types. Such trivial reductions do not warrant regulation. Thus, it appears that Subpart OOOO is a thinly veiled attempt to regulate transmission and storage greenhouse gas (GHG) emissions.
- It is imperative that a regulation pursuing VOC reductions include a VOC applicability threshold. VOC reductions cannot be achieved from natural gas that does not contain meaningful amounts of VOCs. Subpart OOOO should only regulate affected sources "in

VOC service" – i.e., where natural gas contains more than ten weight percent VOC. This threshold is in the existing NSPS (Subpart KKK) and also in §60.5400(f) of the Proposed Rule for natural gas processing plants.

- Subpart OOOO should not imply that "natural gas" is a regulated pollutant. The rule-specific definition of modification that refers to natural gas should be deleted.
- EPA should reconcile similar nomenclature and definitions in Subpart O and the GHG reporting rule (40 CFR, Part 98, Subpart W). Since Subpart W reporting is intended to *inform future rules* associated with the source types proposed for regulation in Subpart OOOO, both rules should not be required. If EPA adopts emission reduction rules (i.e., Subpart OOOO), Subpart W reporting for those sources should not be required.
- Subpart OOOO inappropriately defines a pneumatic controller – a small, component-level part – as a "facility". This proposal goes well beyond prior Part 60 regulations where a facility is either a large stationary source or a substantial piece of equipment (e.g., a boiler).
- For pneumatic controllers, the affected source should be a continuous bleed pneumatic controller located at a natural gas processing plant or located upstream of gas processing.
- Pneumatic controllers are small, component-level parts, and EPA should regulate this product through a manufacturer certification program. EPA should allow an implementation period to develop the program and to allow existing inventories to be depleted.
- Reconstruction and modification provisions should *not* apply to existing sources under Subpart OOOO.
- If transmission and storage sources are retained in Subpart OOOO, the requirements should be limited to affected sources within the facility fence line, and reporting and recordkeeping should be simplified. Otherwise, unnecessary burden would be introduced for permitting, reporting, and recordkeeping without commensurate benefit. Unreasonable burden would be especially problematic for pneumatic controllers.
- Reciprocating compressor rod packing maintenance should be based on longer time intervals and allow condition-based maintenance.
- EPA should clarify that storage tanks in the natural gas transmission and storage sectors are excluded from Subpart OOOO.
- Subpart HHH revisions that would eliminate the one ton per year (TPY) benzene compliance option should be clearly differentiated from the one TPY benzene criterion that define whether a dehydrator is a large or small unit.
- The Subpart HHH MACT floor analysis should be revisited to assess emissions variability and consider alternatives to the very limited data from the original rulemaking.
- EPA should reconcile and revise several Subpart HHH testing and monitoring requirements and present the requirements in tables to more clearly present these criteria.
- Proposed compliance assurance approaches, including affirmative defense, third party verification, and electronic reporting, should be revised or excluded from the Final Rule. The affirmative defense provisions should be revised to more appropriately address malfunction events.

INTRODUCTION

The Interstate Natural Gas Association of America (INGAA), a trade association of the interstate natural gas pipeline industry, respectfully submits these comments regarding the Proposed Rule, *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews*, 76 Fed. Reg. 52738 (Proposed Rule) dated August 23, 2011 (76 FR 52738 to 52843). INGAA's comments address the portion of the Proposed Rule that impact the transmission and storage segments of the natural gas industry, including: (1) proposed amendments to Title 40, Part 63, Subpart HHH of the Code of Federal Regulations (typically referred to as the Transmission and Storage NESHAP); and (2) the proposed New Source Performance Standard (NSPS), titled "Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution" (Part 60, Subpart OOOO).

In addition to these comments, INGAA submitted a comment letter on October 11, 2011 that expresses concerns regarding the need for the proposed NSPS for the natural gas transmission and storage segments of the industry. The detailed comments that follow address key issues related to the Proposed Rule's costs and emission reduction benefits, its applicability, and implementation issues such as reporting and recordkeeping. Of paramount concern are comments that discuss the need for a volatile organic compound (VOC) applicability threshold and an exclusion covering at least some small emission sources in the natural gas transmission and storage (T&S) sectors. INGAA's detailed comments follow and sub-headings are provided to organize comments into topical areas.

INGAA Comments

Subpart OOOO Technical Support and Need for a VOC Applicability Threshold

1. **EPA does not have reliable data to establish that meaningful, cost-effective VOC emission reductions will be achieved for the affected emission sources. Potential VOC reductions from the natural gas transmission and storage sectors are not significant and EPA has not properly justified or adequately supported the imposition of Subpart OOOO on these sectors.**

The EPA data and analysis cannot reliably establish that meaningful, cost-effective VOC emission reductions would be achieved for the affected emission sources in the natural gas transmission and storage sectors. This is especially relevant because VOC content of pipeline quality natural gas (i.e., processed natural gas) is relatively low. EPA's reliance on data from the voluntary Natural Gas STAR program is inappropriate because that data is likely to either be biased high due to the reporting goals of that voluntary program, or based on data from an original EPA-Gas Research Institute (GRI) study that was conducted nearly 20 years ago.

EPA has adopted a GHG mandatory reporting rule (MRR) in 40 CFR, Part 98. Subpart W of the GHG MRR is intended to compile information on vented emissions and equipment leaks from natural gas systems. EPA has repeatedly stated that the intent of Subpart W reporting is to inform *future* rulemakings to address natural gas venting and equipment leaks, and initial Subpart W reports will not be submitted until September 2012. Until data from Subpart W

reporting is available, EPA's cost-benefit analysis lacks a reliable foundation and regulating natural gas transmission and storage sources through Subpart OOOO is thus premature.

There are additional flaws in EPA's analysis and a summary of the issues includes:

- Data from a voluntary reporting program that selectively reported voluntary reductions of natural gas venting and equipment leaks includes a high bias for reported reductions because example projects are not indicative of "average" operations.
- Emission reductions are over-estimated and costs are under-estimated, especially for the *incremental* emissions reductions that would result from additional actions beyond current practices.
- In addition to emission estimate biases, cost estimates fail to include administrative costs that would be relatively significant because of their association with regulation of small emission sources. For example, as discussed in comments below, regulating pneumatic controllers in the T&S sectors would impose significant relative costs associated with permitting *individual pneumatic controllers* and recordkeeping costs to document the exempt status of the vast majority of excluded controllers.
- The measures associated with affected T&S sources are already standard practice for current natural gas operations. Proposed practices – rod packing replacement, dry seals on new turbines, and low bleed pneumatic devices when feasible – are already being implemented. Thus, "real" incremental VOC reductions, that is, reductions beyond current practices will be trivial. At the same time, codifying common practices in Subpart OOOO would carry significant administrative burden for NSPS compliance (permitting, recordkeeping, and reporting obligations) including first-time regulation (e.g., "facility" permitting) for minor, individual pneumatic controllers.

Natural Gas STAR and Subpart W data

The natural gas VOC emissions data used to support and develop Subpart OOOO are primarily from the EPA Natural Gas STAR program. These are generally small, non-representative data sets, and, due to the very nature of the voluntary program, subject to bias.

Natural Gas STAR was established to encourage oil and gas companies to voluntarily develop, implement, and document technologies and practices that reduce methane emissions. Because this is a voluntary program, companies naturally selected projects with the greatest potential for natural gas emissions reductions at the lowest cost. Non-verified data were used in the STAR program, and many of the reductions were reported using optimistic data or "best of the best" opportunities or scenarios to highlight various company-specific efforts. Thus, the Natural Gas STAR data were not systematically collected to be representative of the industry, were not collected for the purpose of regulatory development, and are subject to a high emissions reduction bias and a low cost bias due to common sense project selection incentives.

Information in the Proposed Rule preamble demonstrates deficiencies in Natural Gas STAR data or related historical data, and these data have a tendency to inaccurately represent industry "average" operations. For example, at 76 FR 52762, EPA indicates that compressor usage rates at natural gas transmission and storage facilities are 79 and 68 percent, respectively. These

utilization rates are up to two or more times higher than actual average utilization for these two sectors. EPA's reliance on biased data can result in inappropriate perceptions of operations and emission reduction over-estimates.

In sum, the Natural Gas STAR data were developed for completely different purposes and are wholly inappropriate for rule development. Using those data violates the good intentions of industry participants in a voluntary program. In addition, EPA is proposing emission reduction requirements without pertinent reporting data from Subpart W, which has a stated objective of informing future rulemakings. The overlap between Subpart OOOO and Subpart W implies that both regulations are not warranted at this time. Either Subpart W reporting for transmission and underground storage should be rescinded (because EPA believes it has enough information to impose emission reduction regulations) or transmission and underground storage requirements in the Proposed Rule should be eliminated from the Final Rule pending collection of emissions data. To state this concisely, **if vented sources are regulated under Subpart OOOO, then reporting under Subpart W should no longer be required.**

Overview of required practices and associated costs and benefits

The Proposed Rule mandates emission reduction practices – including timely replacement of reciprocating compressor rod packing, dry seals on new centrifugal compressors, and low bleed pneumatic devices – that already occur due to safety, economic, and best practice considerations (i.e., reducing natural gas losses) and that, as a result, are implemented routinely as standard practice. Thus, EPA dramatically *over-estimates* VOC emission reductions that will result from the Proposed Rule. Incremental natural gas VOC emission reductions that directly result from Subpart OOOO would be small and would be the *least* cost-effective reduction opportunities. The Proposed Rule is not needed to codify on-going, standard industry practices to reduce emissions, and will have the perverse effect of unnecessarily increasing the costs of these practices by adding a significant administrative burden and stifling further innovations to reduce emissions and associated costs.

Through existing safety and maintenance procedures, as well as measures to reduce natural gas losses, operators already implement natural gas emission reduction technologies and practices. For example:

- Low-bleed pneumatic controllers are now routinely installed rather than high-bleed controllers when appropriate for the particular application.
- Routine monitoring of reciprocating rod packing leak rate is a common practice for compressor operators. An increase in rod packing leak rate triggers rod packing maintenance and condition based maintenance approaches are common.
- Dry seals are installed on nearly all new centrifugal compressors.

Because of these current practices, the incremental reductions that would result from Subpart OOOO would be minimal. EPA analysis has not accounted for current practices and *incremental reductions* in its analysis. The Natural Gas STAR program deserves some credit for increasing industry awareness of opportunities and practices for reducing natural gas losses, and operators have adopted some of these practices and developed internal procedures to improve their

application. Thus, incremental VOC emission reductions as a result of the proposed rule will be very small.

In addition, a common sense understanding of engineering and economic drivers dictate that practices would be preferentially employed on sources that have the largest emission reduction potential and lowest associated costs (i.e., the most cost-effective). Thus "regulation-driven" controls from Subpart OOOO would be the least cost-effective and typically address smaller emission sources. The EPA emission reduction and cost analyses should be based on these incremental, regulation-driven emission reductions and not take credit for current practices.

While a quantitative assessment could not be conducted during the limited comment period, it is certain that EPA analyses over-estimate the actual environmental benefit (example order of magnitude estimates are discussed below), and under-estimate the associated costs and VOC reduction cost-effectiveness (in dollars per ton). An appropriate analysis would not take credit for ongoing emission reductions that would be conducted regardless of the Proposed Rule. In its rush to issue a rule, and decision to unnecessarily include the T&S sectors within this Consent Decree driven NSPS proposal, EPA has failed to adequately analyze emissions reductions and costs for natural gas transmission and storage.

Overview of estimates for VOC emissions, VOC reductions, and regulatory costs

- The assumed VOC content for T&S operations is 0.83 volume percent or 2.3 weight percent. This is generally within the range of VOC content for pipeline quality natural gas, but natural gas with lower VOC content will be common for many T&S facilities. For example, lines that transport (or primarily transport) coal bed methane or gas from liquefied natural gas (LNG) will have much lower VOC content. This would result in significant site-specific differences in VOC reductions and cost effectiveness. As discussed in Comment 2, INGAA strongly recommends that Subpart OOOO only apply to equipment "in VOC service" based on a prescribed threshold for VOC content of the natural gas.
- For continuous bleed pneumatic controllers, as discussed in comments below, EPA has significantly under-estimated administrative costs associated with regulating these controllers, which are small, component level parts. In addition, the data used to estimate the VOC emissions reductions from using a low-bleed rather than a high-bleed pneumatic controller is based on emission factors from Subpart W, which are in turn related to data from the Natural Gas STAR program and 1990's EPA-GRI report. Based on the original reports, the pneumatic controller population is from a handful of sites and a few manufacturers, rather than considering the cross section of industry segments, operating companies, and controller manufacturers. The implications of the limited data set are not possible to discern.
- For reciprocating compressors, in addition to improperly accounting for incremental reductions that would be incurred above and beyond current practices, it appears that the reciprocating compressor cost-benefit analysis is biased due to sector weighting that over-estimates T&S reductions. Reciprocating compressor rod packing emission reductions are based on data that do not reflect current equipment and operations, and VOC reductions are biased high by emission factor and gas composition assumptions.

