Lhoist

March 11, 2024

U.S. Environmental Protection Agency
EPA Docket Center
Docket ID No. EPA-HQ-OAR-2017-0015
Mail Code 28221 T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

(Submitted electronically at http://www.regulations.gov)

RE: Comments of Lhoist North America on the Supplemental Notice of Proposed
Rulemaking: National Emission Standards for Hazardous Air Pollutants: Lime
Manufacturing Plants Amendments, Docket ID No. EPA-HQ-OAR-2017-0015, RIN
2060-AV59

Dear Sir or Madam:

Lhoist North America (LNA) appreciates the opportunity to comment on EPA's Supplemental
Notice of Proposed Rulemaking: National Emission Standards for Hazardous Air Pollutants:
Lime Manufacturing Plants Amendments. LNA owns and operates fifteen lime manufacturing
facilities in North America that produce high calcium quicklime, dolomitic quicklime, and/or
hydrated lime. Seven of these facilities are currently categorized as a major source of HAP and
subject to the proposed rules.

Lime is an integral product in many manufacturing processes and industries. Lime is a critical
component in environmental compliance, as it is used to purify domestic and industrial water
sources and remove pollutants from industrial air emissions. It is also an important part of the
steel manufacturing process and used throughout the construction industry to assist in the
building of roads and soil stabilization projects, and in the creation of building products like
mortar and plaster.

LNA is a member of the National Lime Association (NLA). NLA has developed comprehensive
comments addressing all aspects of EPA's proposed regulation. LNA strongly endorses NLA's
comments on the proposed rule. In addition to the comments provided by NLA, LNA would like
to emphasize the following points.

A. EPA Should Regulate HCl with a Health-Based Emission Limit (HBEL)

In the February 9, 2024 Federal Register notice, EPA explicitly requested comments on the
implementation of a health-based emission limit (HBEL) to regulate emissions of HCl. LNA
supports NLA's position on this matter and believes that NLA's experts have provided sufficient
information to regulate HCl as a threshold pollutant. Subsequently, EPA's should regulate HCl
using the proposed HBEL's referenced in the Federal Register notice (300 TPY and 685 lb/hr).

Based on the conclusions from NLA, LNA believes the proposed HBEL's provide an ample margin of safety.

B. EPA Should Better Define Compliance Deadlines

In EPA's proposed redlined text of 40 CFR Part 63, Subpart AAAAA, EPA has proposed to add additional language related to the compliance demonstration deadline for existing sources. This added language creates uncertainty and ambiguity in the compliance deadline. For example:

> *63.7083(d): If you have an existing affected source, you must comply with all applicable emission limitations for the existing affected source, and you must have completed all applicable performance tests no later than [INSERT 3 YEARS AFTER DATE OF FINAL RULE PUBLICATION IN THE FEDERAL REGISTER], except as noted in paragraphs (h)(1) and (2) of this section.*

> *63.7083(h)(1): If your affected source commenced construction or reconstruction on or before [INSERT DATE OF FINAL RULE PUBLICATION IN THE FEDERAL REGISTER], then the compliance date for the revised requirements promulgated on [INSERT DATE OF FINAL RULE PUBLICATION IN THE FEDERAL REGISTER] is [INSERT 180 DAYS AFTER THE DATE OF FINAL RULE PUBLICATION IN THE FEDERAL REGISTER].*

In previous communications with EPA, the deadline to demonstrate compliance with the revised standards was expected to 3 years after the publication of the rule in the Federal Register. The first half of 63.7083(d) seems to be consistent with this expectation; however, EPA has noted exceptions to this determination in 63.7083(h)(1) stating the compliance deadline with the revised requirements is 180 days after publication of the rule in the Federal Register.

EPA should remove 63.7083(h)(1) from the proposed regulation to clearly state compliance with the revised requirements is expected to begin 3 years after the publication of the final rule in the Federal Register.

C. EPA Significantly Underestimated the Capital and Operating Cost Implications of the Proposed Rule

LNA believes that there are likely significant errors in EPA's determination of the add-on control requirements necessary to achieve compliance with the proposed rule. For example, EPA has documented the emission test results for total organic HAP from 17 individual kilns. From these 17 sources with test data, EPA has determined that seven sources will not comply with the proposed emission standard of 1.7 ppmvd @ 7% O_2. Two kilns are expected to utilize activated carbon injection while the other five will require the installation and operation of an RTO to achieve compliance.

