

May 18, 2007

Mr. David Owen
New Jersey Department of Environmental Protection
Bureau of Operating Permits
PO Box 027
401 East State Street
Trenton, NJ 08625-0027

Re: NJDEP Proposed SIP Revision
Comments on Candidate Control Measures for VOC Storage Tanks

Dear Mr. Owen:

For your information and consideration, the following industry stakeholders (“stakeholders”) have compiled the enclosed comments regarding the Department’s Proposed Candidate Control Measures for VOC Storage Tanks:

Hess Corporation
Citgo Asphalt Refining Co., Paulsboro Refinery
Citgo Petroleum Corporation
Buckeye Partners, L.P.
IMTT- Bayonne
Colonial Pipeline Company
Kinder Morgan L.P.
Conoco Phillips
Sunoco
Motiva Enterprises
NuStar Energy, L.P.

Our comments are in response to the Department’s Whitepaper entitled, “Floating Roof Storage of Petroleum Products,” as well as the more detailed explanation provided by your staff in the meeting between stakeholders and the Department on May 11, 2007.

First and foremost, thank you for taking the time to meet with the stakeholders and share your status to-date on the State Implementation Plan (SIP) revision and rulemaking process. We understand that there is a scarcity of resources and an upcoming deadline for rule proposals that the Department must meet; your time is valuable and we hope that you found our meeting as productive and worthwhile as we did.

As we agreed at that meeting, the comments herein are focused on your proposed general Reasonably Available Control Technology (RACT) approach to reducing VOC emissions from floating roof storage tanks. They are also intended to provide the Department more information on actual operations so you can better understand the technical feasibility and practical implementation issues associated with some of the proposed control measures.

Understanding the Department's Goals for the Proposed SIP Revision

In 2005, the USEPA finalized its revision to the National Ambient Air Quality Standard (NAAQS) for ozone, establishing an 8-hour standard of 0.08 ppm, which was retroactively effective starting June 2004. All counties in New Jersey are classified as moderate nonattainment areas under the 8-hour standard. Therefore, the Department is required to achieve attainment within 6 years, or 2010, in part through implementation of reasonably available control technology (RACT) on stationary sources. Under the Federal rules, the State is required to submit the RACT SIP revision no later than September 16, 2006 and shall provide for implementation of RACT as expeditiously as practicable, but no later than May 1, 2009. The NJDEP's RACT revision was proposed in March 2007 and identified floating roof storage of petroleum products as a candidate source category for control. The Department will propose rules to reduce VOC emissions from this source category in July 2007, with final rules scheduled for May 2008.

During the May 11th meeting, you explained that the Department was taking a two-step approach to achieving its attainment goals. The first step is to target emission reductions that can be expeditiously implemented, by May 2009, and that will help the state achieve attainment by its 2010 deadline. The second step is to target longer-term emission reductions that are considered more capital intensive for implementation on a longer timetable, 2012 through 2015, to help the state continue on the attainment path.

As is discussed in more detail later, stakeholder comments provided herein are intended in part to identify those emission reductions that can be accomplished in the short term as compared to those that will require a longer timeframe. The concept of short-term and long-term emission reductions has parallels to operational restrictions inherent to storage tanks. There are some emission control measures that can be accomplished while a tank is in-service (i.e., short-term), while other control measures could not be done due to safety and operational factors until the tank is out-of-service (long-term). As discussed at our meeting, as a general rule of thumb, storage tanks are on a 10-year or greater out-of-service maintenance and inspection schedule under API guidelines, New Source Performance Standards, and the DPCC program and as a best practices procedure. In fact, some tanks may be on a 20-year schedule for full inspections based on their age and condition. Therefore, we believe that any proposed rulemaking for storage tanks must accommodate the infrequent out-of-service schedules and identify short-term and long-term emission reduction goals that coincide with existing and required tank maintenance and inspection schedules.