A summary of five parameters or methods that result in high bias for VOC emission reduction estimates from rod packing replacement and over-state EPA's estimate of rule emission reduction benefits includes:

- Baseline uncontrolled emissions for the transmission and storage sectors are calculated using emission factors from the 1996 GRI/EPA study and are based on emissions data that are nearly 20 years old. Thus, these baseline emissions do not consider improvements in rod packing designs and monitoring and maintenance practices; that is, the baseline emissions do not consider on-going industry practices to reduce emissions and thus over-estimate the potential reductions.
- For the EPA "rolled-up" analysis, about two-thirds of the baseline VOC emissions from affected compressors are from the processing segment and it is assumed these compressors handle production or field gas with a VOC to methane ratio of 0.278 (based on 82.9 volume percent (vol%) methane and 6.8 vol% VOC, which equates to 65.7 weight percent (wt%) methane and 18.2 wt% VOC). However, the majority of compression at a processing plant is for residue gas that has a much lower VOC content. For example, EPA analysis uses a VOC to methane ratio of 0.027 for natural gas transmission (based on 92.8 vol% methane and 0.8 vol% VOC, which equates to 86.2 wt% methane and 2.3 wt% VOC). (See docket document number EPA-HQ-OAR-2010-0505-0084 for natural gas composition assumptions.) Properties of natural gas from the transmission sector would be a more accurate estimate of residue gas composition. In summary, about half of the baseline VOC emissions and associated emission reductions are an order of magnitude high in the EPA analysis.
- The EPA analysis bases controlled emissions (i.e., emissions after rod packing replacement) on an emission factor of 11.5 scf/hr from a Natural Gas STAR "Lessons Learned" document "Reducing Methane Emissions from Compressor Rod Packing Systems."[1] However, this document states "Under the best conditions, new packing systems properly installed on a smooth, well-aligned shaft can be expected to leak a minimum of 11.5 scfh." Thus, the EPA analysis "controlled" emission factor is a "best-case" scenario based on that data and actual emissions may be marginally higher if the Gas STAR document was correct.
- The EPA analysis assumes that the emission factor for new rod packing (i.e., 11.5 scfh) applies for the entire 26,000 hour packing lifetime and ignores the fact that rod packing leak rates will change over time as the packing wears. This assumption further over-estimates emission reductions.
- The EPA analysis ignores current industry practice and assumes that rod packing replacement and maintenance would not occur absent the rule. As discussed above, the analysis should be based on *incremental VOC emission reductions* that would result from rule promulgation, and these incremental emission reductions are expected to be a small fraction of total industry reductions that occur based on current practices. For example, assume that current practices for natural gas transmission compressor stations typically maintain or replace rod packing (on average) every 35,000 operating hours with average utilization of 40% (common for pipeline compressors). This would result in rod packing

[1] http://www.epa.gov/gasstar/documents/ll_rodpack.pdf

maintenance or replacement three times over 30 years. The proposed Subpart OOOO would require rod packing replacement every 26,000 operating hours, which would result in rod packing replacement four times over 30 years for a compressor with 40% utilization. Thus, in this scenario, an *incremental* change from current practices would result in only *one additional* rod packing maintenance/replacement activity *over a 30 year time span*. The incremental VOC reductions under this scenario more appropriately reflect current practices and Subpart OOOO implications, while EPA's analysis assumes the rule fills a complete void relative to current practices. The EPA approach for estimating VOC reductions is a gross misrepresentation of real-world practices and highly inaccurate. As discussed below, even with these over-estimates, the estimated sector-wide VOC reductions are relatively low.

In addition, a review of the Lessons Learned document shows that higher rod packing costs are more likely than the costs selected by EPA for its cost-effectiveness analysis. Further, EPA "assumed that rod packing replacement would occur during planned shutdowns and maintenance and therefore, no travel costs will be incurred for implementing the rod packing replacement program." [2] This assumption ignores the fact that rod packing *must* be replaced *before* 26,000 operating hours and unplanned shutdowns will be required to comply or costs will increase due to premature rod packing maintenance. For the EPA analysis to reflect Subpart OOOO requirements, the Proposed Rule would need to be revised to allow operators flexibility for scheduling and conducting rod packing maintenance.

- <u>For centrifugal compressors, projected emission reductions are biased high by emission factor assumptions, and projected costs appear to be biased low based on alternative data published by EPA</u>.
  - The table below compares wet seal and dry seal emission factors used for the Subpart OOOO cost-effectiveness analysis with emission factors used to develop the U.S. national GHG inventory. For the three industry segments listed, the U.S. GHG inventory wet seal emission factor is lower than the proposed rule factor, and the U.S. GHG inventory dry seal emission factor is higher than the proposed rule factor. These data indicate that the emission reductions (i.e., the difference between the two emission factors) in the EPA analyses are biased high.

[2] Subpart OOOO TSD page 6-16.

**Comparison of Wet and Dry Seals Emission Factors:
U.S. GHG Inventory and Proposed Rule Cost-Effectiveness Analysis.**

Segment	Seal Type	U.S. GHG Inventory EF[3]		Proposed Rule EF[A]
		scf CH4/day	scf CH4/min	scf CH4/min
Processing	Wet	51,370	35.7	47.7
Processing	Dry	25,189	17.5	6
Transmission	Wet	50,222	34.9	47.7
Transmission	Dry	32,208	22.4	6
Storage	Wet	45,441	31.6	47.7
Storage	Dry	31,989	22.2	6

A. Subpart OOOO Technical Support Document, Table 6-2.

- The proposed rule assumed that the capital cost of a dry seal compressor is $75,000 more than the capital cost of a wet seal compressor. However, a paper authored by Cary Bylin of EPA and others[4] lists a cost of $240,000 for one centrifugal compressor dry seal retrofit. That paper also provides different operating and maintenance costs than were used for the Proposed Rule analysis.
- Retrofit costs for an existing compressor that becomes applicable will be case-specific and could be extraordinary – as high as costs commensurate with a new compressor (see Comment 14). Case-specific considerations are necessary when assessing whether a dry seal requirement is appropriate for modified or reconstructed units.
- These data indicate that a reanalysis of wet-to-dry seal cost-effectiveness is warranted, particularly for retrofit applications.

- Total annual VOC reductions from transmission and storage are insignificant. The only reasonable conclusion is that transmission and storage sources should not be included in Subpart OOOO. EPA's analysis estimates total annual VOC emission reductions for each of the three T&S affected sources. As discussed above, the estimates are flawed and actual VOC reductions will be lower. A primary reason for EPA's over-estimation of emission reductions is the failure to consider incremental reductions from actions above and beyond current practices. Notwithstanding these fundamental flaws, the estimated VOC reductions are still trivial and inconsequential when considered relative to the national VOC inventory. In the Technical Support Document (TSD) for the Proposed Rule, sections 5 and 6 discuss VOC reductions from pneumatic controllers and compressors, respectively. The TSD includes the following *industry-wide* estimates of annual VOC reductions for natural gas transmission and storage affected sources:
  - For pneumatic controllers, EPA estimates 6.9 TPY of industry-wide VOC reductions;

[3] U.S Environmental Protection Agency. Methodology for Estimating CH4 and CO2 Emissions from Petroleum Systems. Greenhouse Gas Inventory: Emission and Sinks 1990-2009. Washington, DC. April 2011. Annex 3. Page A-153.

[4] Bylin, Carey et al "Methane's Role in Promoting Sustainable Development in the Oil and Natural Gas Industry," 24th World Gas Conference, Buenos Aires, Argentina, October 2009

- For reciprocating compressor rod packing replacement, EPA estimates 14.7 TPY of industry-wide VOC reductions; and
- For centrifugal compressor dry seals, EPA estimates 42.8 TPY of industry-wide VOC reductions.

The total national estimated VOC reductions for transmission and storage are 64 TPY. By comparison, the national VOC inventory for anthropogenic sources is approximately 15 *million* TPY. VOCs from biogenic sources are more than double that amount (approximately 53 million TPY). If limited to non-combustion industrial sources, the VOC inventory is approximately 8 TPY. This demonstrates the triviality of the projected VOC reductions. For example, EPA's estimated Subpart OOOO reductions from pneumatic controllers in transmission and storage are 0.000046% of the total anthropogenic VOC inventory or 0.00001% of biogenic and anthropogenic VOC emissions. Looking at the trivial nature of these reductions in another manner, to achieve VOC reductions that comprise only *one percent* of the national anthropogenic VOC inventory, it would require over 21,000 regulations at 6.9 TPY. Surely it is not in the best interest of EPA, states, the public, or affected industries to pursue such trivial reductions. The EPA estimated annual VOC reductions from compressors are similarly inconsequential. For example, the total annual estimate of 64.4 TPY is 0.00043% of the total anthropogenic VOC inventory. In addition and as discussed above, EPA analysis for compressors significantly over-estimates VOC reductions. For example, nearly all new centrifugal compressors will include dry seals, and EPA does not account for that fact. These trivial reductions are not realized without costs. As discussed above and in comments below, EPA has not adequately considered administrative burdens associated with reporting, recordkeeping and permitting. Compliance assurance with *any* federal regulation requires dedicated manpower and corporate systems, and these costs are not justifiable for such trivial reductions.

EPA has not adequately supported its decision to include natural gas transmission and storage in a Consent Decree-driven rulemaking that reviewed NSPS that affect upstream sources. It is evident that regulation of transmission and storage sources will not result in meaningful VOC reductions. In fact, it is alarming that such inconsequential emissions would be targeted in a national rule. In the Final Rule, Subpart OOOO should not include transmission and storage sources.

2. If Subpart OOOO retains requirements for transmission and storage, the affected sources should be limited to equipment "in VOC service" (i.e., where natural gas VOC content exceeds ten weight percent).

As discussed in Comment 1, Subpart OOOO covers emission sources where natural gas VOC emissions are being reduced by ongoing industry practices, and Subpart OOOO also regulates natural gas streams with minimal VOC content. For many gas streams and emission sources, the Proposed Rule would result in small VOC reductions at inordinate cost. For example, as discussed in comments below, regulating individual continuous bleed pneumatic controllers will result in administrative costs that impose a very high relative cost when compared to the trivial emission reductions (i.e., tens of pounds per year in VOC reductions or less for some natural gas streams with low VOC content). The failure to include a VOC applicability threshold within the rule is remiss, and inconsistent with the both NSPS that is being replaced (Subpart KKK) and

with the Proposed Rule criteria in §60.5400(f) for an affected source in the onshore natural gas processing segment.

If, as stated, it is EPA's intent to regulate and reduce VOC emissions, then it is imperative that Subpart OOOO contain a VOC applicability threshold. As discussed in Comment 1, many streams will have little or no VOCs. A pollutant cannot be reduced if it is not present at meaningful levels. Regulations that include a VOC threshold are available for reference and several are listed below. Failing to include a VOC threshold establishes that Subpart OOOO is not a VOC rule but simply a thinly veiled GHG regulation.

If requirements for transmission and storage sources are retained in Subpart OOOO, only equipment "in VOC service" should be affected sources. Similar to the Subpart OOOO provision contained in §60.5400(f) for the onshore natural gas processing segment, equipment in VOC service would be based on natural gas streams that exceed 10 weight percent VOC. This weight percent threshold precedent is consistent with the current NSPS, Subparts KKK and VVa:

- 40 CFR, Part 60, Subpart KKK, §60.632(f):

  "For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight."

- 40 CFR , Part 60, Subpart VVa, §60.481a

  "In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight."

Similarly, within the Proposed Rule, an affected source at gas processing plants is exempt if the equipment is not in VOC service, with this term defined in §60.5400(f) and consistent with the examples above:

> "For a piece of equipment to be considered **not in VOC service [emphasis added]**, it must be determined that **the VOC content can be reasonably expected never to exceed 10.0 percent by weight [emphasis added]**."

INGAA strongly recommends that Subpart OOOO only apply to T&S sources "in VOC service" based on a threshold of ten weight percent VOC. It is evident that natural gas VOC content will vary and be trivial in some cases. EPA's assertion that Subpart OOOO is intended to regulate VOCs (rather than GHG emissions) is unsupportable without a VOC threshold.

3. Subpart OOOO includes a rule-specific definition for "modification" that inappropriately refers to "natural gas," which is not a pollutant. That definition should be deleted and the existing Part 60 Subpart A §60.14 definition of modification should be referenced. The Subpart A sections also clarify that relocation of an affected source is not a modification.

The Proposed Rule includes a definition of "modification" rather than referring to the Subpart A definition in §60.2 and §60.14 on modification. Part 60 NSPS regulations typically refer to these sections rather than including rule-specific definitions, and EPA should adopt this approach for Subpart OOOO.

It is imperative that EPA not adopt the proposed Subpart OOOO definition of "modification," because the definition inappropriately implies that "natural gas" is a pollutant. In contrast, Subpart OOOO, Table 3 appropriately indicates that §60.2 definitions and §60.14 apply, and an additional, repetitive definition is not warranted in Subpart OOOO. The longstanding criteria in §60.14 are also preferred because §60.14(e)(6) specifies that relocation (e.g., a relocated compressor) is not a modification.

INGAA understands there is an additional reason for a definition in Subpart OOOO. EPA intends for Subpart OOOO to apply to each re-completion of a fractured or re-fractured existing gas production well. Rather than the proposed definition, that applicability can be accomplished when defining the affected facility in §60.5365(a) rather than including a rule-specific definition of modification. To accomplish EPA's objective, INGAA recommends deleting the definition of "modification" in §60.5430 and revising the affected facility defined in §60.5365(a) as follows:

> "(a) A gas wellhead affected facility, is a single natural gas well. **For the purposes of this subpart, each recompletion of a fractured or refractured existing gas well is considered an affected facility."**

Note that additional clarification regarding storage well applicability is discussed in Comment 17. Alternatively, if EPA insists on retaining a rule-specific modification definition in Subpart OOOO, it should be revised as follows:

> *"Modification* means **modification as defined in §60.2 and §60.14, and, for** ~~any physical change in, or change in the method of operation of, an affected facility which increases the amount of VOC or natural gas emitted into the atmosphere by that facility or which results in the emission of VOC or natural gas into the atmosphere not previously emitted. For~~ the purposes of this subpart, each recompletion of a fractured or refractured existing gas well is considered to be a modification."

4. EPA's analysis assessing co-benefits from GHG reductions should conform to current convention. EPA GHG emission reduction estimates are premature because the GHG reporting rule (40 CFR, Part 98) is intended to develop data to inform rulemakings, and GHG reporting for petroleum and natural gas systems does not begin until 2012.

In the preamble to the Proposed Rule, EPA requests comment on its analysis of co-benefits from GHG reductions. Any analysis of methane reductions that considers CO_2 equivalent emissions should use 21 as the methane global warming potential. This is the current convention for reporting in the U.S. (e.g., under the GHG reporting rule, 40 CFR, Part 98, Subpart W) and EPA should abide by current convention.

As discussed in Comment 1, estimated methane (and VOC) reductions are likely to be biased high, because EPA inappropriately relies on information from the voluntary Natural Gas STAR program. Data from that program over-estimates emission reductions due to the nature of the program. These estimates could be improved once data is available from the GHG reporting rule. EPA's stated objective for the GHG MRR is to compile data to inform future rulemakings, but initial Subpart W reporting of emissions for natural gas systems will not occur until September 2012. Thus, until multiple years of data from Subpart W reporting is compiled, there is significant uncertainty in GHG emission estimates and a high likelihood that EPA's estimates

are biased high. It is premature for EPA to credibly estimate emissions, let alone monetize estimated emission reductions, until Subpart W data are available to fulfill the intended objective of informing future rulemakings.

Subpart OOOO – Pneumatic Controllers Applicability and Requirements

5. Subpart OOOO inappropriately defines a pneumatic controller, which is a trivial VOC source and an equipment sub-component, as a "facility".

A pneumatic controller emits relatively small amounts of VOCs, and controllers are sub-components of a larger process or larger piece of equipment. At the six standard cubic feet per hour (scfh) vent rate that segregates low- and high-bleed pneumatic controllers, typical emissions will be on the order of 100 *pounds* per year or less for controllers in the natural gas transmission and storage sectors. Yet, EPA defines an individual pneumatic controller as a "facility" in Subpart OOOO. This decision defies a common understanding of the term facility, but is requisite for EPA to regulate both new installations and controllers that are like-kind replacements for an existing controller.

