Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments

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Subpart V—Nitric Acid Production

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Subpart V—Nitric Acid Production

U. S. Environmental Protection Agency
Office of Atmosphere Programs
Climate Change Division
Washington, D.C.

FOREWORD

This document provides EPA's responses to public comments on EPA's Proposed Mandatory Greenhouse Gas Reporting Rule. EPA published a Notice of Proposed Rulemaking in the Federal Register on April 10, 2009 (74 FR 16448). EPA received comments on this proposed rule via mail, e-mail, facsimile, and at two public hearings held in Washington, DC and Sacramento, California in April 2009. Copies of all comments submitted are available at the EPA Docket Center Public Reading Room. Comments letters and transcripts of the public hearings are also available electronically through http://www.regulations.gov by searching Docket ID *EPA-HQ-OAR-2008-0508.*

Due to the size and scope of this rulemaking, EPA prepared this document in multiple volumes, with each volume focusing on a different subject area of the rule. This volume of the document provides EPA's responses to significant public comments received for 40 CFR Part 98, Subpart V—Nitric Acid Production.

Each volume provides the verbatim text of comments extracted from the original letter or public hearing transcript. For each comment, the name and affiliation of the commenter, the document control number (DCN) assigned to the comment letter, and the number of the comment excerpt is provided. In some cases the same comment excerpt was submitted by two or more commenters either by submittal of a form letter prepared by an organization or by the commenter incorporating by reference the comments in another comment letter. Rather than repeat these comment excerpts for each commenter, EPA has listed the comment excerpt only once and provided a list of all the commenters who submitted the same form letter or otherwise incorporated the comments by reference in table(s) at the end of each volume (as appropriate).

EPA's responses to comments are generally provided immediately following each comment excerpt. However, in instances where several commenters raised similar or related issues, EPA has grouped these comments together and provided a single response after the first comment excerpt in the group and referenced this response in the other comment excerpts. In some cases, EPA provided responses to specific comments or groups of similar comments in the preamble to the final rulemaking. Rather than repeating those responses in this document, EPA has referenced the preamble.

While every effort was made to include significant comments related to 40 CFR Part 98, Subpart V—Nitric Acid Production in this volume, some comments inevitably overlap multiple subject areas. For comments that overlapped two or more subject areas, EPA assigned the comment to a single subject category based on an assessment of the principle subject of the comment. For this reason, EPA encourages the public to read the other volumes of this document with subject areas that may be relevant to 40 CFR Part 98, Subpart V—Nitric Acid Production.

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1.0 REPORTING THRESHOLD

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 3

Comment: The preamble states that we are proposing all nitric acid facilities report in order to simplify the rule and avoid the need for each facility to calculate and report whether it exceeds the threshold value. This reasoning is flawed. If all facilities are included, they will be required to perform the calculation for reporting purposes. The preamble does not provide a valid justification for requiring facilities under 25,000 metric tons CO_2e to report. The preamble states that all facilities except two exceed the 25,000 metric ton threshold. The J.R. Simplot Company operates a nitric acid plant and we have done sampling to determine a facility specific emission factor for N_2O. Based on this information we believe this assumption is incorrect. We have determined we would not exceed a 25,000 ton threshold.

Response: The preamble to the proposed rule stated that a few nitric acid production facilities may emit less than the 25,000 metric tons CO_2e per year. These estimates only included process emissions from nitric acid production. We elected to require all nitric acid production facilities to report because we believe that all nitric acid production facilities will meet the threshold when the stationary combustion emissions are estimated and included in the facility total emissions. We also believe that obtaining GHG emissions from all nitric acid production facilities will provide EPA with valuable data to better characterize greenhouse gas emissions from nitric acid production and provide a more credible position if EPA elects to exclude these sources from future GHG policy analyses. Therefore, the final rule retains the "all-in" applicability requirement for this source category.

However, the "once in, always in" provision has been removed from the final rule. The final rule now contains a provision to cease reporting if annual reports demonstrate emissions less than 25,000 metric tons CO_2e per year for 5 consecutive years. This provision applies to all reporting facilities, including those with nitric acid production processes.

Commenters may also be interested in reviewing Section II.H of this preamble for the response on provisions to cease reporting.

2.0 GHGS TO REPORT

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2

Comment Excerpt Number: 15

Comment: Section 98.222(b) indicates that reporting is required for emissions from "each stationary combustion unit." INVISTA has nitric acid production facilities that are part of integrated chemical complexes that are served by common steam generation boilers not entirely related to nitric acid production. Because these common boilers serve the steam needs of the entire plant, it is not clear if the emissions from these boilers should be included as emissions that are part of the Nitric Acid Production source category. To avoid double counting of emissions as explained in the previous comment for Adipic Acid Production, INVISTA requests section 98.222(b) read as follows: You must report CO_2, CH_4, and N_2O emissions from each stationary combustion unit. You must follow the requirements of subpart C of this part. Only the emissions from combustion units that are 100% dedicated to Nitric Acid Production should be reported under subpart V; combustion emissions from common combustion units should be reported under subpart C for General Stationary Fuel Combustion.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

3.0 SELECTION OF PROPOSED GHG EMISSIONS CALCULATION AND MONITORING METHODS

Commenter Name: Thomas Siegrist
Commenter Affiliation: Koch Nitrogen Company LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0351.1
Comment Excerpt Number: 5