General Comments

There are several general comments that are common to all of the candidate control measures to some extent or another. Therefore, as an overview to our comments on the specific candidate control measures, please consider the following:

- There is variability across the various business sectors that are likely to be affected by this rulemaking and any control measures should incorporate the flexibility required to accommodate these differences;
- Storage tank capacity is critical to the business environment in New Jersey and there is no surplus storage capacity in this State; rulemakings should allow facilities to continue following established tank out-of-service schedules to prevent economic disruptions;
- Any candidate control measure should consider applicability criteria such as tank size, tank contents/vapor pressure, and the VOC emissions potential;
- The Department should consider exemptions to any proposed tank cleaning and degassing requirements or roof leg landing restrictions, if Operating Permit PTE's are maintained;
- The Department should consider incentives (such as exclusions from costly control measures) to schedule certain activities such as roof landings and cleaning and degassing during non-ozone season months; and
- Efforts to better quantify baseline emissions from certain targeted sources such as floating roof landings and external floating roof tanks in gasoline service will allow the Department to target areas of greatest emissions potential.

Floating Roof Landing Losses

It was clear from our meeting with the Department that the VOC emission potential from landing floating roofs is the most undefined VOC emission source on the part of both the Department and the industry. This is not unexpected. The methodology for estimating VOC emissions from floating roof landings was just formally published in the USEPA Compilation of Air Pollutant Emission Factors: AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources, Chapter 7 in November 2006. The methodology is not yet part of the TANKS emission calculation software and may not ever be added to it.

Industry does not dispute that VOC emissions from landing floating roofs is potentially a significant source of emissions for some facilities. However, the magnitude of emissions is unknown, the control measures currently in practice are not well documented, and the relative contribution by storage tank type, product type, and industry sector is undefined. Given the recent availability of the emission estimating methodology, it is likely that many sources have not included VOC emissions in the VOC potential emissions in their Title V Operating Permits. Sources that had historically accounted for landings may not have used current emission estimating methodology. Therefore, as a first step, stakeholders recommend that the Department initiate efforts to account for roof landing emissions in Title V permits, and address permitting issues that may delay such efforts. Failure to establish a sound baseline emission estimate may result in control measures

that are misapplied and do not decrease emissions to the extent predicted, as well as leading to the Department *underestimating* the emission reductions due to RACT measures imposed to limit floating roof landing emissions.

Industry does not expect that there will be no efforts focused on emission reductions from roof landings while parallel efforts are underway to better categorize the emission source. Some suggested short-term (in-place by May 2009) measures include:

- requirements to operate floating roofs at the lowest leg height setting or to switch to the lowest setting at the next out-of-service date if changing settings can not be accomplished while the tank is in-service, with exemptions for facilities whose tanks have physical constraints that would prevent such settings;
- requirements to quantify actual landing emissions and report them to the Department; and
- development of site-specific best management practices that identify operational controls and the emission reduction potential associated with those controls based on available emission estimating tools.

The Department has also identified potential physical controls to reduce VOC emissions from roof landings, including venting emissions to a VOC control device and reducing roof leg heights to 6 inches. The technical infeasibility of these control options for most facilities notwithstanding, the implementation timeframe for such options would be 10 or more years, due to the staggered out-of-service schedules for all tanks, and would not facilitate attainment with the ozone NAAQS by May 2010. From a technical standpoint, the design and specifications for roof landing loss vapor recovery systems are not well-defined. What is known, however, is that installation of roof landing vapor recovery systems would require major out-of-service modifications. The commenters were not able to identify any facility that has such a system operating. As was discussed during the May 11th meeting, the vapor control system that would be required to effectively control roof landing emissions would be a thermal oxidizer or a flare given the variable nature of such emission streams. There are obvious safety constraints to having such a device in close proximity to flammable storage. A more remote location for the device not only adds capital and operating costs to the project, but may also be infeasible due to space constraints in more urban locations. There are also significant permitting concerns with including new combustion emissions into existing Title V permits.