INGAA opposes defining such a small, component-level part, and small source of emissions as a "facility" because it is contrary to common meanings of the word and the obvious intent of the Clean Air Act. Merriam-Webster defines "facility" as, "something (such as a building or large piece of equipment) that is built for a specific purpose." Another definition from dictionary.com defines facility as, "something designed, built, installed, etc., to serve a specific function affording a convenience or service," and provides the following examples: transportation facilities; educational facilities; a new research facility.

INGAA acknowledges that EPA is generally provided broad discretion to determine what equipment or combination of equipment should be considered a "building, structure, facility, or installation" under the definition of "stationary source" in CAA § 111(a)(3). *See Chevron v. NRDC*, 467 US 837 (upholding EPA decision to transition from a "dual" definition of "source" to a plantwide concept under NSR). INGAA further acknowledges that this same definition may be construed differently under different regulatory programs. *See Environmental Defense v. Duke Energy Corp.*, 549 U.S. 561 (2007) (allowing EPA to define the term "modification" differently under the PSD and NSPS programs).

EPA's proposal to identify each individual pneumatic controller as a separate "affected facility" (EPA's term for the regulated "stationary source" under the NSPS program), however, goes well beyond anything EPA has done in the past. All of EPA's prior Part 60 regulations– as well as those under EPA's other stationary source program – have consistently defined the regulated "stationary source" as either individual large stationary sources (e.g., cement plants, glass manufacturing) or, at the smallest, substantial individual pieces of equipment (e.g., turbines, boilers, or reciprocating engines). All of these prior interpretations are entirely consistent with the *Chevron* Court's reference to a "building, structure, facility, or installation" as "any discrete, but integrated, operation which pollutes." 467 U.S. at 861.

EPA's proposal also goes well beyond its own past interpretation. EPA has regulated – and continues to regulate – equipment with the potential for small emissions of VOCs or HAP, where such controls are cost-effective, but it does so collectively. Thus, for example, because many

facilities rely on piping, valves, and other components to transport VOC- or HAP-containing materials, and because these components may leak, EPA has for years regulated these types of components collectively – i.e., by defining the "affected facility" as the "group of all equipment" (*e.g.*, pumps, compressors, pressure relief devices, sampling connection systems, valves, flanges, and connectors in VOC or HAP service) at the plantsite. *See, e.g.*, 40 C.F.R. §§ 60.480(a)(2), 60.481 (definition of "equipment"); *id.*, §§ 60.630(a)(3), 60.631. Never before has the Agency attempted to carve out a separate "affected facility" for a single component that emits on the order of tens of pounds of VOCs per year.

EPA's proposal goes well beyond both the plain meaning of the term "building, structure, facility, or installation" and EPA's own prior constructions of that term. Yet the Agency has not provided any reasonable basis for such a dramatic change of direction. INGAA objects to this attempt to extend the clear intent of the Clean Air Act to trivial emission sources and component parts rather than substantive sources that conform to the common definition of "facility".

INGAA is further concerned that EPA's decision to categorize a component-level part as a separate "affected facility" is effectively an attempt to circumvent the §111(d) process for regulating existing facilities. As EPA has noted, pneumatic controllers are in use across a wide variety of existing upstream, midstream, and downstream facilities. By defining each individual controller as a separate "affected facility", EPA ensures that a standard maintenance practice (i.e., like-kind replacement of a controller and maintenance of the replaced controller) is now subject to NSPS requirements. This approach both overrides the historical NSPS paradigm (which specifically exempts maintenance and rebuilding activities that do not increase a unit's emissions rate and that remain below the 50% "reconstruction" threshold) and circumvents the specific processes required by §111(d) before the Agency may regulate existing sources.

INGAA opposes including pneumatic devices in Subpart OOOO and new programmatic approaches EPA is implementing to support their inclusion. At most, Subpart OOOO should regulate new pneumatic devices and not replacement of existing devices. EPA should eliminate requirements that regulate replacement pneumatic controllers because CAA §111(d) criteria for regulating existing sources has not been met.

6. INGAA recommends excluding pneumatic controllers in the natural gas transmission and storage sector from Subpart OOOO, similar to EPA's decision regarding pneumatic controllers in the distribution sector.

For pneumatic controllers, INGAA recommends limiting Subpart OOOO applicability to controllers at natural gas processing plants or locations upstream from gas processing that exceed a defined VOC threshold. Although the rule language is not clear, it is apparent that EPA exempts pneumatic controllers in the distribution sector. INGAA supports that decision. Pneumatic controllers at natural gas transmission and storage facilities and along pipelines prior to custody transfer to distribution are included in Subpart OOOO. The VOC content in the pneumatic controller vented gas is the same for the natural gas transmission and storage as it is for distribution. Thus, natural gas transmission and storage pneumatic controllers should also be excluded from Subpart OOOO.

As discussed in several comments below, this exclusion would reduce administrative costs because *mandatory* Subpart OOOO recordkeeping and reporting would no longer apply. In addition, significant hidden costs for pneumatics that are *not* affected by the Rule would be addressed. As discussed below, there are administrative costs associated with documenting that excluded controllers are not affected by Subpart OOOO (e.g., to differentiate status during an inspection). Providing a Subpart OOOO exclusion for pneumatic controllers used in natural gas transmission and storage would address this issue.

In Comment 7, INGAA provides recommended rule revisions to implement this applicability approach – i.e., revisions to the section that defines the affected source for pneumatic controllers.

7. The pneumatic controller affected source in §60.5365(d) should be clearly identified as a *continuous bleed* pneumatic controller. In addition, §60.5365(d) should be revised to limit regulation of pneumatic controllers to gas processing plants and operations upstream of gas processing.

A clear identification of the affected source is imperative to avoid uncertainty regarding applicability for a particular pneumatic controller. Since Subpart OOOO proposes to regulate very small, component-level parts, clearly defined applicability is even more important to avoid unnecessary records associated with pneumatic controllers that are *not* affected by Subpart OOOO, or uncertainty regarding whether a particular pneumatic controller is subject. Subpart OOOO identifies "pneumatic controllers" as an affected source. To be more specific, the affected source for T&S facilities include: (1) the initial installation of continuous-bleed pneumatic controllers associated with a new process or new piece of equipment; or (2) continuous bleed pneumatic controllers that replace existing continuous high-bleed pneumatic controllers. Continuous low-bleed controllers that replace existing continuous low-bleed controllers should not be affected facilities. It appears that Subpart OOOO intends to regulate pneumatic controllers that bleed *continuously*. Subpart OOOO should clarify that intermittent bleed pneumatic devices are not affected sources.

To designate the affected source clearly, and to avoid confusion regarding applicability and requirements for other pneumatic controllers (e.g., avoid mandated Subpart OOOO administrative requirements such as reporting and recordkeeping for non-affected controllers), §60.5365(d) should be revised to identify the affected source for facilities other than gas processing plants as "continuous bleed pneumatic devices" and to differentiate between new installations or replacement criteria. This will require splitting (d) into two subsections to identify the affected facility for gas processing and for other sectors.

To appropriately exclude existing low bleed devices from the regulation and differentiate between sector-specific requirements as recommended in Comment 6, INGAA recommends the following revisions to define affected pneumatic controllers in §60.5365(d):

"(d) A pneumatic controller affected facility, which is defined as**:**

(1) a single **continuous bleed** pneumatic controller **installed after August 23, 2011 located upstream of a natural gas processing plant (or prior to custody transfer to a gas transmission pipeline when no processing plant is present) that is either:**

(A) replacing an existing continuous high-bleed pneumatic controller, or

(B) an initial installation of a continuous bleed pneumatic controller serving a new process or new piece of equipment; or

(2) a single continuous bleed pneumatic controller installed at a gas processing plant after August 23, 2011."

These revisions exclude existing low bleed devices from Subpart OOOO so that operators are not required to fulfill mandatory Subpart OOOO reporting, recordkeeping, and other administrative requirements when those existing devices are replaced. If EPA retains natural gas transmission and storage pneumatic controllers in the Final Rule, then the text of clause (1) above should be revised to include the appropriate sectors.

In addition, EPA should consider defining this affected source as a *natural gas-driven* continuous bleed pneumatic controller, or, more appropriately (see Comment 2), a *natural gas driven continuous bleed pneumatic controller in VOC service*.

8. If natural gas transmission and storage pneumatic controllers are retained in Subpart OOOO, applicability should be limited to equipment within the fence line – e.g., at a compressor station. Otherwise, trivial emission sources will be regulated along the pipeline or dispersed within storage fields. EPA has not considered the implications and costs associated with such broad applicability. For example, many states require permits for NSPS affected sources, so the Proposed Rule would trigger permitting for a single pneumatic controller.

Subpart OOOO would regulate continuous bleed pneumatic controllers in the natural gas sector. Comment 6 recommends excluding pneumatic controllers downstream of gas processing plants and Comment 7 provides recommended revisions. If EPA does not provide that exclusion, then, at a minimum, only pneumatic controllers within a facility fence line (e.g., a compressor station) should be regulated. Any alternative would result in absurd consequences from administrative burden (e.g., recordkeeping, permitting) for component parts that emit on the order of 100 *pounds* or less of VOC emissions per year.

For natural gas transmission and storage, the Proposed Rule does not exempt devices along the pipeline (i.e., between compressor stations) and dispersed in storage fields. It is not clear if this is intended, and background documents do not include analysis supporting such broad applicability. For the T&S sectors, Subpart OOOO applicability should be limited to, at most, pneumatic controllers "within the fence line" – e.g., at a transmission compressor station. This is consistent with historical regulation of natural gas facilities. In addition, this is consistent with how Subpart W of the GHG Reporting Rule addresses reporting for these same source types for natural gas transmission compression and underground storage.

Without this revision, absurd outcomes would result. For example, small metering and regulating (M&R) stations along a pipeline with a single pneumatic device would be subject to Clean Air Act regulations for the first time. This would impose significant reporting and recordkeeping burdens, and, in some states, permitting requirements would be imposed on "facilities" with trivial emissions that had never before been subject to the Clean Air Act. Although Subpart OOOO includes a provision that precludes Title V permitting, many states require permitting of NSPS affected sources. EPA may claim state-specific issues are not the

agency's domain, but these state-level programmatic issues are well known to EPA and cannot be ignored because they are a direct result of EPA's regulatory action. EPA has an obligation to properly evaluate the implications and costs of its proposed rules.

INGAA strongly recommends revising Subpart OOOO to limit pneumatic controller applicability to upstream processes (see Comment 6). Alternatively, for natural gas transmission and storage, Subpart OOOO should limit applicability to equipment located at "conventional" facilities – e.g., within the fence line at a natural gas transmission compressor station. The cost to operators and state agencies to track, retain records, and potentially permit every remote pneumatic controller would be disproportionate to the associated emissions. Remote pneumatic controller permitting requirements would unnecessarily add to the work load for state and local agencies. Without this revision, EPA must conduct significant additional analysis to establish the costs and benefits associated with regulating small, remote, dispersed component-level parts along pipelines.

9. EPA should reconcile the nomenclature and definitions for pneumatic controllers with the GHG reporting rule (40 CFR, Part 98, Subpart W and Subpart A). Also, EPA should provide additional clarification on affected pneumatic sources and revisit the 6 scfh threshold for defining high-bleed controllers.

Subpart OOOO includes definitions for pneumatic controllers that are generally consistent with 40 CFR, Part 98, Subpart W definitions of the same source. However, additional clarity on affected pneumatic controllers is desired. EPA should ensure similar nomenclature and definitions are used for Subpart OOOO and Subpart W unless rule context requires differences.

INGAA has submitted similar comments to EPA regarding Subpart W definitions, including comments submitted October 24, 2011 in response to the September 9 proposed Subpart W revisions. In discussions and written communications with EPA regarding Subpart W implementation, INGAA noted that confusion remains regarding the classification of pneumatic controllers. INGAA acknowledged that including detailed descriptions within definitions is unwieldy, so INGAA recommended including preamble discussion to add clarity. As rules are implemented, preamble text often addresses questions that arise. Thus, similar to recent comments on Subpart W, INGAA recommends that the Final Rule include discussion of this issue in preamble text and the Technical Support Document to clearly identify the types of continuous bleed pneumatic controllers that are included, as well as pneumatic controllers that are excluded. Although there are differences between Subpart W and Subpart OOOO, EPA should ensure coordination across the groups working on these two rules.

When multiple EPA regulations affect the same equipment, it is generally desirable to employ common nomenclature and definitions across rules, while recognizing that minor differences may be necessary to address different regulatory context. For example, Subpart OOOO refers to pneumatic controllers, but also uses the term pneumatic devices. For consistency and to better describe the affected source, INGAA recommends consistently using the term "pneumatic controller" for both rules.

INGAA is also concerned that the Subpart OOOO threshold that serves as the basis for segregating high-bleed and low-bleed devices is borrowed from the voluntary EPA Natural Gas STAR program. The threshold, a continuous natural gas bleed rate of 6 standard cubic feet per

hour (scfh), is based on 25 year old data from a single company and is an arbitrary basis for regulation. The issue was not compelling within the voluntary reporting program, or even for Subpart W reporting, but becomes an important basis for regulation within Subpart OOOO. EPA has an obligation to support the basis for this decision better.

The basis is noted in the Technical Support Document[5]:

> "The classification of high-bleed and low-bleed devices originated from a report by Pacific Gas & Electric (PG&E) and the Gas Research Institute (GRI) in 1990 titled "Unaccounted for Gas Project Summary Volume." This classification was adopted for the October 1993 Report to Congress titled "Opportunities to Reduce Anthropogenic Methane Emissions in the United States". As described on page 2-16 of the report, "devices with emissions or "bleed" rates of 0.1 to 0.5 cubic feet per minute are considered to be "high-bleed" types (PG&E 1990)." This range of bleed rates is equivalent to 6 to 30 cubic feet per hour. All rates are listed at an assumed supply gas pressure of 20 psig."

An abstract for the report indicates the project was limited to PG&E transmission and distribution operations in 1987.

> "The study was conducted to determine unaccounted-for (UAF) gas volumes resulting from operating Pacific Gas and Electric Co.'s transmission and distribution systems during 1987."[6]

Thus, it appears the 6 scfh threshold is based on a single study with 25 year old data collected in a single area of the country and limited to, at most, the transmission and distribution sectors. This criterion has evolved from the Natural Gas STAR program and there is no indication the threshold has any correlation to current oil and gas operations, pneumatic controller usage, or manufacturer understanding of their product. For example, the threshold establishes "high" versus "low" bleed pneumatic controllers, yet leading pneumatic controller manufacturers market controllers with vent rates above 6 scfh as low bleed controllers.