Comment: Serious concerns about the practicality of N_2O stack testing warrant the use of emissions factors pending an EPA approved certification method for N_2O CEMS. The Proposed Rule calls for a specific schedule of stack testing at nitric acid production facilities to create and verify an emission factor that will be used to calculate nitrous oxide (N_2O) emissions. Proposed § 98.223 would require nitric acid production facilities to estimate N_2O emissions using a site-specific emission factor developed through initial stack testing. 68 Fed. Reg. at 16675. Proposed § 98.224(a) would require follow-up stack testing no less than annually to verify the emission factor, and whenever the production rate is changed by more than 10 percent from the production rate measured during the most recent performance test. At a nitric acid production facility, N_2O stack test results are likely to be affected by the condition of the platinum gauze catalyst at the exact time of the test. The platinum gauze catalyst is changed out at these facilities approximately every three months, so to satisfy the Proposed Rule's requirement that a facility verify its emission factor, a facility could have to repeat stack testing every three months at each production line to assess the actual impact of a new catalyst. In addition, due to widely fluctuating seasonal market demand, it is common for nitric acid production levels at these plants to change by more than 10 percent several times per year. These two considerations, when combined, mean that the Proposed Rule could be interpreted to require stack testing approximately six times per year on each production line at each nitric acid production facility.

This would be an extremely costly and unreasonable burden for nitric acid producers, and it is not clear that such testing could even be accomplished. As was shared with EPA in a meeting on May 19, 2009, nitric acid producers have only been able to identify one commercially available stack testing organization that claims to be equipped to perform N_2O testing in the United States, which is likely to make individual compliance with an industry-wide N_2O testing requirement extremely difficult.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

To address the practicality of N_2O stack testing, we have revised the rule to allow alternative methods, with Administrator approval. EPA understands the need to further evaluate and establish alternative comparable methods for sources to use in estimating N_2O emissions and will address in future rulemakings or amendments to rulemaking.

Commenter Name: Thomas Siegrist
Commenter Affiliation: Koch Nitrogen Company LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0351.1
Comment Excerpt Number: 6

Comment: There are other reliable and more practical N_2O emissions estimating approaches available. Those considered by EPA in the preamble to the Proposed Rule include the use of default emission factors (options 1 and 2), development of a correlation between oxides of nitrogen (NO_X) and N_2O emissions (option 4), and direct measurement of N_2O emissions using a CEMS (option 5). Id. at 16528-29. As noted in the preamble, direct measurement of N_2O emissions using CEMS (option 5) would provide the highest certainty and capture the smallest changes in emissions over time. Id. at 16528. But, as the preamble also notes, there is currently no EPA-approved method for certifying N_2O CEMS. KNC supports the use of CEMS in this application, on the basis that CEMS would generate the most accurate estimates of N_2O emissions, assuming an acceptable CEMS certification method could be developed. With that ultimate objective in mind, and to avoid imposing the likely infeasible task of N_2O stack testing across the industry, KNC proposes that nitric acid producers be allowed to use default emission factors to estimate N_2O emissions while EPA works with the industry to develop an acceptable CEMS certification method.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Thomas Siegrist
Commenter Affiliation: Koch Nitrogen Company LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0351.1
Comment Excerpt Number: 7

Comment: If EPA chooses to continue to pursue an approach requiring periodic stack testing, alterations in the Proposed Rule are necessary to reduce the burdens that the Proposed Rule would impose, such as (i) clarifying what type of change in production level would trigger the requirement for retesting, (ii) stating that facilities may use past stack test data with newly installed platinum gauze catalyst as predictive of future performance with new catalyst in lieu of new test data, (iii) excluding seasonal production changes from the stack test trigger, (iv) specifying a minimum time period over which a production rate change should be defined (i.e., twelve months), and (v) excluding unscheduled shutdown events from the trigger for retesting.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 8

Comment: The NPRM's proposed methodology for an annual stack test to determine N_2O concentration for nitric acid units is problematic. TFI understands that currently there are few commercially available stack test companies equipped to perform N_2O testing in the United States and no EPA-approved reference method for N_2O testing. Given the limited number of vendors capable of performing such tests, and the multitude of facilities requiring their services, these stack test requirements are overly burdensome. For example, TFI members have had to seek vendors from other states, hundreds of miles away, at excessive costs, to perform only a few tests. [Footnote: Specific monitoring visits; consultation; and travel costs have exceeded $10,000 per visit in certain instances.] TFI recommends EPA delay finalizing a methodology for N_2O stack testing for nitric acid units until it can coordinate with TFI to formulate a more accurate means for measurement from these sources. At the very least, EPA should clarify that the use of EPA Method 320 or use of Tedlar bag or Summa canister sampling and off-site analysis of the sample should satisfy the stack test requirement until EPA has provided a recommended and commercially viable method for stack testing.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 9