The control option of requiring a 6-inch leg height for roof legs is technically infeasible for any storage tank that was not designed as such; this is not merely a retrofit but in fact would often require a complete rebuild of the tank. As with the vapor control system, this is a 10-plus year modification, if it could be accomplished at all. Companies typically have safety policies that dictate which tanks' leg heights can be lowered while in-service, and procedures that must be followed to lower leg height settings for out-of-service tanks. If the tanks are old the legs can be rusted in place, subsequently the tank

must be emptied and the tank roof will be hoisted onto cribbing to dislodge the legs for lowering. These procedures are time-consuming, labor-intensive, and costly. Please note that there are other environmental issues in play with this option; tank fill may require a buried pipe, and retrofits to existing tanks are intrusive and potentially damaging to their long-term integrity. Also, by Code you cannot install any fill or suction diffuser below 6", they have to be installed in accordance with applicable codes. These diffusers are typically greater than 12" in diameter effectively limiting the landing height in many tanks to a minimum of 18" or 19." Although a 6-inch leg height setting is a good control measure for tanks that were constructed as such, also consider that good operational controls related to roof landings may result in fewer VOC emissions per annum than radical changes to tank construction. Based on the emission estimating methodology in AP-42, an internal floating roof storage tank with a 3-foot leg height setting that can limit landings to only a few per year and limit the duration of the landings will likely have lower emissions than the same tank with a 6-inch leg height that lands frequently.

During the May 11th meeting, you indicated that an emerging rule in Texas is serving as a template for the Department's proposed rule. Since the meeting, stakeholders have had an opportunity to review the Texas Commission on Environmental Quality (TCEQ) Subchapter B, Division 1, §115.110 through §115.117 that identifies control measures for storage of volatile organic compounds. While it may be expeditious to capitalize on TCEQ efforts to regulate emissions from landing floating roofs, the Department should also consider that the TCEQ rule establishes options and applicability criteria in its rulemaking that New Jersey should also consider. First, the TCEQ rule allows a floating roof to land under *any* of the following circumstances:

- when necessary for maintenance or inspection;
- when necessary for a change in service to an incompatible liquid;
- when the storage tank capacity is less than 25,000 gallons or the vapor pressure of the material is less than 1.5 psia;
- when the vapors are routed to a control device from the time the floating roof is landed until the floating roof is within 10 percent by volume of being refilled;
- when all emissions from roof landings have been included in a permitted emissions limit or cap; or
- when all emissions from floating roof landings at a regulated entity are less than 25 tons/yr.

As indicated by this list of criteria, the TCEQ has acknowledged that there will be instances that require a floating roof to land. The TCEQ has also acknowledged that control measures are only feasible when emissions from roof landings exceed a certain threshold (25 tons/yr) or have not been approved through the permitting process. Note also that TCEQ has a permit by rule that authorizes VOC emissions from floating roof landings up to 25 tons/yr.

To recap, the main issues associated with this candidate control measure are:

- The baseline emissions are not well-established;
- Most of the proposed control scenarios have technical and practical implementation issues that would prevent them from being in place in less than 10 years;
- Applicability criteria should exclude facilities based on emissions potential associated with roof landings, tank size, and tank product;
- An applicability criterion of less than 25 tons per year from tank landings (consistent with the TCEQ rule) is reasonable;
- The term “Convenience landings” should be well-defined;
- Control measures must be achieved in practice and be “reasonable” to be identified as RACT; and
- The Department should allow facilities to incorporate roof landing emissions, or to update emission estimates based on more current methodology, in their Title V Permits.

Application of NSPS/SCAQMD Rules to Existing Tanks

In the Department’s Whitepaper, the application of NSPS standards for floating roof seal and deck fitting specifications, as well as the adoption of NSPS tank inspection and maintenance requirements, are identified as candidate control measures. At the May 11th meeting, the Department also stated that some provisions from the South Coast Air Quality Management District (SCAQMD) Rule 1178 may be incorporated. Given that the Department requested stakeholder comments within a week of our meeting, there has not been ample opportunity to review Rule 1178. We urge the Department resist the piecemeal selection of provisions from a rule that is unfamiliar to stakeholders, especially when there is an incomplete understanding of the implementation issues that may exist with the rule. We also reiterate our general comments that any candidate control measure should incorporate reasonable applicability criteria, such as:

- Exemptions based on tank size and contents/vapor pressure;
- An exemption for tanks with a VOC emissions potential of less than 5 tons per year; and
- A consideration of equivalent control measures.