If EPA decides to retain a natural gas-based vent rate (rather than a VOC emission rate) to segregate high- versus low-bleed, then the arbitrarily adopted and unsupported 6 scfh threshold should not be used. EPA instead should conduct additional analysis based on current practices, equipment population, and manufacturer product lines to determine what bleed rate or rates (e.g., if industry sector segregation is necessary) are appropriate to define a regulatory threshold.

10. Subpart OOOO should allow high-bleed devices when required by the application. Operator records documenting the basis of the need are sufficient to justify the decision.

The Proposed Rule implies that an operator will have to meet a high standard (i.e., Administrator approval) and thus bear significant burden to demonstrate that an application requires use of a high-bleed controller. A "demonstration to the Administrator" implies a petition process and that should not be required. Instead, a high-bleed controller should be allowed when needed, with the operator required to retain records that document the basis for this need. As written, Subpart OOOO could be interpreted to require an operator to petition the Administrator and receive approval whenever a high-bleed device is necessary. Based on the costs, timing, and difficulty

[5] Subpart OOOO TSD, page 5-3.
[6] http://trid.trb.org/view.aspx?id=344918

associated with Administrator petitions, this would be an absurd requirement that is not desirable for EPA or operators.

§60.5410(d)(1) should be revised and INGAA recommends the following:

> "(1) You have **records as specified in §60.5420(c)(4)(ii) to** demonstrate~~d, to the Administrator's satisfaction,~~ the use of a high bleed device is **necessary** ~~predicated~~ as specified in § 60.5~~4~~**3**90(a)."

Note that the citation at the end of (d)(1) appears to be an error, and it appears that §60.5390(a) is the appropriate reference.

In addition, §60.5390(a) should be revised as follows:

> "(a) The requirements of paragraph (b) or (c) of this section are not required if you ~~demonstrate, to the Administrator's satisfaction,~~ **document** that the use of a high bleed device is predicated. The ~~demonstration~~ **documentation** may include, but is not limited to, response time, safety and actuation."

And, §60.5420(b)(5)(ii) reporting should be deleted:

> ~~"(ii) If applicable, documentation that the use of high bleed pneumatic devices is predicated and the reasons why~~."

If EPA intends for operators to pursue a more laborious path of seeking Administrator approval for installing a high-bleed controller, then EPA analysis has failed to consider the associated burden. There will likely be minimal need for high-bleed devices, and the only requirements should be: (1) operator records, and (2) annual reporting of the number of affected high-bleed controllers installed that year.

11. Pneumatic controller recordkeeping and reporting requirements should be simplified and should not refer to "guarantees". Manufacturers typically do not offer "guaranteed" bleed rates but rather provide a specification sheet. Operator recordkeeping should require manufacturer specification sheets or related documentation, or, at operator discretion, a vent rate measurement. Additional reporting and recordkeeping simplification is warranted, and INGAA recommended revisions are provided.

Documentation that an affected pneumatic controller is a low- or high-bleed device should be based on manufacturer documentation (when available) and not a guarantee, since guarantees are not typically provided. Manufacturers of pneumatic controllers will typically provide a ***design specification*** for bleed rate (e.g., that the pneumatic controller continuously bleeds less than or equal to 6.0 scfh under a defined set of conditions or applications). However, manufacturers typically do not ***guarantee*** a bleed rate because actual bleed rates depend on numerous parameters other than design, including, but not limited to, operating pressure, maintenance practices, and operating environment (e.g., ambient temperatures, gas quality, elevation). The demonstration that a pneumatic controller is a low-bleed controller should be based on manufacturer documentation (e.g., a specification sheet), or, at the operator's discretion, direct measurement.

Revisions should be incorporated to simplify rule recordkeeping and reporting requirements that are commensurate with the low emissions. Proposed recordkeeping and reporting requirements are excessive. In addition, mandated requirements do not capture the recordkeeping and compliance assurance burden the Proposed Rule would create associated with ongoing assessment and tracking of which controllers at a facility are affected and which are not. The costs and burden associated with documenting *inapplicability* will be considerable, especially if controllers along the pipeline are included. These efforts will be required for operators to demonstrate to inspectors which devices are affected and which are not. EPA has not considered this considerable compliance burden.

Reporting requirements should be revised and limited to: (1) the number of new continuous low-bleed controllers installed during the reporting period; (2) the number of replacement controllers installed during the reporting period where a low-bleed replaces a high-bleed controller; and (3) the number of high-bleed controllers installed during the reporting period. Recordkeeping should be limited to documentation of why a high-bleed controller is warranted and manufacturer specifications or direct measurement records for affected low-bleed pneumatic controllers. In addition, to more clearly differentiate between pneumatic controllers that are excluded and those that are affected units, Subpart OOOO should explicitly reference August 23, 2011 (i.e., the Proposed Rule applicability date) to provide additional clarity on which controllers require records and reporting. As discussed in Comment 12, an implementation period should be considered for pneumatic controllers and the August 23, 2011 date included below in recommended rule text should be revised to reflect the appropriate effective date that includes an implementation period.

Comment 10 also presents revisions to address high-bleed pneumatic controller documentation, and INGAA recommends the following reporting and recordkeeping revisions:

Recommended revisions for §60.5410(d)(3):

> "(3) You own or operate a pneumatic controller affected facility not located at a natural gas processing plant and ~~the~~ manufacturer~~'s design~~ specifications ~~guarantee~~ **or direct measurement (at the operator's discretion) demonstrate that** the controller ~~emits~~ **continuously vents at a rate** less than or equal to 6.0 standard cubic feet of **natural** gas per hour ."

§60.5410(d)(4) should be deleted:

> "~~(4) You have included the information in paragraphs (d)(1) through (d)(3) of this section in the initial annual report submitted for your pneumatic controller affected facilities according to the requirements of § 60.5420(b)~~."

Recommended revisions to reporting requirements in §60.5420(b)(5):

> "(5) For each **report for** pneumatic controller affected facilit~~y~~**ies**, the information specified in paragraphs (b)(5)(i) through (b)(5)(i**i**~~v~~) of this section.
>
> (i) The ~~date, and location and manufacturer specifications for each~~ **number of new continuous low-bleed** pneumatic controller**s, the number of continuous low-bleed pneumatic controllers that replace existing high-bleed controllers, and the number of continuous high-bleed pneumatic controllers** installed **during the reporting period**.

~~(ii) If applicable, documentation that the use of high bleed pneumatic devices is predicated and the reasons why.~~

~~(iii) For pneumatic controllers not installed at a natural gas processing plant, the manufacturer's guarantee that the device is designed such that natural gas emissions are less than 6 standard cubic feet per hour.~~

(i**i**~~v~~) For **continuous bleed** pneumatic controllers installed at a natural gas processing plant **during the reporting period**, ~~documentation that each controllers has zero natural gas emissions~~ **the number of affected controllers installed**."

Recommended revisions to recordkeeping requirements in §60.5420(c)(4)(i) – (iii):

"(i) Records of the date~~,~~ **and** location ~~and manufacturer specifications~~ for each **affected continuous bleed** pneumatic controller installed **after August 23, 2011**.

(ii) Records of the determination that the use of high bleed pneumatic devices **installed after August 23, 2011** is predicated and the reasons why. **These records shall be available for review upon request but do not need to be submitted to the Administrator for approval.**

(iii) If the **low-bleed** pneumatic controller affected facility is not located at a natural gas processing plant, ~~records of the~~ manufacturer~~'s guarantee~~ **(or vent measurement)** documentation that the device ~~is designed such that~~ **continuous** natural gas **vent rate is** ~~emissions are~~ less than 6 standard cubic feet per hour."

In addition, §60.5390(c) should be revised as follows:

"Each **low-bleed** pneumatic controller affected facility not located at a natural gas processing plant (as defined in § 60.5430) must **continuously vent** ~~have~~ natural gas **at a rate** ~~emissions~~ no greater than 6 standard cubic feet per hour."

12. Pneumatic controller standards should apply to manufacturers rather than operators. The effective date for pneumatic controllers should include an implementation period.

Pneumatic controllers are a very small VOC emission source and this component-level part is similar to a small consumer product. Both operators and manufacturers have inventories to ensure replacements are available, which is typical for small, component-level parts. In addition, manufacturers are not enlightened as to EPA's regulatory criteria for defining a low-bleed pneumatic controller. Manufacturers sell controllers with vent rates in excess of 6 scfh that are labeled as low-bleed devices.

For such a small, component-level emission source, it is more appropriate to regulate at the point of production to ensure that manufacturers understand regulatory criteria, and to implement a labeling and documentation program that identifies the manufacture date and vent rate. This would provide a more effective means to reduce emissions from a component-level part, while improving the probability that low-bleed controllers will be broadly available and high-bleed controllers will be limited to niche applications.

INGAA recommends that EPA regulate pneumatic controllers at the point of production. Operators would be responsible to track installation and document instances where high-bleed

controllers are required. Manufacturer involvement would also facilitate defining an appropriate threshold between high-bleed and low-bleed controllers (see Comment 9).

A manufacturer certification program would require an implementation period rather than an August 23, 2011 applicability date for pneumatic controllers. If EPA proceeds with an operator-focused rule, an implementation period is still warranted to allow existing inventories of this component-level part to be depleted and to provide time for manufacturers to develop documentation that addresses recordkeeping obligations.

EPA and manufacturers should develop the appropriate timeline for a manufacturer certification regulation. If EPA retains the Proposed Rule approach and focuses on operators, INGAA recommends an effective date for pneumatic controller applicability that allows one year after the Final Rule effective date. In this case, the reference to August 23, 2011 in definitions and recordkeeping sections discussed above should be changed to a date one year after the Final Rule effective date.

13. Implications for "reconstruction" and "modification" have not been adequately considered, especially as it pertains to component level emission sources being newly defined as an affected facility.

Reconstruction has historically been an event-driven, cost-based analysis for larger emissions sources (e.g., boilers, reciprocating engines, turbines, etc.) that contain numerous individual components (e.g., burners, turbochargers, heat exchangers, etc.). Since the Proposed Rule regulates small, component-level pneumatic controllers, determining fixed capital costs as defined in §60.15 is more complicated and overly burdensome. Similarly, interpreting "modification" for these sources could be complicated. For example, it is unclear how minor increases in pneumatic controller vent rate or compressor rod packing leakage due to normal wear should be viewed when determining whether a modification has occurred.

Assessing what constitutes reconstruction for a pneumatic device (e.g., routine replacement of a gasket seal) versus what constitutes acceptable routine maintenance would add significant cost and administrative burden that EPA has not considered in its cost analysis. To simplify this, EPA should exclude applicability of reconstruction or modification provisions for existing pneumatic controllers (and compressor seals). As discussed in Comment 14, EPA has indicated this is a viable option for existing centrifugal compressors with wet seals. EPA should also consider excluding applicability of reconstruction or modification provisions for pneumatic controllers and for rod packing on existing reciprocating compressors.

If not, Subpart OOOO should identify specific activities, actions, and equipment status *exclusions* to minimize unintended burden and rule implementation issues. This could be addressed in the Final Rule preamble. EPA should provide detailed examples of activities that constitute a modification or reconstruction (or do not trigger those criteria) for affected sources. The administrative burden associated with ongoing determinations (e.g., records to document that a pneumatic controller was not reconstructed when maintained) should be included in the cost-benefit analysis. For pneumatic controllers, the reconstruction provisions are especially troubling because cost analysis (per EPA methods) includes labor and material costs. The material costs for a component-level controller are relatively small (compared to costs for typical

sources regulated by Part 60), so labor costs would be much more relevant when assessing whether basic maintenance on a pneumatic controller constitutes reconstruction. The time (i.e., labor charge) to "maintain" a pneumatic controller could incur costs that are a significant portion of or exceed the cost of the part – thus the reconstruction 50% cost threshold could be exceeded and maintenance of a pneumatic controller could be precluded. EPA's decision to regulate component-level parts as facilities has significant implications for reconstruction determinations.

As discussed in comments above, significant hidden costs will arise due to EPA's plan to regulate small, component-level parts. If EPA retains the burdensome requirement that results in the need to assess and maintain records that document status under reconstruction or modification provisions, EPA should provide a more detailed explanation of how it will conduct applicability determinations for events as simple as maintenance of a pneumatic device gasket or emissions from normal wear of reciprocating compressor rod packing. Clearly, a straightforward approach would exempt affected sources in natural gas transmission and storage from the modification and reconstruction provisions of Part 60. Similarly, EPA could indicate clearly that relocated sources are not affected sources (also see Comment 3 regarding relocation).

<u>Subpart OOOO – Compressor Applicability and Standards</u>

14. Only *new* centrifugal compressors should be subject to Subpart OOOO. Part 60 modification and reconstruction criteria should not apply to existing units. Wet seals should be allowed if the operator can demonstrate that VOC emissions are similar to dry seal emissions.

EPA solicited comment on whether wet seals should be allowed. It is important to understand that some situations (e.g., associated with reconstruction or modification determinations for existing units with wet seals) could introduce unreasonable regulatory costs. EPA needs to properly consider reasonable scenarios and associated outcomes. As discussed at the October 20, 2011 INGAA meeting with EPA, existing units with wet seals that become subject to Subpart OOOO could be faced with extraordinary costs. Subpart OOOO should specifically exclude existing centrifugal compressors from becoming affected units under reconstruction or modification criteria, and Subpart OOOO should only apply to new centrifugal compressors. In addition, new installations should be allowed to use wet seals if the operator can show that VOC emissions are analogous to dry seal emissions.

As discussed at the October 20 meeting, compliance costs could be an important issue in select cases where "applicability" triggered for existing units results in extreme measures such as unit replacement – i.e., retrofit feasibility and peripheral costs could result in inordinate costs such that replacement is the only viable option. Since wet seal emission rates can vary – and are similar to dry seals in some cases – this requirement could be triggered with little or no environmental benefit.