Comment: The NPRM's proposed 40 C.F.R. § 98.223(a) requires an annual performance test to measure N_2O emissions from the absorber tail gas vent for each nitric acid production line. 74 Fed. Reg. at 16,675. Additionally, proposed 40 C.F.R. § 98.224(a) requires a new performance test and calculation of a new site-specific emissions factor at least annually, as well as a new

performance test whenever the production rate of a production line is changed by more than 10 percent from the production rate measured during the most recent performance test. 74 Fed. Reg. at 16,675. Nitric acid plants cannot practically comply with this requirement given the variable rates of production at these facilities, and because any testing would be unreliable or commercially unavailable, as noted above, making timely reporting extremely difficult. Indeed, production rates at these plants often change by 10 percent on a monthly (and sometimes weekly) basis. For example, one TFI member facility had 52 instances in 2008 alone where the difference between the daily average production rate and annual average production rate was greater than 10 percent. Due to these logistical obstacles, and because GHG emissions are being estimated to identify long-term strategies to reduce the impacts of climate change, annual measurement would provide accurate and reliable data and be preferable. Furthermore, EPA should clarify in the NPRM that a new performance test would only be required by an increase in production rate. Decreased production rates would mean lower emissions, and should not result in an additional testing requirement.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 34

Comment: The TSDs for nitric acid and ammonia producers make unsubstantiated assumptions that all CO_2 in urea will constitute a release to ambient air. These documents also support requirements in the NPRM for specific QA/QC requirements that would vary depending on monitoring methods, but facilities would (despite that variability) be required to prepare an in-depth QA/QC plan, which would include checks on production data and calculations performed to estimate GHG emissions. EPA should develop guidance on how to prepare such a QA/QC plan when monitoring methods vary so greatly, not only from facility to facility, but from source to source.

Response: The nitric acid TSD makes no statements about urea, as it is not used in the production of nitric acid. See the preamble and response to comments document under Subpart G (Ammonia Manufacturing) for more details. See also response to comments document under section III of the preamble to this rule (see section A, General Provisions) for more details on the general QA/QC requirements and the monitoring plan requirements.

The proposed monitoring and QA/QC requirements associated with estimating process emissions from nitric acid production are outlined in the final rule (not the TSD) are under Subpart A (General Provisions) and under Subpart V, (Nitric Acid Production), 98.224 “Monitoring and QA/QC Procedures.” Under Subpart A (General Provisions), the final rule requires facilities to maintain a monitoring plan. The recordkeeping requirements under Subpart A, the general provisions, (98.3(g)(5)) outline or itemize the components of a monitoring plan that all affected facilities under this rule will be required to retain in the context of the applicable subpart. Under

Subpart V, facilities are required to follow these procedures to conduct the annual performance test. The rule requires that facilities retain records of all calculations and analyses used to estimate emissions (such as results from the performance test, documentation of the derived emission factor).

Also see the "Monitoring and QA/QC procedures" under Subpart C (General Stationary Combustion) 98.34, if applicable.

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 45

Comment: Sources should have the alternative option of using N_2O CEMS including development of appropriate QA/QC using site specific knowledge and manufacturers' recommendations. This should not be required but should be an alternative for those sources which believe the monitoring would better reflect their emission situation. Although there are no specific EPA protocols for N_2O monitors, sources should be allowed to develop their own QA/QC and have the background materials available for review by EPA. Some sources may utilize catalytic or other types of systems that may experience significant variations in emissions, such that the source believes it would be more cost effective to install a N_2O CEMS than to conduct stack testing emission profiles to determine emissions. Therefore, sources should be given the option to use either emissions testing appropriate for the application or to use CEMS for N_2O emissions determination.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 42

Comment: The requirement to do annual stack testing needs to be modified and continuous monitoring allowed as an alternative to meet the production profile and specific process configurations of individual sources. DuPont facilities produce nitric acid to supply other onsite production units whose production varies routinely from 40 to 60% of capacity. Therefore, significant variations in operating rate can be part of routine operation for some nitric acid production facilities. As EPA has indicated in its Inventory of US Greenhouse Gas Emissions and Sinks 1990-2007, N_2O emissions can vary significantly depending on what technology is employed by nitric acid plants, i.e., non-selective catalytic reduction (NSCR) or selective catalytic reduction (SCR). These technologies also experience variations in N_2O emissions over time due to catalyst degradation, so that specific-timed annual testing can result in emission rates

that are not indicative of actual emissions due to that catalyst degradation. Sources need to be able to stack test at varying rates and times to establish emission profiles. Alternatively, owners/operators should be allowed to install continuous N_2O emission monitors and thereby avoid periodic emissions testing.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 15

Comment: We support the use of Option 3 for the determining N_2O emissions. The N_2O emissions are dependent on site specific design and operation; therefore, a site specific emission factor needs to be used to report accurate emissions.

Response: We appreciate the support of the commenter. The final rule retains the requirement to determine a site specific emissions factor for GHG emissions from nitric acid production facilities.

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 17

Comment: The Technical Support Document for the Nitric Acid Production Sector lists 45 nitric acid production plants operating in the States. The name plate capacity and 2006 HNO_3 Production is listed. This information is incorrect. For example the JR Simplot Pocatello Nitric Acid facility is no longer operating. The production information is also incorrect. The JR Simplot Company is a privately held company and does not release financial information.

Response: Thank you for your comment. We appreciate any updated information that has been provided. The information in the TSD was given as an estimate of the nitric acid production industry at the time of the proposal. However, in an effort to have the most current and correct data available, a new version of the TSD for Nitric Acid has been added to the public docket that addresses this inaccuracy. This facility has been removed from the list.