Regarding the NSPS provisions, 40 CFR Part 60 Subpart Kb identifies seal and deck fitting specifications for internal and external floating roof tanks as well as inspection criteria for the seals and fittings. It is our understanding that these requirements will be added to N.J.A.C. 7:27-16.2(h) as a RACT revision. It is important that the Department understand that seal and deck fitting modifications under Subpart Kb would have to be

accomplished when the tank is out-of-service, and allow for a longer implementation schedule for those changes. In fact, company safety policies typically dictate that any physical change to an internal floating roof has to be performed while the tank is out-of-service. Subpart Kb also identifies timelines for repairs when inspections indicate that seals or fittings are not meeting the desired criteria. If NSPS inspections schedules are incorporated into Subchapter 16, the timelines for repair should likewise be incorporated.

External Floating Roof (EFR) Tanks

- ***Dome Existing in Gasoline Service***
- ***Retrofit Slotted Guidepoles with Sleeves, Covers, etc.***

During the May 11th meeting, the Department requested input on the number of EFR tanks in the State currently in gasoline service. We agree that a “baseline” VOC emission potential should be established before proposing control measures that may in fact result in few emission reductions. Two candidate control measures focus on reducing emissions from such sources. One requires retrofit of slotted guidepoles with sleeves or covers to reduce VOC emissions, with an estimated VOC emission reduction potential of 1.6 tons per year per tank. Although the basis for the emission reduction estimate is unclear, one stakeholder reports VOC emission reductions from such retrofits on the order of 6.4 tons per year. In general, stakeholder consensus is that slotted guidepoles on EFR’s have already been retrofitted with sleeves or covers, and that the emission reduction achieved through these measures was greater than 1.6 tons per year per tank. The Department should consider refining its data to account for a greater emission credit.

The requirement to retrofit the slotted guidepoles is intended by the Department as an interim measure prior to requiring EFR’s to be equipped with domes. The Department estimates that, based on 2002 Emission Statement data, there are emissions of 400 tons per year from EFR’s in gasoline service and that equipping the tanks with domes will reduce these emissions by 63%. The baseline EFR upon which this emission reduction estimate is based is described by the Department as a “well-controlled” tank equipped with a dome.

For a comparison, we have estimated baseline VOC emissions for a typical EFR tank in gasoline service, using the default inputs for seals and fittings in USEPA’s TANKS program. The tank is assumed to have a total volume of 4 MM gallons, a diameter of 140 feet, an annual throughput of 120 MMgallons/yr, and storing RVP 10 gasoline. See Attachment 1 for a summary of tank assumptions and VOC emissions summary. Baseline VOC emissions were estimated as approximately 26 tons/yr. The same tank was then modeled assuming that the slotted guidepoles were sleeved (Control Option 1). Emissions were reduced to 19 tons/yr, a 26% reduction. The tank was then modeled as a domed external floating roof tank (Control Option 2) and emissions were reduced further to approximately 3 tons/yr. Consider, however, that better seals and fittings beyond “typical” (i.e. “well controlled”) are shown in Attachment 1 to reduce emissions from 19 tons/yr with Control Option 1 to 6.3 tons/yr, only 3 tons/yr more emissions than that

achieved with a domed roof. If the “well-controlled” EFR is domed, the emission reduction on a percentage basis is as considerable as the Department contends in its Whitepaper. However, on an actual tons basis, the VOC reduced is only on the order of 5 tons/yr.

Regarding cost-effectiveness, in the Department’s proposed SIP revision and during the May 11th, the Department was clear that there is no “bright line” for a cost-effectiveness threshold because of the degree of ozone nonattainment in New Jersey. Given that this rulemaking is a RACT rulemaking in which costs must be considered, the Department’s position is arguable. Regardless of the cost-threshold eventually selected, it is important that the Department have accurate and current cost data that is specific to facilities in New Jersey. There are many regional differences in price; cost data from other states and across industry sectors should not be used without some correction for these differences. The Department has identified a “present value” cost of an EFR dome as \$350,000; however, it is not clear what assumptions are incorporated into that estimate. Clearly, actual cost expenditures from sources in New Jersey show that retrofitting an EFR with a dome is a cost-intensive activity. The cost of domes increases significantly with larger tanks, with retrofits on tanks that are 150’ or greater costing greater than \$500,000. These costs are exacerbated by the fact that actual baseline emissions from EFR’s in gasoline service are not well-established and may be low, driving the cost-effectiveness of this control option to the cost-prohibitive range.