EPA indicated that *existing* wet seal compressors were never intended to be affected units and that Part 60 modification and reconstruction criteria should not apply to existing centrifugal compressors. INGAA strongly supports this approach. Similarly, an existing unit (i.e., initially installed prior to the rule proposal date) that is subsequently relocated should not be subject to Subpart OOOO. Rule revisions are needed to reflect this intent. This could be addressed by supplementing the proposed text regarding the "affected facility" defined by §60.5365(b):

"…**Modification and reconstruction definitions and criteria in §60.2, §60.14, and §60.15 do not apply to centrifugal compressors. A centrifugal compressor initially installed prior to August 23, 2011 is not and never shall be an affected facility, even if subsequently relocated.**"

The "Explanation" field for Table 3 entries for §60.14 and §60.15 should also be amended to indicate additional criteria in §60.5365(b). If EPA does not provide this exclusion, then the Subpart OOOO standard for existing wet seal compressors that become affected units should consider relative VOC emission levels and control costs to avoid high cost outcomes without commensurate benefit. This will require relatively complex rule language to define requirements for existing centrifugal compressors with wet seals that become affected units.

In addition, current generation wet seals may have VOC emissions similar to dry seals, i.e., EPA's perception that wet seals are high emitters is not always accurate. Thus, Subpart OOOO should allow new units to include wet seals if VOC emissions levels are demonstrated to be similar to dry seal emission levels specified by the centrifugal compressor manufacturer.

15. Reciprocating compressor rod packing requirements should be based on 35,000 operating hours and include an option to use condition-based maintenance to extend the operation of functional rod packing.

Proposed section 60.5385(a) would require the replacement/maintenance of reciprocating compressor rod packing every 26,000 hours of operation. The requirement for reciprocating compressor rod packing maintenance should be based on a 35,000 operating hours threshold and the operator should have the option to use condition-based maintenance to extend the operation of functional rod packing. Allowing condition-based maintenance responds to EPA's request for feedback on this issue.

The 26,000 operating hour threshold in the Proposed Rule is based on a three year maintenance schedule. A 35,000 operating hour threshold is consistent with a four-year maintenance schedule, which: (1) better represents current operator experience and practices; (2) is within the range of standard replacement intervals identified in the preamble; and (3) is within the Natural Gas STAR documents cited by EPA.

The option to use condition-based maintenance practices to extend the operation of functional rod packing is needed to preclude premature and wasteful rod packing maintenance/replacement, and to consider and encourage the development of innovative rod packing technologies. This option considers current practices being used by operators, improvements to rod packing design, and the evolving state of the art.

EPA references a Natural Gas STAR lessons learned document "Reducing Methane Emissions from Compressor Rod Packing System,"[7] which provides an example for condition-based maintenance practices. Rod packing gas leaks are periodically monitored and the value of the incremental leaked gas (relative to post-maintenance/replacement leak rates) is compared to the discounted rod packing maintenance/replacement cost. When the incremental lost gas value

[7] http://www.epa.gov/gasstar/documents/ll_rodpack.pdf

exceeds the maintenance/replacement cost, the rod packing maintenance/replacement is cost-effective. This same general philosophy can be applied, but the maintenance decision should be based on a defined leak rate or change in leak rate over time.

Companies understand the value of rod packing monitoring and maintenance/replacement programs, and have instituted these programs as part of safety and standard maintenance practices. The Final Rule should provide the option to continue to use these condition-based maintenance practices. In general, condition-based maintenance based on measuring rod packing leak rate typically will show a relatively flat leak rate over time, followed by an increase in leak rate when rod packing begins to fail. INGAA recommends that Subpart OOOO include:

- By 35,000 hours of operation, reciprocating compressor operators have the option to replace or perform maintenance on the rod packing or to determine if rod packing maintenance/replacement is required.
- Rod packing condition-based maintenance would assess performance by measuring the rod packing leak rate in accordance with applicable industry standard practices (e.g., as defined in 40 CFR, Part 98 Subpart W procedures).
- A leak rate exceeding 150 scfh would require rod packing maintenance/replacement within nine months or the next unit shutdown, whichever is sooner. A nine month window is necessary to allow a critical unit to continue operating during a high-use season.
- A leak rate less than 150 scfh would demonstrate acceptable rod packing leakage. Subsequent monitoring would be repeated annually until rod packing is replaced or maintained.
- The procedures and leak rate results would be documented and retained as required Subpart OOOO records.

In addition, there is a typographical error in §60.5420(b)(4)(ii) where "24,000 hours" should be replaced with "26,000 hours" (or "35,000 hours" based on this comment).

16. The reciprocating compressor standard should require rod packing *maintenance* rather than rod packing *replacement.*

References to rod packing "replacement" should be changed to rod packing "maintenance." It may not be necessary to replace all rod packing components to restore performance, and a requirement to "replace" the rod packing could result in the wasteful discard of functioning components and equipment, or preclude innovations in rod packing maintenance. The prescriptive nature of the term "replacement" may inadvertently inhibit operators from developing improved equipment and maintenance practices to address rod packing leakage. Rather than stifling innovation, the maintenance standard should provide flexibility that promotes innovation.

Subpart OOOO – Other Applicability

17. Proposed Subpart OOOO includes production wellheads as an affected source. The Final Rule should clearly indicate that *storage wells* are not an affected source.

A gas well head is an affected facility under Subpart OOOO. It is apparent that this applies to natural gas production wells. However, "gas wells" also exist in underground natural gas storage fields. To avoid confusion or implementation questions, Subpart OOOO should clearly state that storage wells are not subject to Subpart OOOO. This could be explained in the preamble to the Final Rule. In addition, the affected facility in §60.5365(a) should be revised to indicate:

> "(a) A **natural** gas **production** wellhead affected facility, is a single natural gas **production** well. **Natural gas storage wells are not an affected facility."**

18. Subpart OOOO includes storage vessels as an affected source, and it appears that upstream production operations are the affected industry segment. The Final Rule should clarify that storage tanks in transmission and storage are not affected sources.

Although Subpart OOOO is not clear, background information implies that storage tanks at T&S facilities are not affected sources. EPA should clarify that storage tank requirements only apply to the production sector (i.e., upstream of gas processing). Limiting Subpart OOOO applicability to production storage tanks is based on EPA's intent expressed in the Proposed Rule and related support documents:

- A rule overview presentation on the EPA web site dated July 28, 2011 indicates in the slide 9 NSPS description, "Storage tanks, which are located at wells and other production facilities;"
- EPA's analysis of the cost-benefit of storage tank reductions is based solely on upstream operations and does not consider T&S tanks; and,
- Subpart OOOO refers to Subpart HH tank controls. For the NESHAPs, tanks are included in Subpart HH for upstream operations but are not included in Subpart HHH for the T&S sectors. Excluding T&S tanks from Subpart OOOO is consistent with NESHAP decisions that appropriately concluded minimal emissions from these tanks.

Additional clarification is warranted. For example, INGAA recommends revising the definition of "storage vessel" in §60.5430 and/or revising the affected source in §60.5365(e) to clearly define the sectors that include Subpart OOOO affected tanks. If EPA intends to regulate T&S tanks, it has not supported the regulatory basis for the decision.

19. The record in the Proposed Rule and docket focuses on tanks used in production and is inadequate to justify regulating tanks used in natural gas transmission and storage.

As discussed in Comment 18, it appears EPA intended to exclude T&S tanks from Subpart OOOO. If this is not the case, and EPA intends to regulate T&S tanks, then EPA needs to complete additional analysis. For example, the preamble cost-benefit discussion on tanks is based solely on production sources. EPA has not provided analysis on VOC emissions, prevalence of affected sources, costs of controls, or relative cost-benefit for T&S tanks. This analysis must be completed to substantiate an EPA decision to include these tanks.

Subpart OOOO – Miscellaneous Items

20. The annual reporting schedule in §60.5420(b) should be flexible rather than requiring reporting on an annual anniversary date based on the effective date for the source. Many facilities have existing reporting schedules associated with a Title V or state permits. §60.5420(b) should be revised to allow Subpart OOOO reporting to be coordinated with other reporting schedules.

The reporting schedule in §60.5420(b) requires an initial annual report one year after the affected facility initial startup date or one year after the Final Rule is published, whichever is later. Subsequent annual reports are due on the anniversary date of the initial annual report. This requirement is too restrictive and would impose unnecessary burden. The rule should be revised to allow reporting schedule flexibility and options. Operators should be allowed to coordinate schedules so that Subpart OOOO reporting can be addressed with other reporting deadlines. For example, a facility may already have reporting deadlines associated with a Title V or state permit. EPA should revise §60.5420(b) to provide flexibility to coordinate annual reporting with other reporting schedules, and to allow reporting options.

Another recommended reporting option, for facilities not reconciling Subpart OOOO reports with other reports, is that the initial annual report should be due 14 months (rather than 1 year) after the initial facility startup date or the date of final rule publication in the Federal Register. The annual report should include applicable information from the previous 12 month period. If the initial report is due one year from the initial applicability date, then the report is due on the final day of the reporting period. Thus, adequate time is not provided to collect, review, and report required data from the previous 12 months. At a minimum, the annual report should be due three months after the end of the initial 12 month reporting period. A three month schedule corresponds to similar reporting schedules in many states and would align requirements.

21. EPA should harmonize the nomenclature and definitions in Subpart OOOO with similar nomenclature and definitions in Subpart W and Subpart A of the GHG mandatory reporting rule (40 CFR, Part 98), including recently proposed and evolving technical corrections to the Part 98 regulations.

Subpart OOOO proposes to regulate VOCs from sources that are also subject to the GHG mandatory reporting rule for petroleum and natural gas systems (40 CFR, Part 98, Subparts W and A). Both sets of rules address the same equipment and processes, and, except for cases where rule context demands otherwise, EPA should strive to harmonize their nomenclature and definitions, including items that emerge from EPA's recently proposed technical corrections to Subparts W and A. INGAA raised a similar point in its October 24, 2011, comments addressing proposed revisions to Subpart W.

It appears that EPA has cross-checked some definitions, but differences remain. To name just a few examples:

- Subpart OOOO typically refers to "pneumatic controllers" and Subpart W refers to "pneumatic devices". INGAA recommends that "pneumatic controller" be used in both rules.
- Although the relevant process streams are different for Part 98 and Part 60, the definition of "compressor" in §98.238 is preferable to the §60.5430 definition.

- The definition of "controller" in §60.5430 should be added to §98.6, which contains related definitions for controller types (e.g., high or low bleed) but not the general definition. Similarly, several definitions associated with equipment or emissions in §98.6 should be added to Subpart OOOO, §60.5430, including "continuous bleed", "centrifugal compressor wet seal degassing vent emissions", and "centrifugal compressor dry seals." Definitions and nomenclature in Subpart OOOO should refer to "natural gas venting" or "VOC emissions" and should not refer to natural gas or methane emissions.

It would be remiss for INGAA to not mention obvious conflicts in EPA's objectives under Subpart OOOO and Subpart W. In developing Subpart W, EPA has consistently identified a primary objective of "informing future rulemakings" associated with sources that report GHGs, including natural gas venting and equipment leak sources that report under Subpart W. In Subpart OOOO, EPA has decided which sources warrant control – i.e., three of the six Subpart W reportable sources for transmission and three of the four Subpart W reportable sources for underground storage are affected sources in Subpart OOOO. In addition, EPA has specifically excluded other sources from Subpart OOOO (e.g., T&S equipment leaks). Subpart OOOO would regulate pneumatic controllers and compressors despite the fact that the initial Subpart W reports for petroleum and natural gas systems will not be submitted until September 2012 (see Comment 4).

Clearly, the Proposed Rule is pursuing emission reductions prior to acquiring pertinent Subpart W reporting data. Instead, EPA inappropriately relies upon data reported in a voluntary program designed for completely different purposes. The overlap between Subpart OOOO and Subpart W and related objectives imply an obvious conclusion: both regulations are not warranted at this time and either Subpart W reporting for transmission and underground storage should be rescinded (because EPA believes it has enough information to impose emission reduction regulations) or transmission and underground storage requirements in the Proposed Rule should be eliminated from the Final Rule pending collection of emissions data to inform rulemakings for sources of natural gas venting and equipment leaks.

<u>General Items Applicable to Both Subpart OOOO and Subpart HHH</u>

22. EPA must revise affirmative defense provisions to more appropriately address malfunction events. In addition, EPA should provide additional support for startup and shutdown standards in Subpart HHH.

In both the proposed NSPS (Subpart OOOO) and the revised NESHAPs (Subparts HH/HHH), EPA proposes to: (i) remove any exemption or alternative standard for startups, shutdowns, or other foreseeable events that may affect operations; and (ii) replace the exemption for "malfunctions" with a more limited affirmative defense. EPA's proposed approach does not comport with the Clean Air Act and risks depriving INGAA members of their Due Process rights.

<u>Requirements for technology-based standards.</u> Both Sections 111 and 112 of the Clean Air Act require EPA to adopt technology-based standards. Under Section 111, EPA must adopt standards reflecting "the degree of emission limitation achievable through the application of the best system of emission reduction which . . . the Administrator determines has been adequately demonstrated[,]" which EPA refers to as "BSER." CAA §111(a)(1). Under Section 112, EPA

must adopt standards reflecting the "maximum degree of reduction in emissions . . . that the Administrator . . . determines is achievable for new or existing sources in the category or subcategory to which such emission standard applies, through application of measures, processes, methods, systems or techniques[,]" which are referred to as "MACT" standards. CAA §112(d)(2).

It is axiomatic that limitations based on "demonstrated" or "achievable" technology must be attainable with the EPA-designated model BSER or MACT technology. By its very terms, the CAA requires that EPA establish emission limits that are "achievable" through the application of BSER- or MACT-level technology. CAA §§111(a)(1), 112(d)(2). Simply put, limitations based on BSER or MACT must be achievable by the technology that EPA has designated as BSER or MACT. *See Portland Cement Assoc. v. Ruckelshaus*, 486 F.2d 375, 402 (D.C. Cir. 1973) ("the [Clean Air Act] expressly requires, for the standards [the Administrator] promulgates, that technology be achievable"); *Marathon Oil Co. v. EPA*, 564 Fed.2d 1253, 1272-73 (9th Cir. 1977) (remanding permits to EPA because they required permittees to meet the standards 100 percent of the time but the permittees could only be expected to achieve the standards 97.5% to 99% of the time with the best practicable control technology currently available); *FMC Corp. v. Train*, 539 F.2d 973, 986 (4th Cir 1976) (remanding effluent limitations to EPA because a properly operating treatment facility could be in violation of those limitations on a few occasions).