4.0 DETAILED GHG EMISSION CALCULATION PROCEDURES/EQUATIONS IN THE RULE

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 17

Comment: Section 98.223(d) indicates that a facility-specific emission factor is to be calculated according to Equation V-1. Parameters for the equation provided include the N_2O concentration, effluent gas flowrate and the nitric acid production rate during the performance test runs. Although not explicitly stated, section 98.223(d) and (e) clearly indicate that the performance testing required in section 98.223(a) is to be conducted on the waste gas stream prior to abatement and that the "emission factor" actually represents the amount of N_2O generated by the process, not the amount released after abatement. To avoid potential confusion, INVISTA suggests that Equation V-1 read as follows: EF N_2O = Site-specific N_2O emissions factor (lb N_2O generated/ton nitric acid produced, 100 percent acid basis).

Response: The commenter is correct that performance testing should be conducted on the waste gas stream prior to any abatement technology. We have clarified that in the final rule.

We agree that the units of the site-specific N_2O emissions factor should be "lb N_2O generated/ton nitric acid produced, 100 percent acid basis" to avoid confusion between N_2O generated by the process and N_2O emitted after control (if any). This has been changed in the final rule.

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 18

Comment: Modify Emission Factor Units to be consistent. Section 98.226(d) describes the emission factors used in the reporting. For clarification and consistency with section 98.223(d), the emission factor description in sections 98.223(e) and 98.226(d) should be described as follows: §98.223(d): EF N_2O = Site-specific N_2O emissions factor (lb N_2O generated/ton nitric acid produced, 100 percent acid basis). §98.226(d): Emission factor(s) used (lb N_2O generated/ton of nitric acid produced).

Response: See the response to comment EPA-HQ-OAR-2008-0508-0481.2, excerpt 17.

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 19

Comment: Equation V-1 in section 98.23(d) utilizes a parameter "P" for the nitric acid production rate during the performance test. Section 98.224(b)(3) indicates that the production rate can be "determined through sales records, or through direct measurement using flow meters or weigh scales." In practice, production rates are not always determined by one or more of these measurement methods. For example, INVISTA uses the flow of feed to the nitric oxidation reactor and estimates a nitric acid production rate based on typical yields. In many situations, "sales records" are not generated because the product is shipped internally to other sites for further processing. To better reflect industry practice, INVISTA suggests that the acceptable rate determination methods incorporate the concept of "process knowledge" as an alternative to the methods currently specified. Section 98.224(b)(3) should read as follows: The production rate during each test and how it was determined. The production rate can be determined through sales records, process knowledge, or through direct measurement using flow meters or weigh scales.

Response: We agree that certain types of process knowledge or engineering calculations can be valid for determining operating parameters, such as production rate, based on industry consensus standards. However, in the case of nitric acid, generally allowing process knowledge as proposed in the comment can introduce significant error into the N_2O estimates. Use of ammonia feed, as suggested, to estimate nitric acid production during an emissions test is substantially less accurate than actual nitric acid production measurements because 1) it relies knowledge of the ammonia to nitrogen oxide conversion efficiency -- a value that is not easily measured and that changes based on the condition of the gauze; and 2) it does not account for NOx lost to atmosphere or reduced in an SCR or NSCR.

We believe that the direct measurements can be easily conducted during the same time period as the performance test and will improve the accuracy of the production rate (i.e. through the use of tank level and concentration measurements or through the use of mass flow monitoring equipment). Therefore, we are not allowing a generic statement of process knowledge to be the basis of the production rate.

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 20

Comment: Correct error in Process Emissions Calculation. Section 98.223(e) indicates that annual process emissions of N_2O are to be calculated according to Equation V-2. Parameters for the equation provided include the N_2O emission factor, a line-specific production rate, a destruction factor and an abatement device on-stream factor. The equation appears to have been derived from the equation for the IPCC Guidelines Tier 2 methodology shown in the Technical Support Document. The IPCC Tier 2 equation is a summation of overall abatement technology types used (including the possibility of no abatement), unlike Equation V-2 which is structured only to represent a single abatement technology or scenario. The resulting flaw can be demonstrated by examining the case where AFN is set equal to zero, i.e., the abatement technology was used 0% of the year. The net calculation would yield an E N_2O (annual mass

emissions) of 0 metric tons of N_2O. INVISTA suggests that Equation V-2 be corrected by following the summation format used in the IPCC Tier 2 methodology.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 21

Comment: Modify Destruction Factor to include one-design abatement technology. Section 98.223(e) utilizes a parameter DFN for the destruction factor for an N_2O abatement technology which is the efficiency factor specified by the manufacturer of the abatement device. INVISTA uses an abatement technology developed for a specific facility and, therefore, is not covered by a manufacturer's performance representation or specified efficiency factor. To cover these types of situations and to specify that N_2O is removed from the waste gas stream, not the air stream, INVISTA suggests that 98.223(e) be modified to read as follows: DFN = Destruction factor of N_2O abatement technology, as specified by the abatement device manufacturer or other process knowledge, (percent of N_2O removed from waste gas stream).

Response: We agree that process knowledge is a valid method for determining destruction efficiency in cases where manufacturer's performance representation is unavailable. The final rule has been changed to include the use of process knowledge in determining the N_2O destruction factor for any abatement technologies.