Finally, the Department should consider that some EFR’s may be permitted for dual service (distillates and gasoline) but are actually only in distillate use. Therefore, any control requirements should be contingent upon a tank being put into gasoline service. The Department should also consider an emissions threshold; tanks with emissions potential of less than 5 tons/yr are not going to be cost-effective to retrofit with domes, nor are they going to yield the level of emissions control needed for New Jersey to achieve attainment with the ozone NAAQS. In any event, doming of a storage tank would require an implementation deadline beyond the May 2010 attainment date.

As with the other candidate control options, we urge the Department to:

- Better establish baseline emissions;
- Identify exemptions based on tank size and contents/vapor pressure;
- Allow an exemption for tanks with a VOC emissions potential of less than 5 tons per year; and
- Allow for equivalent control measures.

Tank Cleaning and Degassing

Stakeholders recognize that VOC emissions from tank cleaning and degassing have been identified in recent years by regulators as potentially significant sources of emissions. In

fact, the Department cites the San Joaquin Valley Air Pollution Control District rules as its source for potential rulemaking. According to the Department, those rules require that the vapor space in the tank be vented to a control system with a 95% overall control efficiency during the tank cleaning and degassing event. Because tank cleaning and degassing are infrequent, the control systems are typically contractor-operated mobile sources temporarily used on-site.

Stakeholders do not disagree that VOC emissions from tank cleaning and degassing can potentially be controlled with mobile control units. However, the Department should address in its rulemaking, or in a separate parallel rulemaking, the following implementation issues:

- The Department must provide a mechanism to either exempt third party contractors from air permitting requirements or provide a streamlined and predictable approach for these contractors to obtain mobile source permits that allow them to operate their equipment at Title V facilities, and not require the end user to incorporate the equipment into its Operating Permit;
- Any proposed rule must specify the acceptable control technologies with a step by step procedure for use of each technology, and provide for reasonable equivalency demonstrations for alternative technologies. These procedures should address the cleaning/degassing period commencing upon roof leg landing through refilling of the vessel and be designed such that an equivalent surrogate for 95% control efficiency (ie. number of volume turnovers, or concentration threshold (ppm)) is achieved. It is not realistic to assume that a quantitative 95% overall emission control efficiency can be maintained throughout the entire process, as the control device can only be utilized for part of the entire event (from initial landing to refilling). Any proposed rulemaking should recognize certain technologies as inherently effective in meeting a control efficiency requirement and not require onerous parametric (i.e. minimum temperature requirements) or continuous emissions monitoring for these infrequent events;
- Any proposed rulemaking should exclude cleaning and degassing activities that occur outside of the ozone season promoting zero emission options during the ozone season over add-on controls that are sources of air pollution;
- Any proposed rulemaking should allow an exemption based on the vapor pressure of the material stored. If the vapor pressure of the material stored is less than 4.0 psia or, through distillate flooding is decreased to less than 4.0 psia, control of cleaning and degassing emissions should not be required;
- Required treatment period should be based on a four-volume exchange process; and
- A tank size threshold should be established.

Stakeholders appreciate the opportunity to participate in the SIP revision and rulemaking process; we think the Department would agree that rules based on sound engineering and operational practices and economics are more likely to be easily implemented and achieve environmental benefits in the short-term and long-term. We likewise realize that there may be additional site-specific data that will assist you in your rulemaking efforts. Stakeholders have agreed to provide information regarding tank inspection schedules, site-specific emissions data, and site-specific pollution control cost data via email to your attention at the Bureau of Operating Permits.

In the spirit of cooperation and collaboration, we respectfully ask that the Department provide us with an update on this rulemaking by the end of May, in the form of either a draft proposed rule or another meeting to outline the rule in greater detail.

Should you require additional information at any time, please contact me or any of the identified stakeholders at your convenience.

Sincerely,

John Maxwell
New Jersey Petroleum Council

cc: William O'Sullivan, NJDEP
Bennett Yalartai, NJDEP