EPA may accomplish this goal in one of two ways. First, it may set emission standards sufficiently high so that all facilities using BSER or MACT can achieve the standard at all times, including during startup, shutdown, and malfunctions. Alternatively, EPA may set emission standards at some more rigorous level, and then provide an exemption for the other 1-2% of the time when even well-managed BSER or MACT technology will not be able to comply. *See id.*

Failing to provide such an exemption violates not only the CAA language, but also INGAA members' constitutional rights to due process, by subjecting members and their employees to penalties, and even incarceration, for (i) failing to comply with an unattainable standard; and (ii) engaging in conduct that the CAA expressly makes legal. A law that requires an individual to do the impossible leaves an individual no choice but to violate the law; because individuals must be given the opportunity to conform their conduct to the law, such a law violates due process. *See Grayned v. City of Rockford*, 408 U.S. 104, 108 (1972) (vague laws violate due process in part because they fail to provide individuals a choice of whether to obey); *Portland Cement Ass'n v. Ruckelshaus*, 468 F.2d 375, 398 n.91 (D.C. Cir. 1973) ("Companies must be on notice as to what will constitute a violation."); *United States v. Dalton*, 960 F.2d 121. 122-23 (10th Cir. 1992) (individual cannot be convicted for having unregistered machine gun when there is no available mechanism for registering machine guns). Furthermore, subjecting INGAA members to sanctions for doing that which the Act expressly makes legal – continuing to operate their facilities using properly-managed BSER- or MACT-level controls – would also violate due process. "To punish a person because he has done what the law plainly allows him to do is a due process violation of the most basic sort." *United States v. Goodwin*, 457 U.S. 368, 372 (1982) (internal quotations omitted).

Effect of the Sierra Club decision. The *Sierra Club* decision does not alter this analysis. *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008). At the outset, the *Sierra Club* decision applies

only to MACT Standards, not NSPS Standards; indeed, the Court's decision was in large part based on the more limited flexibility granted to EPA under Section 112 than had been provided under Section 111. *See* 551 F.3d at 1022. Accordingly, the decision is expressly inapplicable to Subpart OOOO.

Furthermore, the *Sierra Club* decision focused on the manner in which EPA had implemented the SSM exemption under Section 112 – *not* the validity of the exemption itself. Under the Part 63 General Provisions, EPA generally exempted facilities from complying with MACT standards during SSM events; during these periods, facilities were instead required to comply with the general duty to operate using "good air pollution control practices." 40 CFR. §§63.6(e)-(h). The Court held that the Act requires "continuous *section 112-compliant* standards"; the "general duty" that applied during SSM events did not qualify as either a Section 112(d)-compliant MACT standard or a Section 112(h)-compliant alternate standard. 551 F.3d at 1028-29. Accordingly, the Court voided EPA's reliance on the "general duty" under §63.6(e) to control emissions during SSM events.

The *Sierra Club* decision simply requires EPA to establish some standard(s) under Section 112 that will apply during all facets of a facility's operation – whether that be an emission standard under Section 112(d), or a work-practice standard under Section 112(h). It did not, however, overrule the significant pre-existing caselaw that controls how these standards must be developed. Accordingly, the same principles discussed above continue to apply: because a MACT standard is technology-based, it must be based on what technology can achieve. The only difference involves how EPA must treat those 1-2% of operational periods that were excluded when the MACT standard was developed, those periods when even well-managed technology cannot achieve the mandated control levels. For MACT standards, the *Sierra Club* case determined that Congress intentionally limited EPA's discretion when it amended Section 112 beyond that which would otherwise have been available under Section 111, and that EPA must therefore regulate these periods in some manner that complies with Section 112. Those regulations, however, do not need to involve the same Section 112(d) limits that apply during normal operations; indeed, as discussed above, requiring 100% compliance with technology-based standards violates the express CAA language. Rather, the Agency may issue a less stringent emission standard under Section 112(d) that applies during these periods, or it may issue an alternate work practice standard for these scenarios under Section 112(h).

EPA's proposed SSM standards. As discussed above, EPA has two viable alternatives for managing those periods when even well-operated BSER or MACT technology cannot achieve the same emissions as during normal, routine operations: (1) it may establish emission standards high enough that the reference technology can achieve the standard at all times, even during startup, shutdown, and malfunction; or (2) it may set the standard at a level that the reference technology can achieve most of the time, and then provide an exemption – or alternate standard, per *Sierra Club* – for those periods in which even a well-operated system cannot achieve the standard. EPA here has chosen the latter approach. 76 Fed. Reg. at 52766.

INGAA agrees that EPA may – and should – establish limits based on what BSER- and MACT-level technology can achieve during normal operations, and not at some higher level that would encompass all conceivable malfunctions. *See, e.g.*, *Marathon Oil*, 564 F.2d at 1272 (noting that

setting a standard that could be achieved 100% of the time would be both impossible and "so liberal as to be worthless as a control standard."). However, if EPA is going to base the regulatory standards on an emissions level that BSER or MACT technology can achieve only 98-99% of the time, the Agency must also provide an adequate exemption for the other 1-2% of the time, when even BSER- and MACT-level technology cannot comply. EPA's proposal, as written, does not properly consider or address operations during these non-standard operating conditions.

At the outset, these non-standard operating conditions involve two separate types of events: those that can be foreseen and planned for (e.g., startup and shutdown); and those that cannot be foreseen and planned for (e.g., malfunctions). We address each of these periods separately below.

Foreseeable events. Many technologies experience foreseeable operating periods when they cannot achieve the same emissions limits as under "normal" operations. A boiler, for example, cannot achieve its typical high destruction efficiency until it reaches full operating temperature. Similarly, a batch process unit may generate emissions at varying rates across its entire operating cycle.

EPA has historically recognized these kinds of foreseeable operating scenarios in a number of ways. To address the situation posed by the boiler, the Agency has historically exempted startup and shutdown periods from compliance with emission standards. Alternatively, for emissions that vary over a process cycle, EPA may set the emissions rate at the highest level emitted across the cycle, or set an averaging time that reflects operations across the entire cycle.

Under the proposed Subpart OOOO NSPS and revised Subparts HH and HHH NESHAPs, however, EPA has changed its approach dramatically, and has specifically *deleted* the exemption for startup and shutdown periods. EPA bases this conclusion on its belief that the affected equipment can comply with the relevant standards at all times and under all foreseeable operating conditions, including startup and shutdown. *See* 76 Fed. Reg. at 52766, 52787.

This conclusion is incorrect. For example, catalytic incinerators are an allowed control device under Subparts HH and HHH. During startup, time will elapse before the minimum temperature needed for adequate performance is achieved, and EPA has not considered or evaluated the implications.

EPA's analysis of this issue is insufficient. EPA specifically notes that, in proposing the revised MACT standards, it has taken into account startup and shutdown periods. 76 Fed. Reg. at 52787. The removal of the startup and shutdown exemption, however, will apply not just to the *new* standards (such as Subpart OOOO and small dehys that are no longer exempt under Subpart HHH), but also to all of the *existing* standards under Subparts HH and HHH that are unchanged under this proposal. This fundamentally increases the stringency of the existing Subpart HH and HHH standards by removing the ability of facilities to exclude startup and shutdown periods from their compliance demonstrations. Yet EPA has not yet evaluated whether all of the existing regulated equipment under Subparts HH and HHH can comply with the current MACT limits at all times.

For example, as noted above, some control devices require a startup period before adequate control performance is achieved. Similarly, for existing small dehydrators affected by the proposed amendments, EPA is using data from the original rulemaking. There is no information in related support documents indicating that the dataset includes any information regarding perturbations that may occur during startup or shutdown.

Malfunctions. INGAA supports EPA's decision to include a malfunction exemption in the proposed new Subpart OOOO and the proposed revisions to Subparts HH and HHH. As discussed above, both the CAA and the Constitution require an upset defense as part of any technology-based standard. As drafted, however, the proposed defense is far too narrow and restrictive to satisfy the CAA's and the Constitution's requirements.

For example, the proposed rules would excuse only those events that do not "stem from any activity or event that could have been foreseen and avoided, or planned for[.]" 76 Fed. Reg. at 52829. However, any number of events may be "foreseen" and "planned for," but still interfere with a facility's ability to comply with the standards. For example, events such as a power failure or natural disaster may be anticipated, and the facility may develop an appropriate emergency response plan to implement during these periods – yet the site may still find itself unable to comply with the standard, due to events such as lack of power, lack of access to the site, flooding, severe weather, earthquakes, mud slides, vandalism or terrorism, or upstream upsets that affect the natural gas that arrives at a natural gas transmission facility. For all of the reasons discussed above, these types of foreseeable yet unpreventable events must either be reflected in the overall BSER and MACT requirements, or excused as a malfunction.

Other specific concerns about the malfunction language include:

Timely notification: The availability of the affirmative defense should not be negated by a failure to notify, especially for events that involve small quantities of emissions. The immediate notification requirements are duplicative of other notification requirements under facility Title V permits, SARA/CERCLA/EPCRA, and various state rules, yet do not contain any of the emissions threshold triggers that generally prevent these other requirements from becoming unduly burdensome.

"Infrequent" events: Restricting the malfunction defense to "infrequent" events is legally acceptable only if more "frequent" events are excepted under some version of the startup/shutdown defense. Moreover, determining whether the event is sufficiently "infrequent" to merit application of the defense is highly subjective and vague and does not put INGAA's members on notice of the type of behavior that is necessary to comply with the law.

"Off-shift and overtime labor": The requirement to use off-shift and overtime labor should be deleted, because it impairs the site's ability to respond in the manner most appropriate under the circumstances. For example, many malfunction events require a short period of engineering or design work in order to identify and resolve the underlying problem. In these circumstances, using off-shift and overtime labor may lead to a rush to judgment and "band-aid" fix instead of resolving the underlying problem.

"Severe property damage": The word "severe" should be struck. Determining whether property damage is sufficiently "severe" to merit application of the defense is highly subjective and vague and does not put INGAA's members on notice of the type of behavior that is necessary to comply with the law.

Signed operating logs: EPA should remove the requirement that operating logs be signed. Many facilities now use some form of electronic media to document response actions; other facilities may use paper records that do not require a signature. Imposing a requirement to either print and sign electronic records or revise an existing recordkeeping system to incorporate signature requirements is unnecessarily burdensome and serves no environmental protection purpose.

Root cause analysis: The requirement to perform a root cause analysis is vague and does not put INGAA's members on notice of the type of analysis that EPA will deem sufficient, or the time in which such an analysis must be performed. Such an analysis is also unnecessarily burdensome and serves no environmental protection purpose for many malfunction events where the "root cause" is clearly identifiable (e.g., power outage, hurricane).

More fundamentally, INGAA recommends that EPA replace the proposed language with the language used at 40 CFR §122.41(n), the upset defense provided under the Clean Water Act. This language was crafted to cure the same statutory and constitutional deficiencies that compel the inclusion of a malfunction defense here, *see*, *e.g.*, *Train*, 539. F.2d at 986, and so is the most appropriate and efficient mechanism for addressing these same deficiencies for Subpart OOOO and Subparts HH and HHH.

23. INGAA strongly opposes third party verification.

Third party verification program is inappropriate for numerous reasons, including, but not limited to:

- Significant confidential business information issues;
- Legal ramifications and issues associated with the responsibilities of operators, EPA (or states), and third party verifiers;
- Potential conflicts of interest could arise for numerous reasons, associated with payment of services, desires for extended projects (i.e., revenue), and ulterior motives of third party verifiers;
- Significant additional cost burden for operators, including inefficiencies and complexity associated with an additional layer of data management, and developing and implementing a new program to implement third party verification; and
- Lack of qualified personnel and difficulty training them. A supposition that an efficient and equitable system of knowledgeable third parties can be developed is naïve and unsupported. For example, recent voluntary auditing associated with third party GHG inventory verification has shown that verifiers are ill-equipped to conduct the audits and do not understand the sources or industry being reviewed – despite the fact that references claim experience.

Using third party consultants for Subpart OOOO or Subpart HHH compliance verification is unnecessary and would add complexity and considerable costs to rule compliance. Compliance assurance and certification should be the responsibility of EPA or delegated state agencies.

24. INGAA opposes mandatory electronic reporting and recommends that, at most, electronic reporting be optional at the operator's discretion.

It is premature to implement electronic reporting and INGAA is concerned that that an electronic reporting tool (ERT) will result in numerous complications and undue additional burden. For comparison, EPA has encountered several delays in the "roll out" of the electronic Greenhouse Gas Reporting Tool (e-GGRT) for the GHG MRR, and the e-GGRT system for Subpart W is not yet operational. Mandatory adherence to such a tenuous system is not warranted.

As is common with Information Technology (IT) projects, the EPA experience with e-GGRT indicates that considerable time and resources are needed to develop and implement efficient systems and to ensure that electronic reporting enhances efficiency rather than incurring additional burden on affected sources. At this time, EPA methods are a possible entry point for electronic reporting for Part 60 or Part 63 sources. A potential disadvantage associated with an ERT is that new and/or alternative test methods would not be in the system. In addition, an ERT could be disproportionately complicated and burdensome for smaller companies that lack environmental personnel. Finally, if EPA delegates authority to states to implement and enforce the standards, some states may be unable or unwilling to accept electronic reports. This would add unnecessary complexity and could result in duplicative reporting.

Electronic reporting for Subpart OOOO or Subpart HHH should not be mandatory. At most, electronic reporting should be optional at the operator's discretion.

<u>Subpart HHH – Dehydrator Applicability</u>

25. The Final Rule should clearly indicate that a unit controlled to less than one ton per year (1 TPY) of benzene that is exempt under the original June 1999 rule is classified as a "small" dehydrator under the Proposed Rule. This clarification is needed because confusion has resulted from the proposed revision that deletes the 1 TPY benzene compliance option for currently affected "large" dehydrators.

The current Subpart HHH rule adopted in June 1999 includes a one ton per year (TPY) benzene threshold ***and*** 10 MMscfd annual average natural gas flow rate as criteria for defining an affected dehydrator. In the Proposed Rule, these same criteria are used to differentiate between a "large dehydrator" and a "small dehydrator". In addition, the existing Subpart HHH includes a compliance option that allows affected (large) dehydrators to reduce emissions to less than 1 TPY benzene. This is one of three compliance options in the current rule for controlling dehydrator emissions from affected units (i.e., units that are large dehydrators under the Proposed Rule).

The Proposed Rule deletes the 1 TPY benzene *compliance option*. This proposed revision has caused confusion and concerns regarding implications for dehydrators with less than 1 TPY benzene that are currently *exempt* from Subpart HHH, and would be classified as "small dehydrators" under the Proposed Rule. The Final Rule should clearly explain that the proposed

revision only deletes the compliance option for large dehydrators and does not revise the 1 TPY benzene applicability criterion that differentiates large dehydrators from small dehydrators.

Under the Proposed Rule, dehydrators that controlled benzene emissions to less than 1 TPY with federally enforceable limits prior to the Subpart HHH effective date, and were exempt under the existing rule, would be classified as small dehydrators. The Proposed Rule would require these existing small dehydrators to comply with an emission standard based on a MACT floor determination that considered uncontrolled units, and would not mandate emission controls for these units.