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 12

Comment: The NPRM's proposed 40 C.F.R. § 98.223(e) includes an unworkable calculation, Equation V-2. 74 Fed. Reg. at 16,675. TFI recommends the following equation instead: If N_2O abatement technology was installed on the production unit, the measured emission factor for the production unit with the abatement technology would have a performance test to demonstrate the em ission factor of the unit with the abatement technology. If the abatement technology is in service the entire the year, the equation should simplify to the following: EN20 = (EFN20*Pa)/2205 If the abatement technology was not in service for part of the year, the emissions would have to be calculated as the emissions with the abatement technology in service plus the estimated emissions without the abatement technology in service. An emission factor without the abatement technology in service may not be available without a performance test, and would therefore have to be estimated. The following two equations would be needed:
Emissions with the abatement technology in service: EN20 = (EFN20*Pa*AFN)/2205
Emissions without the abatement technology in service: EN20 = (EFN20*Pa*(1-

AFN)]/[2205*(1-DFN)] Combining the two equations for total emission: EN20 = (EFN20*Pa*(AFN*DFN-1)]/[2205*(DFN-1)] As discussed at the beginning, if AFN = 1 (100 percent of the year), the DFN terms would cancel out, and the equation would simplify as originally stated.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 21

Comment: It appears there is a typo in equation Eq. V-1.

Response: We appreciate any updated information received from commenters. We interpreted from our review of the published rule text that the commenter was referring to the additional "*" asterisk immediately following the "=" as the typo in Equation V-1. This additional "*" was deleted. No other commenters offered suggestions or comments for changes to Equation V-1. Without more specific recommendations on the changes that were needed, we have no justification for changing the equation further. Therefore, beyond this change, we did not revise the equation in the final rule from proposal.

5.0 MONITORING AND QA/QC REQUIREMENTS

Commenter Name: Gary Moore
Commenter Affiliation: Pensacola Plant of Ascend Performance Materials LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0366.1
Comment Excerpt Number: 12

Comment: Currently in § 98.224(a) a new performance test is required for Nitric Acid plants whenever the production rate changes by greater than 10% from the previous test. Chemical manufacturing facilities do not operate at constant production rates like a base loaded electric utility or a petroleum refinery. Nitric acid production rates are based on demand and vary significantly throughout the year. Additionally, environmental conditions such as ambient air temperature affect maximum production rates. The requirement for Nitric Acid in 98.224(a) mandating reestablishing a new emission factor through source testing when the production rate changes by more than 10% would require frequent testing every year, be logistically difficult and does not explain how to handle production rate changes during startup and shutdown. A review of Ascend Performance Materials LLC Pensacola plant's nitric acid production data from 2006 and 2007 indicates there were 58 and 63 days respectively where daily production rates changed by more than 10% from the previous days total production. If a monthly average change of 10% was chosen as the threshold for requiring additional testing, thirteen (13) sampling events would have been required in 2006-2007. Based on actual testing, a single day of testing at

our site costs a minimum of approximately $8,600 (two consecutive days of testing costs a minimum of $11,000). This requirement adds unreasonable costs to compliance with this rule as proposed. A proposed alternative to this retesting problem would be to require a single test annually. The source would be required to retest if production rates increased by 10% above the previous test rate.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 16

Comment: Modify stack test requirement to allow alternative methods. Sections 98.223(b) and 98.224(b) indicate that the annual stack test for N_2O is to be conducted using EPA Method 320 in 40 CFR part 63, Appendix A to measure the N_2O concentration. EPA Method 320 is an elaborate FTIR method that is not widely used in industry. Stack testing contractors employed to determine N_2O concentrations generally employ an IR method that yields results that are accurate by current industry standards. INVISTA suggests that both section 98.223(b) and 98.224(b) be modified to authorize alternative monitoring methods approved by the Administrator, similar to the authorization for alternative methods for Relative Accuracy tests set forth in section 60.13(j) of the NSPS section 60.13(j). §98.223(b) should read as follows: You must conduct the emissions test(s) using EPA Method 320 in 40 CFR 63, appendix A, ASTM D6348-03 incorporated by reference in §98.7, or an alternative method approved by the administrator to measure the N_2O concentration in conjunction with the applicable EPA Methods in 40 CFR 63, Appendixes A-1 through A-4. Conduct three emissions test runs of 1 hour each. Alternative methods currently in use (including CEMS) at facilities may continue to be used until reviewed by the administrator. §98.224(b) should read as follows: Each facility must conduct the performance test(s) according to a test plan and EPA Method 320 in 40 CFR 63, appendix A, ASTM D6348-03 (incorporated by reference in §98.7), or an alternative method approved by the administrator. Alternative methods currently in use (including CEMS) at facilities may continue to be used until reviewed by the administrator. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. The report must include the items in paragraphs (b)(1) through (3) of this section.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: W. Walter Tyler
Commenter Affiliation: INVISTA S.a r.l. (INVISTA)
Document Control Number: EPA-HQ-OAR-2008-0508-0481.2
Comment Excerpt Number: 22

Comment: Revise Performance Test requirements to require annual tests only. Section 98.224(a) indicates that the performance test must be conducted at least annually or more often whenever the nitric acid production rate is changed by 10 percent from the rate measured during the most recent test. Since the annual performance test is performed under a range of conditions, INVISTA believes that the annual test will account for these variations. The requirement to perform additional performance tests when rates change by 10% is unnecessary and will not lead to more accurate data collection. INVISTA suggests that section 98.224(a) be modified to remove this requirement. Section 98.224(a) should read as follows: You must calculate a new facility-specific emissions factor at least annually. The new emissions factor may be calculated using all available performance test data (i.e., averaged with the data from previous years). Where process modifications have occurred or operating conditions have changed, only the data consistent with the reporting period after the changes were implemented shall be used.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 43