In a meeting held October 20, 2011, EPA confirmed that INGAA's interpretation was correct. To avoid confusion, INGAA recommends that this issue be explained clearly in the Final Rule preamble.

Subpart HHH – Applicability and Standards

26. EPA should retain the 1 TPY benzene compliance option for large dehydrators that the Proposed Rule would delete.

The Proposed Rule would delete the compliance option currently in Subpart HHH that allows affected units (which are defined as "large dehydrators" in the Proposed Rule) to comply by limiting benzene emissions to less than 1 TPY. The preamble indicates that EPA is rescinding this option to reduce the residual risk. However, the preamble also indicates that residual risk based on the current rule is below the 100 in a million risk threshold, which is the risk that EPA deems acceptable to protect public health with an ample safety margin. Since the current standard is protective enough, deleting the currently allowed compliance option is not warranted, and the 1 TPY benzene compliance option should be retained in the Final Rule.

In addition, although INGAA did not scrutinize the facility count and projected changes in compliance and emission reductions in response to this proposed revision, it is anticipated that relatively few facilities would be affected by this change. For most dehydrators that could reduce emissions to less than 1 TPY benzene, operators implemented controls as a federally enforceable permit condition prior to the rule effective date. These units were exempt from Subpart HHH, and would be small dehydrators under the Proposed Rule (see Comment 25). Thus, incremental reductions should be relatively small and EPA's estimated decrease in residual risk appears to over-estimate the impact from this proposed revision. However, for those facilities using the 1 TPY compliance option, conforming to a new standard would impose unnecessary costs and an infeasible schedule.

27. If the 1 TPY benzene compliance option is deleted, 90 days is not enough time for units currently complying with that standard to meet new requirements. INGAA recommends that Subpart HHH allow two years for compliance, as allowed under the Clean Air Act section cited by EPA as the basis for this schedule.

In addition to deleting the 1 TPY compliance option for large dehydrators, the Proposed Rule requires that operators using this compliance option meet one of the other two compliance options no later than 90 days after the Final Rule effective date. If EPA does not retain the 1 TPY compliance option as recommended in Comment 26, the proposed schedule is infeasible

and additional time must be allowed. EPA requested comment on this issue in the preamble. In addition, EPA indicated this schedule was based on §112(f)(4) of the Clean Air Act.

While §112(f)(4)(A) indicates that controls related to residual risk standards should be implemented within 90 days of the effective date, §112(f)(4)(B) indicates that EPA can grant sources up to two years after the effective date of the standard to comply. Interestingly, EPA included a redline version of Subparts HH and HHH in the docket, and the Subpart HH redline indicates a *two year* schedule for sources to conform to the new standard. That time allowance is *not* in the signature version or published rule, but it appears that EPA considered allowing two years to comply based on §112(f)(4)(B) criteria.

There are several factors that warrant more than 90 days to comply:

- The affected sources in question will already be controlled (i.e., using the third option currently allowed);
- Complying with a new standard within 90 days cannot be reasonably completed for these sources;
- The risk analysis indicates residual risk is already acceptable; and,
- CAA §112(f)(4)(B) allows up to two years for compliance.

Thus, for currently affected large dehydrators that are required to meet a new standard, EPA should allow two years from the Final Rule effective date to comply.

28. EPA should revisit the MACT floor analysis for small dehydrators to more appropriately consider emissions variability. In addition, EPA should collect additional data rather than relying on limited data from the original rulemaking as the basis for the standard.

The new Subpart HHH emission standard for small dehydrators should be revisited. EPA should collect more recent data rather than using data from the original rulemaking that is 15 years old, should consider additional sources of variability when determining the MACT floor, and should explain the difference in Subpart HH and Subpart HHH standards.

The proposed BTEX emission limits for existing small dehydrators in Subpart HH is 1.10×10^{-4} gr/scm-ppmv as compared to the Subpart HHH standard of 6.42×10^{-5} gr/scm-ppmv. This difference is unexplained and not rationalized for similar equipment. EPA should document why a more lenient standard is appropriate for Subpart HH and provide analysis to supplement background documentation that inaccurately indicates similar standards are proposed:

> "The requirements under subpart HHH are the same as subpart HH, with the exception that the standards apply to glycol dehydration units with an actual annual average natural gas flowrate greater than or equal to 10 MMscf/day and actual average benzene emissions greater than or equal to 1 tpy."[8]

[8] ECR memorandum from Heather Brown (ECR) to Bruce Moore (EPA) titled Oil and Natural Gas Production MACT and Natural Gas Transmission and Storage MACT - Glycol Dehydrators: Impacts of MACT Review Options, July 28, 2011; EPA–HQ–OAR–2010–0505-0047

The data set relied on to determine the MACT Floor was based on 16 dehydrators which were derived from legacy docket A-94-04. EPA discusses reliance on these data in the preamble:

> "Because we do not have any new emissions data concerning these emission points, we evaluated the dataset collected from industry during the development of the original MACT standards." [76 FR 52768]

EPA apparently did not attempt to obtain additional data or information. Data sources may be available, such as dehydrator emissions data reported to state agencies in annual emission reports or in permit applications. EPA rationalizes their decision to use data about 15 years old by stating [76 FR 52768]:

> "We believe this dataset is representative of currently operating glycol dehydrators because it contains information for a varied group of sources (i.e., units owned by different companies, located in different states, representing a range of gas compositions and emission controls) and that the processes have not changed significantly since the data were collected."

However, EPA's "belief" is not supported with data or other information justifying this position. An opinion (i.e., "belief") is not an adequate basis for developing a national emission standard. The failure to broaden data relied on to establish the MACT floor emission standard is remiss. EPA should base MACT floor analyses on emission data from a representative population of dehydrators that characterize the population of affected sources within the category or subcategory. Additional analysis is warranted.

Regarding the MACT floor analysis, EPA should revisit the standard to better assess variability, which is an important component of the analysis. Including variability is consistent with recent court decisions. As noted in the District of Columbia Circuit "Brick MACT" ruling (479 F.3d 875), the ruling from *Mossville Environmental Action Now v. EPA*, 370 F.3d 1232 (D.C.Cir.2004) holds that:

> "…floors may legitimately account for variability [in the best performing sources that are the MACT floor basis] because "each [source] must meet the [specified] standard every day and under all operating conditions."

Similarly, in District of Columbia Circuit's medical waste incinerators case, (167 F.3d 658), Judge Williams addressed the basis of the "best performing 12 percent" standard for determining the MACT floor:

> "First, EPA would be justified in setting the floors at a level that is a reasonable estimate of the performance of the "best controlled similar unit" **under the worst reasonably foreseeable circumstances** [emphasis added] (we use the subjunctive because it is not clear from the record whether the agency was doing this). It is reasonable to suppose that if an emissions standard is as stringent as "the emissions control that is achieved in practice" by a particular unit, then that particular unit will not violate the standard."

This would indicate that it is inappropriate to select, as the basis for the MACT Floor, the best performing data with the assumption that these data are equivalent to the average performance of the best performing 12 percent of units *when variability is considered*. Judge Williams goes on

further to explain that the standard must be achievable and account for adverse circumstances (e.g., compliance margin for reasonably expected adverse circumstances):

> "This only results if "achieved in practice" is interpreted to mean "achieved under the worst foreseeable circumstances." In *National Lime Ass'n v. EPA*, 200 U.S. App. D.C. 363, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980), we said that where a statute requires that a standard be "achievable," it **must be achievable "under most adverse circumstances which can reasonably be expected to recur** [emphasis added]."

EPA suggests that the normalization of emissions includes variability by taking into account unit-specific throughput and inlet BTEX concentration. The five small dehydrator units had the following characteristics:

- All had no control;
- Inlet BTEX concentration was 20 ppmv on 2 units and 155 ppmv on 3 units; and,
- Throughputs ranged from 20 to 120 MMscf/day.

However, the throughput values and BTEX inlet concentration data only capture two values and these are not the only variables that can impact dehydrator emissions performance. Many additional operating parameters can impact emissions variability. This category lends itself to emissions modeling using GRI-GLYCalc™ as a method to assess variability.

In addition, in other recent regulations, EPA has used a similar statistical approach for including variability in the MACT floor analysis (e.g., standards for boilers, reciprocating engines, and waste incinerators followed a similar methodology). In comments on the reciprocating engine NESHAP, INGAA argued that additional analysis beyond the methods used was warranted, but the other recent EPA rules at least included an additional variability component that is not considered in the Proposed Rule.

Multiple tests from a single dehydrator should be acquired to appropriately assess emission variability or provide operating context for emission limit applicability. INGAA was not able to obtain legacy docket A-94-04 data or complete the mapping of data in Attachment 2[9] to the floor data during the limited comment period. These data should be available in the docket for review and further analysis.

At a minimum, EPA should complete a series of GRI-GLYCalc™ model simulations to better assess emissions variability and obtain a more robust dataset. EPA could assess variability from operating parameters through modeling, where GRI-GLYCalc™ uses field conditions and compositional data to simulate and estimate the resulting estimated emissions. Emissions are based on a "snapshot sample" and do not represent conditions and composition variance over time. Parameters that may influence emissions variability include:

- Natural gas composition (BTEX and CO_2 content);

[9] ECR memorandum from Heather Brown (ECR) to Bruce Moore (EPA) titled Oil and Natural Gas Production MACT and Natural Gas Transmission and Storage MACT - Glycol Dehydrators: Impacts of MACT Review Options, July 28, 2011; EPA–HQ–OAR–2010–0505-0047

- Diethylene (DEG) or Triethylene glycol (TEG);
- Inlet temperature and pressure and inlet gas flow rate;
- Glycol circulation rate and pump type;
- Number of contactor stages and contactor temperature;
- Flash tank operating conditions (pressure and temperature);
- Ambient temperature;
- Reboiler temperature and absorber temperature and pressure; and,
- Stripping gas flow.

While EPA may argue that some of these parameters can be controlled by the operator and do not warrant consideration, there are clearly parameters (e.g., ambient conditions and process temperatures) that should be considered when assessing emissions variability.

In addition, the MACT Floor does not account for emission deviations during startup, shutdown or malfunction (SSM) events. Since SSM provisions are being rescinded, this issue is relevant not only for the new standards for small dehydrators, but also for the large dehydrator standards (e.g., for units already subject to Subpart HHH). Affirmative defense provision may provide some relief for malfunction events if EPA adopts the revisions recommended in Comment 22. However, startup and shutdown deviations are not considered. Although the averaging time for compliance dampens concerns regarding startup and shutdown emissions, EPA has an obligation to assess the implications from foreseeable events (e.g., inadequate temperature for a catalytic incinerator during startup) when developing standards. The Proposed Rule is silent on this issue.

In summary, the proposed standard is not a reasonable estimate of the performance of the "best controlled similar unit" under the worst reasonably foreseeable circumstances. At a minimum, EPA should complete a series of GRI-GLYCalc™ model simulations to better assess emissions variability and obtain a more robust basis for including variability in the standard. In addition, EPA should assess the implications of startup and shutdown events on both small and large dehydrator standards.

<u>Subpart HHH – Implementation</u>

29. Subpart HHH currently allows design analysis as a means to demonstrate control device performance. The Proposed Rule deletes design analysis for all but condensers. EPA has not demonstrated that design analysis has proven ineffective under Subpart HHH. The Final Rule should retain design analysis criteria consistent with the existing rule.

Under Subpart HHH, a design analysis can be used in lieu of performance testing to demonstrate compliance. Design analysis is allowed for enclosed combustion devices (e.g., thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater) and vapor recovery devices (e.g., carbon adsorption system or condenser). With the exception of condensers, the Proposed Rule would remove the design analysis option. §63.1282(d) in the proposed rule redline version shows this revision:

> "The owners or operators shall demonstrate that a control device achieves the performance requirements of §63.1281(d)(1)**,** ~~or~~ (e)(3)(ii)**, or (f)(1)** using ~~either~~ a performance test as specified in paragraph (d)(3) of this section**. Owners or operators using a condenser have the option to use** ~~or~~ a design analysis as specified in paragraph (d)(4) of this section."

In the Proposed Rule preamble, EPA states:

> "We are also proposing to: … remove the allowance of a design analysis for all control devices other than condensers; … These changes are being proposed to bring the NESHAP up-to-date based on what we have learned regarding control devices and compliance since the original promulgation date."

However, EPA does not provide or reference test results, studies, or source data from Subpart HHH (or Subpart HH) affected sources to support what they "have learned regarding control devices and compliance" and the decision to remove the design analysis compliance option. If EPA lacks evidence from units currently complying with Subpart HHH (or Subpart HH) to support this decision, such as non-compliant tests from design analysis-compliant control equipment, then the Final Rule should retain the design analysis compliance option consistent with the existing rule.

30. In some cases, control requirements and compliance monitoring in the Proposed Rule are more rigorous for small dehydrators than for large dehydrators. These discrepancies should be addressed and, at a minimum, similar criteria should apply to both. EPA should also consider less rigorous requirements for small dehydrators that properly consider relative impacts.

All things being equal, a small glycol dehydrator will have lower HAP emissions than a large dehydrator. However, as demonstrated below, there are several rule requirements for small dehydrators that are more stringent than comparable requirements for large dehydrators. This is counter to expected impacts. At a minimum, similar requirements should apply for small and large glycol dehydrators. One reason for this discrepancy may be that small dehydrator standards are based on uncontrolled units. However, the MACT floor emission standard will require control for some small dehydrators and any requirements associated with controls for small dehydrators should be similar to or have a lesser degree of stringency than large dehydrators.

§63.1282(d)(1) lists, for large glycol dehydrators but not for small glycol dehydrators, control devices that are exempt from the requirements to conduct performance tests. The same exemptions should apply to a small dehydrator which uses controls to comply. In addition, §63.1283(d)(2) lists, for large glycol dehydrators but not for small glycol dehydrators, control devices that are exempt from the monitoring requirements specified in paragraphs (d)(3) through (9) of this section. These control devices include:

- Boilers or process heaters in which all vent streams are introduced with the primary fuel or are used as the primary fuel.
- Boilers or process heaters with a design heat input capacity of 44 megawatts or greater.

For small glycol dehydrators, these control devices should be also exempt from the requirements to conduct performance tests and from the monitoring requirements.

In summary, rule requirements for small glycol dehydrators should be no more stringent than the analogous large glycol dehydrator rule requirement. For small dehydrators, EPA should consider less rigorous requirements that properly consider relative impacts. Requirements that may warrant less rigor for small dehydrator include: controls performance testing, monitoring, recordkeeping, and reporting.

31. EPA should reconcile several of the Subpart HHH testing and monitoring requirements for large and small glycol dehydrators to correct apparent errors. In addition, EPA should eliminate or clarify confusing cross-references, possibly by tabulating requirements. Finally, several of the Subpart HHH test methods and monitoring requirements are not appropriate and should be eliminated.

Subpart HHH uses extensive cross-references in testing and monitoring sections, which causes confusion and unnecessarily adds to compliance burden. In addition, similar requirements for large and small glycol dehydrators should be the same (or less stringent for small dehydrators) as discussed above. This is not the case for several rule requirements and some of these could be errors. EPA should review parallel requirements for large and small glycol dehydrators and revise as needed for consistency. Reduced use of cross-references would facilitate rule understanding and compliance certainty, and would likely reduce implementation issues. Tables within the rule that present measurement and monitoring criteria (by control device type) has been used in other NESHAPs and similar tabulation in Subpart HHH may improve clarity.

Specific comments that address rule-specific criteria follow:

- The proposed rule revisions change the temperature monitoring device accuracy requirements from +/- 2 to +/- 1 percent of the temperature being monitored expressed in °C. In the preamble, EPA states:

  > "we are proposing to revise the temperature monitoring device minimum accuracy criteria … to better reflect the level of performance that is required of the temperature monitoring devices. We believe that temperature monitoring devices currently used to meet the requirements of the NESHAP can meet the proposed revised criteria without modification."

  However, EPA provides no data or analysis to support the need for a more stringent accuracy requirement. At typical control device temperatures, any change in combustion efficiency and emissions caused by a temperature change represented by the difference between 1 and 2 percent accuracy is most likely not detectable. Further, EPA contradicts the need for the rule revision by stating that it believes that current temperature monitoring devices can meet the criteria without modification. If current devices are sufficiently accurate, why is there a need for a new accuracy standard? While this is a relatively minor issue, it provides another example of the Proposed Rule imposing an administrative burden without good cause. The primary effect of the rule revision would be to impose burden to modify internal procedures and/or recalibrate select devices.

- §63.1281(d)(1)(i) provides requirements for enclosed combustion control devices for "sources except small glycol dehydration units" (i.e., large units). INGAA's interpretation of this section of the rule is that:
  - Operators may comply with the requirements to reduce HAP emissions in accordance with §63.1281(d)(1)(i)(A) or (B) or (C) or (D).
  - Operators that comply with the requirement to reduce HAP emissions in accordance with §63.1281(d)(1)(i)(C) are only required to conduct an initial performance test that demonstrates that the combustion zone profile has a minimum temperature of 760°C. "Uniform" should be deleted from §1281(d)(1)(i)(C) because uniform is not defined in the rule and the complex interactions of flame zone reactions, mixing, and convective and radiative heat transfer preclude "uniform" combustion zone temperature profiles. Rather, it appears that EPA's intent is to require a minimum temperature of 760°C such that there are no low temperature pathways for HAPs to escape destruction. INGAA recommends the following rule revision:

    "For a control device that can demonstrate a ~~uniform~~ **minimum** combustion zone temperature **of 760°C** during the performance test conducted under §63.1282(d)**(3)(vii)**~~, operates at a minimum temperature of 760°C~~."

    In addition, confusion results from the failure to define how to demonstrate "a uniform combustion zone temperature." A minimum temperature target measured at a representative location is all that should be required. Therefore, INGAA recommends adding the following ***initial*** performance testing requirements in §63.1282(d)(3)(vii) to investigate combustion zone temperature:

    "(vii) To determine compliance with the minimum combustion zone temperature of 760°C specified in §63.1281(d)(1)(i)(C), the owner or operator shall profile the combustion zone temperature as follows:

    (A) Method 1 or 1A, 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the measurement sites in the combustion zone

    (B) The gas temperature at each measurement site shall be determined using a temperature monitoring device having a minimum accuracy of ±2 percent of the temperature being monitored expressed in °C, or ±2.5 °C, whichever is greater."
  - Operators that comply with the requirements to reduce HAP emissions in accordance with §63.1281(d)(1)(i)(D) are not required to conduct a performance test because this compliance option is an operating standard and does not have a numerical component.

  §63.1281(f)(1)(i) provides requirements for enclosed combustion control devices for small glycol dehydration units, and is restrictive because it lacks compliance options parallel to §63.1281(d)(1)(i) (C) and (D).

  INGAA requests that EPA confirm or clarify the above interpretation of §63.1281(d)(1)(i). To the extent possible (and considering the different numerical emission standards), EPA should institute like requirements for large and small glycol dehydrators – or small dehydrator requirements should be less rigorous rather than Proposed Rule criteria which imply more stringent criteria for small dehydrators.

- The proposed rule revisions add ASTM D6420–99 (2004) as an optional method for measuring BTEX emissions from small glycol dehydrators. It is not apparent that ASTM D6420–99 (2004) can be used for measurements on large glycol dehydrators. The rule should clarify that ASTM D6420–99 (2004) is applicable for measuring benzene, BTEX, or total HAP emissions from any affected source. And, it should be clearly indicated that this method provides an alternative to other allowed methods in the rule – i.e., Method 18 in 40 CFR Part 60, appendix A and any other method or data that have been validated according to the applicable procedures in Method 301, 40 CFR Part 63, appendix A.
- §63.1282(a)(2)(ii) requires the determination of a mass emission rate of benzene or BTEX, but only references EPA Method 18, which determines concentration of these species. EPA Method 1 and EPA Method 2, in addition to EPA Method 18, are required to measure mass emission rates. The rule should be reviewed for complete and accurate references to required test methods and appropriate engineering units (e.g., units for emission rate or concentration).
- §63.1282(e)(3) states:

  > "For inlet gas flow rate, compliance with the operating parameter limit is achieved when the value is equal to or less than the value established under §63.1282(h)."

  However, §63.1282(h) only applies to manufacturer performance tested combustion control devices and would not apply to dehydrators that are not equipped with manufacturer performance tested combustion control devices.
- §63.1282(h)(3) requires monthly visible emissions tests using Method 22 of 40 CFR 60, Appendix A. Monthly testing is excessively burdensome and not needed to assure combustor compliance because continuous monitoring of combustion control ignition is already required. The rule should be revised to eliminate visual emissions tests. At most, tests should be required every six months with an allowance for less frequent testing for units that routinely pass the visible emissions test. For example, for a unit that passes two consecutive emission tests, the next test would be required in 12 months. If EPA insists on retaining the onerous monthly testing requirement, then similar relaxed testing requirements for a compliant unit should be added. For example, for a unit that passes two consecutive monthly tests, the next test would be required in 2 months, and so forth until an annual testing schedule is achieved. In addition, if visible testing is retained, this would apply to some existing small dehydrators that may require control to meet the MACT floor emission standard. EPA has not considered the associated compliance costs and additional analysis is warranted to justify visible emissions (and other) testing requirements in the Proposed Rule for newly affected small dehydrators.
- §63.1282(h)(4)(iii) requires the replacement of fuel nozzle(s) and burner tubes after one failed visible emissions test. EPA should ***not*** stipulate specific equipment replacement or maintenance practices. Simple procedures (e.g., cleaning) may suffice, and other actions may be unnecessary and wasteful, or possibly not address the problem. The rule should delete these requirements and state that operators must perform maintenance and/or replace equipment as needed to restore combustion control device functionality.
- §63.1283(b) requires semi-annual inspections of manufacturer performance tested combustion control devices. EPA should ***not*** stipulate a specific inspection frequency. Instead, inspection and maintenance practices should be based on manufacturer

specifications or industry practices with procedures documented in the required inspection and monitoring plan.

- §63.1283(d)(3)(i)(A) in the redline version of the proposed rule (available in the docket) identifies the following proposed revision:

  "For a thermal vapor incinerator **that demonstrates during the performance test conducted under §63.1282(d) that combustion zone temperature is an accurate indicator of performance**, a temperature monitoring device equipped with a continuous recorder. The monitoring device shall have a minimum accuracy of ±~~2~~**1** percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. The temperature sensor shall be installed at a location **representative** ~~in the combustion chamber downstream~~ of the combustion zone **temperature**."

  This rule passage is poorly written and confusing. A literal reading infers that a thermal vapor incinerator performance test that does not demonstrate that combustion zone temperature is an accurate indicator of performance is not required to install a temperature monitoring device. Further, demonstrating that "combustion zone temperature is an accurate indicator of performance" would require testing over a range of temperatures and correlating performance with temperature. This is not a performance testing requirement in the Proposed Rule nor should it be. In addition, the Proposed Rule does not define or discuss how to determine "a location representative of the combustion zone temperature." To address these issues, INGAA recommends the following revisions to the Federal Register version of §1283(d)(3)(i)(A):

  "For a thermal vapor incinerator ~~that demonstrates during the performance test conducted under §63.1282(d) that combustion zone temperature is an accurate indicator of performance~~, a temperature monitoring device equipped with a continuous recorder. The monitoring device shall have a minimum accuracy of ±~~1~~**2** percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. The temperature sensor shall be installed at ~~a~~ **the** location **measured during the performance test**~~representative of the combustion zone temperature~~."

- §63.1283(d)(3)(i)(C) should clarify that a heat sensing monitoring device to indicate continuous ignition of the pilot flame is not required for flares equipped with electronic ignition systems.

- For boilers and heaters used as a control device, to address the temperature sensor location issue previously discussed for thermal vapor incinerators, INGAA recommends the following revisions to §63.1283(d)(3)(i)(D):

  "For a boiler or process heater, a temperature monitoring device equipped with a continuous recorder. The temperature monitoring device shall have a minimum accuracy of ±~~1~~**2** percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. The temperature sensor shall be installed at ~~a~~ **the** location ~~representative~~ of the combustion zone temperature **measured during the performance test**."

- The current rule flow meter accuracy requirement of +/- 10% for regenerative-type carbon adsorption systems should be retained in §63.1283(d)(3)(i)(F)(1). EPA has not demonstrated the need for a revised flow meter accuracy requirement including how this revision will

improve emission control, nor demonstrated that the additional cost to replace existing equipment and install alternative flowmeters is justified.

- The checks of mechanical connections for leakage required by §63.1283(d)(3)(i)(F)(1) should be performed every three months, rather than monthly, in concert with the required visual inspections. Absent moving parts, mechanical connections are extremely slow to develop leaks and more frequent checks add unnecessary labor and recordkeeping burden.
- For combustion control devices performance tested by the manufacture, §63.1283(d)(3)(i)(H)(2) requires, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame. This requirement should not apply for control systems with electronic ignition systems.

Miscellaneous Subpart HHH Items and Comments Solicited by EPA

32. EPA solicited comment on whether BTEX CEMS are appropriate. INGAA is strongly opposed to requiring CEMS.

In the Proposed Rule preamble, EPA requests comments on whether BTEX CEMS are appropriate (76 FR 52787). INGAA agrees with the preamble conclusion that CEMS are not practical due to attributes of the affected sectors – e.g., relatively remote locations, unmanned facilities, etc. In addition, BTEX CEMS operation and performance are questionable (i.e., not an established technology), emission levels are very low, and the benefit from such a high cost compliance assurance approach cannot be supported. Both capital and ongoing operation and maintenance costs would be significant even if the technology was feasible. CEMS should not be considered for this rule.

33. EPA solicited comments on whether references to Startup, Shutdown and Malfunction (SSM) requirements have been excluded. Minor revisions to Subpart HHH Table 2 are necessary to address SSM criteria in the General Provisions.

The preamble notes that requirements related to startup, shutdown and malfunction (SSM) events and the need for SSM Plans (SSMPs) are revised because the SSM exemption no longer applies. The Part 63 General Provisions (Subpart A) include requirements related to SSM events and SSMPs, and EPA requests comment on whether linkages have been appropriated addressed. A perfunctory review of the General Provisions and Subpart A applicable sections (according to Subpart HHH, Table 2) indicates that minor additional revisions are needed. Specific rule revisions are not provided here, but relevant Subpart A sections are identified where linkages should be addressed. EPA needs to clean-up Table 2 citations because inappropriate references to Subpart A sections could imply that documents (e.g., SSMPs), records, or reporting are still required. With the SSM exemption no longer allowed, associated criteria should no longer be applicable.

Relevant Subpart A sections that include SSM related criteria need to be properly referenced in Subpart HHH, Table 2, with either an indication that the section does not apply and/or an entry in the "Explanation" column that clarifies limitations. A list of Subpart A sections where Table 2 does not adequately bifurcate SSM criteria follows:

- §63.6(e) citation in Table 2 should explain selective applicability rather than simply stating "Yes" (i.e., Table 2 currently indicates that the section applies);

- §63.8(c)(1)(iii) should not apply;
- §63.10(b)(2) citation in Table 2 should explain selective applicability rather than simply stating "Yes" (i.e., Table 2 currently indicates that the section applies);
- §63.10(c)(7) – (8) require records related to the previous SSM paradigm and should no longer be required.

34. EPA's "Once in Always in" policy from 1995 provides a disincentive for HAP emission reductions. EPA should implement revisions to the policy based on criteria in a 2007 proposed rule.

EPA adopted a policy in 1995 that stipulates that a Part 63 affected unit at a major source remains an affected major source unit even if the facility subsequently reduces emissions and becomes an area source. In January 2007, EPA proposed to revise that policy and codify the criteria in Subpart A, §63.1(c)(6). That proposal would have reversed the 1995 policy and allowed area source requirements to apply to those sources that attain area source status regardless of previous status. INGAA commented on the 2007 proposal, but EPA never finalized the rule. Thus, the 1995 "Once in Always in" (OIAI) policy remains in place.

This policy results in disincentives to real and significant HAP (and VOC) emission reductions. Part 63 includes considerable burden associated with reporting and recordkeeping requirements. As more major sources NESHAPs are amended to add emission standards for smaller units, the incentive to avoid the Part 63 administrative burden by achieving area source status becomes more pronounced. However, the OIAI policy precludes pursuing such an approach, so facilities will remain major source emitters. The Proposed Rule is an example where facilities could undertake viable emission control programs, reduce emissions to area source levels, commit to the reductions in a permit, and be in a position to conform to area source rather than major source criteria in Subpart HHH (or HH).

It is time for EPA to revisit the 2007 proposed rule, understand that the 1995 OIAI policy is a disincentive to real emission reductions, and adopt a more progressive policy (or rule) that rescinds the 1995 policy. A new policy would also provide additional motivation to pursue innovative technologies or processes that reduce emissions. The OIAI policy limits the benefit to operators that would like to pursue emission reductions and stifles innovation.