Comment: In §98.224(a), EPA proposes to require at least annual performance testing and calculation of a site specific emission factor. The provision also proposes additional performance tests whenever the production rate is changed by more than 10 percent from the production rate measured during the most recent performance test. Such a provision is impractical as it does not account for rate variations during start-up and shutdown. Moreover, rate variations are common and frequent in this and many other industries. The 10% variation criterion is too stringent: DuPont recommends the criterion be modified to at least 20%. Further, the basis should not be limited to the most recent performance test; rather, other tests conducted in the past 12 months should also be taken into account. That is, if performance testing has been conducted within the prior 12 months over a range of rates that includes the new rate plus or minus 20%, no additional performance testing should be necessary.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 32

Comment: The NPRM appears to require emissions measurements or default value reporting based on capacity and whether the facility has implemented control devices. Several EPA technical support documents (TSDs) fail to consider alternatives to these measurement methods

for N_2O emissions. For example, one widely accepted approach to measure N_2O emissions is Infrared Spectroscopy, and EPA has promulgated its Method 320 for on-site N_2O measurements. TFI recommends that EPA include another option for N_2O emission measurements – the use of Tedlar bag or Summa canister sampling and off-site analysis of the sample. This approach is a reliable approach for monitoring N_2O emissions, but far less costly (approximately $2,000 per test) than the methods contemplated by the NPRM (approximately $15,000 per test).

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Robert Rouse
Commenter Affiliation: The Dow Chemical Company
Document Control Number: EPA-HQ-OAR-2008-0508-0533.1
Comment Excerpt Number: 28

Comment: Variation in production rate before requiring a new performance test Section 98.224(a) requires at least annual performance testing and calculation of a site specific emission factor. It also requires additional performance tests whenever the production rate is changed by more than 10 percent from the production rate measured during the most recent performance test. The requirement for the additional testing is problematic and impractical for several reasons: 1. It is not uncommon for production rates to vary by more than 10% many times over a year. For example, based on the operating rates at Dow's nitric acid facility, changes of up to 15% are typical. 2. The 10% production change is relative only to the most recent performance test, which could result in a significant and unwarranted number of performance tests. For example a facility may conduct a performance test at 100% capacity. During the next month, the facility may reduce its rates down to 90% to control inventory, requiring a new performance test. If the rates are increased back to 100% the following month, then yet another performance test would be required as the rates are more than 10% from the most recent performance test 3. The time frame for determining production rate is not specified in the proposed rule. This could be interpreted to mean anything from instantaneous rate to an annual rate. Additionally, reduction of operating rates for a short time (a portion of a day) to perform minor maintenance on a piece of equipment should not require an additional performance test. Additionally, there may be unplanned activities and it may not be possible to schedule a vendor to conduct the test. The proposed rule also does not account for rates varying during start up and shutdown. As written, the proposed rule could be interpreted to mean performance tests are required for each 10% increment from zero to 100% capacity. Short term variations in production rate should not materially impact the amount of GHG's emitted. 4. To understand better the reality proposed by the rule, Dow contacted vendors regarding the test method specified. These vendors stated that these tests would need to be scheduled in advance of performance. In addition, the vendors estimated the cost to perform the tests would be $5000 per test. Therefore, as written, the proposed rule is unduly burdensome and costly on regulated entities. It is suggested that Subpart V only require testing on an annual basis. Alternatively, the rules should be modified to reduce the amount of testing required. One option would be to allow up to 15% change in operating rates before a new performance test is required, and retesting should not be required if a performance test within 1 5% of the new rate has been conducted during the last 12 months. Additionally, EPA should

clarify how the production rate is determined to eliminate testing simply due to the varying rates during start up, shutdown and maintenance. It is suggested that the production rate be determined on a monthly basis. Below is suggested language for 9 8.224(a) for this alternative: You must conduct a performance test and calculate a new emissions factor at least annually. You must also conduct a new performance test whenever the production rate of a production line is changed by more than 15% from the production rate measured during a performance test conducted during the previous 12 months, provided a significant process modification has not occurred. The new emissions factor may be calculated using all available performance test data (i.e., averaged with the data from previous years), except where process modifications have occurred or operating conditions have changed. Only the data consistent with the period after the changes were implemented shall be used. Production rate is to be determined on a monthly basis.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Lorraine Krupa Gershman
Commenter Affiliation: American Chemistry Council (ACC)
Document Control Number: EPA-HQ-OAR-2008-0508-0423.2
Comment Excerpt Number: 113

Comment: Section 9 8.224(a) requires at least annual performance testing and calculation of a site specific emission factor. It also requires additional performance tests whenever the production rate is changed by more than 10 percent from the production rate measured during the most recent performance test. The proposed requirement for the additional testing is problematic and impractical for several reasons: (1) The proposed rule does not account for rates varying during start up and shutdown. As written, it could be interpreted that performance tests are required for each 10% increment from zero to 100% capacity. (2) It is not uncommon for production rates to vary by more than 10% many times over a year. (3) The 10% production change is relative only to the most recent performance test, which could result in a significant and unwarranted number of performance tests. For example a facility may conduct a performance test at 100% capacity. During the next month, the facility may reduce its rates down to 90% to control inventory, requiring a new performance test. If the rates are increased back to 100% the following month, then yet another performance test would be required as the rates are more than 10% from the most recent performance test. It is suggested that this section be changed to allow up to 15% change in operating rates before a new performance test is required. Additionally, retesting should not be required if a performance test within 15% of the new rate has been conducted during the last 12 months. Below is suggested language for §98.224(a): "You must conduct a performance test and calculate a new emissions factor at least annually. You must also conduct a new performance test whenever the production rate of a production line is changed by more than 15% from the production rate measured during a performance test conducted during the previous 12 months, provided a significant process modification has not occurred. The new emissions factor may be calculated using all available performance test data (i.e. averaged with the data from previous years), except where process modifications have occurred or operating conditions have changed. Only the data consistent with the period after the changes were implemented shall be used."

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 33

Comment: The NPRM appears to require emissions measurements or default value reporting based on capacity and whether the facility has implemented control devices. Several EPA technical support documents (TSDs) fail to consider alternatives to these measurement methods for N_2O emissions. For example, one widely accepted approach to measure N_2O emissions is Infrared Spectroscopy, and EPA has promulgated its Method 320 for on-site N_2O measurements. TFI recommends that EPA include another option for N_2O emission measurements – the use of Tedlar bag or Summa canister sampling and off-site analysis of the sample. This approach is a reliable approach for monitoring N_2O emissions, but far less costly (approximately $2,000 per test) than the methods contemplated by the NPRM (approximately $15,000 per test).

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 18

Comment: A new performance test is required whenever the production rate of a production line is changed by more than 10 percent from the production rate measured during the most recent performance test. Please clarify how soon a performance test must be conducted when a change in production occurs.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 19

Comment: It is not feasible to perform a performance test every time the production rate changes by 10% given the variable rate of production at these facilities. It is not always know well in advance if production rates will be changed. It takes considerable time to schedule and

conduct a performance test, which will not always be possible to have completed when the change needs to occur. Also, if there is previous testing at that production rate it could be representative and testing would not need to reoccur, but the rule requires any changes from most recent performance test.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 20

Comment: There are several different conditions and operating parameters that will effect emissions. It is our opinion that a change in production is not necessarily going to affect N_2O emissions depending on the facility and the abatement methodology used. We recommend eliminating the requirement of a performance test based on production rate changes and instead just require an annual performance test.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

6.0 PROCEDURES FOR ESTIMATING MISSING DATA

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 14

Comment: TFI suggests additional options under proposed 40 C.F.R. § 98.225, which provides procedures for estimating missing data. 74 Fed. Reg. at 16,675. Nitric acid processes typically run within measured plant efficiency. Annual capacity could be based on product flow measurement or feed material flow measurement assuming the efficiency of the plant is constant and known. Tracking efficiency when both flow meters are in service can provide facilities a way to estimate the production without having to install additional product measuring flow devices. Proposed 40 C.F.R. § 98.35(b)(2) allows combustion sources to use estimation methods for "stack gas flow rate, fuel usage, or sorbent consumption, based on all available process data." 74 Fed. Reg. at 16,637. TFI requests that nitric acid production facilities be allowed the same flexibility given that they are combustion sources.

Response: Missing data provisions for production rate have been added to the final rule to allow facilities the option of basing the best available estimate on process data or data used for accounting purposes. We believe that this language offers the flexibility that the commenters requested without sacrificing data quality.

7.0 DATA REPORTING REQUIREMENTS

Commenter Name: Robert Rouse
Commenter Affiliation: The Dow Chemical Company
Document Control Number: EPA-HQ-OAR-2008-0508-0533.1
Comment Excerpt Number: 29

Comment: Section 98.226 lists specific data reporting requirements for nitric acid facilities. Annual production rates, capacity and operating hours are clearly Confidential Business Information and would need to be classified as such. It is recommended that these items be removed from this section and be required to instead be retained by the facilities and made available for review by EPA and States.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 13

Comment: The proposed 40 C.F.R. § 98.226(a) requires reporting of "[a]nnual nitric acid production capacity (metric tons)." 74 Fed. Reg. at 16,675. TFI recommends that EPA clarify this language to instead read "annual nitric acid permitted production capacity."

Response: We agree that production capacity can have multiple meanings. Therefore, this parameter has been changed to "annual nitric acid permitted production capacity" in the final rule.

Commenter Name: Thomas Siegrist
Commenter Affiliation: Koch Nitrogen Company LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0351.1
Comment Excerpt Number: 8

Comment: There is no basis for requiring the reporting of annual operating hours; only those parameters tied to GHG emissions should be reported. The Proposed Rule would require annual reporting of the number of operating hours for each nitric acid production line. Id. at 16675 (proposed § 98.226(c)). In the preamble to the Proposed Rule, EPA states that it is seeking this operating hour information (along with production capacity and actual production) to determine the potential for growth in the nitric acid industry Id. at 16529. But industry growth is driven entirely by product demand, and operating hours are not a reasonable indicator of this demand, so there is no basis for the operating hour reporting requirement and it should be removed.

Moreover, a greenhouse gas (GHG) reporting rule is not an appropriate mechanism for conducting a growth analysis for any industrial sector; instead, the reporting requirements should focus on emissions. Given the annual schedule for GHG reporting, EPA will be able to identify any trends in those emissions (which may or may not be tied to production levels) over time.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Sarah B. King
Commenter Affiliation: DuPont Company
Document Control Number: EPA-HQ-OAR-2008-0508-0604.1
Comment Excerpt Number: 44

Comment: §98.226 lists specific data reporting requirements for nitric acid facilities. Annual production rates, capacity and operating hours are clearly Business Confidential Information and would need to be classified as such. It is recommended that these items be removed from this section and be required to be retained by the facilities and made available for review by EPA and the states.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

Commenter Name: Burl Ackerman
Commenter Affiliation: J. R. Simplot Company
Document Control Number: EPA-HQ-OAR-2008-0508-1641
Comment Excerpt Number: 16

Comment: We recommend not including nitric acid production capacity or number of operating hours in the reporting requirements. The rule already requires N_2O emissions to be reported, including additional production information provides no meaningful information for determining the GHG emissions from these facilities.

Response: A response has been provided in section III of the preamble to this rule (see section V, Nitric Acid Production).

8.0 OTHER SUBPART V COMMENTS

Commenter Name: Thomas Siegrist
Commenter Affiliation: Koch Nitrogen Company LLC
Document Control Number: EPA-HQ-OAR-2008-0508-0351.1
Comment Excerpt Number: 9

Comment: There is an error with respect to KNC's facilities in the Nitric Acid Production Technical Support Document, EPA-HQ-OAR-2008-0508-022. The Nitric Acid Production Technical Support Document (TSD) should be amended to correctly identify the abatement technologies and monitoring methods utilized at KNC's facilities. KNC's Beatrice and Dodge City plants both utilize non-selective catalytic reduction (NSCR) abatement technologies, and both plants were operating with NSCR in 2006.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1641, excerpt 17.

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 36

Comment: The Technical Support Document for the Nitric Acid Production Sector contains several inaccurate statements. For example, this TSD states that "[t]he N_2O originates in the absorption tower;" however, N_2O is formed in the converter where the ammonia and air are reacted in the presence of a platinum catalyst and the gas stream is then cooled as it passes through the waste heat boiler. Also, in some facilities, a small percentage of the total N_2O (approximately 10 percent of the total) is formed in the selective catalytic reduction (SCR) device that controls NOx emissions in the tail gas.

Response: See the response to comment EPA-HQ-OAR-2008-0508-1641, excerpt 17. The rule does not currently address N_2O emissions from selective catalytic reduction (SCR) devices that control NOx emissions in the tail gas.

Commenter Name: William C. Herz
Commenter Affiliation: The Fertilizer Institute (TFI)
Document Control Number: EPA-HQ-OAR-2008-0508-0952.1
Comment Excerpt Number: 37

Comment: TFI members have noted that the TSDs rely on incorrect nameplate capacity for both ammonia/urea and nitric acid production data (several TFI members have confirmed this). TFI would be happy to discuss these errors with EPA. Additionally, Table 2 in this TSD does not explain how the total N_2O emissions were calculated, and provides no basis for the assumptions given as to which of the N_2O emissions factors provided in Table 3 were used to calculate the emissions in Table 2, or what production rate was used in those calculations. Table 3 also does not contain an emissions factor for dual pressure nitric acid plants. EPA should correct these errors, explain these ambiguities with its TSD, provide the basis for the assumptions in its calculations, and allow nitric acid producers to verify and comment on EPA's methods and assumptions.

Response: The purpose of the TSD was to outline the choices considered for each provision in the rule. The information was given as an estimate of the nitric acid production industry at the

time of the proposal. The production rates were either gathered from title V permits or estimated based on nameplate capacities from ICIS. The type of nitric acid production process (gathered from title V permits where available) determined the default emission factor that was used. Per IPCC guidelines, emissions factors for dual pressure plants were assumed to be consistent with medium to high pressure plants. If reliable information on the type of process was not available, the high pressure plant emissions factor was used as the default. The production rates were multiplied by the appropriate default emissions factors to estimate emissions. These emissions estimates were based on the best available information and some assumptions. Our estimates were consistent with methodologies applied in the in the US Greenhouse Gas Inventory. Without more detailed information on the errors and ambiguities, we are unable to comprehensively update the nameplate capacities in the TSD for Nitric Acid and the associated facility-level emissions calculations.

Comment: Generally across the rule, commenters requested use of alternate standards and in some cases proposed alternative standards for determining particular parameters used to estimate emissions**.**

Response: For Subpart V, we wanted to note that there is an EPA approved method and an ASTM method that have been developed for estimating N_2O emissions; however, facilities have indicated that other methods such as N_2O CEMS are also being used that can provide more accurate estimates of emissions. Therefore, after review and consideration, EPA agrees and is allowing administrator approval for methods used by nitric acid facilities. This approach assures that EPA will have a list of the most up-to-date standards/methods and protocols being used by industry which are comparable and provided consistency in reported emissions. This approach will also help inform future EPA rulemakings related to monitoring of N_2O emissions from nitric acid production. After review of submitted methods, EPA may amend this rule with one or more alternative methods.