For the remaining 76 kilns where emission test data is not available, EPA has estimated that only 3 kilns will not be able to achieve the proposed emission limit without the aid of add-on controls. This assumption is not logical. Of the sources with available test data, approximately 40% will require emission controls. For those sources without test data, EPA is assuming that only 4% will required add-on controls. Errors made in these assumptions will greatly affect the cost impacts of the proposed rule.

EPA should re-evaluate the cost impact based on additional data measurements and more realistic assumptions.

D. EPA Should Update Total Organic HAP Emission Standards Such That RTO's Are Not Necessary for Compliance

In EPA's proposed rule, it is assumed that the lime industry will need to install and operate 7 RTO's to demonstrate compliance with the proposed total organic HAP emission standard. EPA has estimated that these RTO's will generate a combined total of 47 TPY NO_X, 94 TPY SO_2, and 16,123 TPY CO_2. However, the emission increases estimated by EPA are based on the added electricity demand that will be required to run the RTO's. EPA has not taken into account the added emission increase from the combustion of natural gas to operate each RTO. When this is considered, emission increases (e.g. NO_X, GHG, etc.) from the utilization of RTO's is expected to be much more significant than the current values estimated by EPA.

EPA estimates that these added emissions are being used to reduce total organic HAP by 16.58 TPY. EPA should re-evaluate if the increase in criteria pollutants and GHG's is worth the reduction in total organic HAPs.

E. EPA Should Reconsider the Methodology Used to Determine the Total Organic HAP Emission Limit and Emission Rate

LNA appreciates EPA's reconsideration of the proposed THC emission standard and replacement with the Total Organic HAP emission limit. However, EPA should reconsider the methodology used to determine the new emission limit.

In its review of the limited oHAP emission test reports from lime kilns, EPA sorted the reported method detection limit (MDL) for each pollutant from lowest to highest. EPA arbitrarily took the average of the lowest 5 MDL's for each pollutant to calculate the representative detection limit (RDL). EPA then arbitrarily multiplied each RDL by 3 and summed these values to determine the proposed total organic HAP emission limit of 1.7 ppmvd @ 7% O_2.

It should be noted that the MDL is based on the resolution of the instrument used, the sampling time of each test, and the calibration error of the instrument. As emission testing with FTIR spectroscopy becomes more routine, instruments with low detection limits may not be as widely available meaning it may not always be possible to achieve a low detection limit. The information provided in NLA's comments by Alliance Source Testing documents this concern on achieving the repeatability of a low MDL.

In addition, the proposed rule requires that if any individual oHAP emission rate is unmeasurable because the concentration is below the MDL, the value of the MDL must be used as the measured emission level in calculating the total organic HAP. This approach guarantees that even in cases where no oHAP's are detected, the reported value will be 1/3 of the emission limit. This increases the likelihood of exceeding the low emission limit proposed by EPA, requiring sources to potentially installed and operate control equipment unnecessarily for compounds that are not detected and may not be present.

EPA should subsequently increase the total organic HAP emission limit to be consistent with repeatable MDL's and allow each source to report a value of 0 if the pollutant concentration cannot be measured.

F. EPA Should Reconsider Rule Implementation Where the Benefit Cannot be Determined

In the February 9, 2024 Federal Register notice, EPA states:

> *The EPA did not monetize the benefits from the estimated emission reductions of HAP associated with this final action. The EPA currently does not have sufficient methods to monetize benefits associated with HAP, HAP reductions, and risk reductions for this rulemaking.*

This is pointed out again in Regulatory Impact Analysis where EPA states:

> *While we expect these emissions reductions to have beneficial effects on air quality and public health for populations exposed to emissions from lime manufacturing facilities, we have determined that quantification of those benefits cannot be accomplished for this proposed rule.*

To justify the proposed rule, EPA should be able to explain the added benefits. For example, with the added Dioxin and Furan (D/F) emission limit, EPA has estimated D/F emissions will be reduced by 43 milligrams per year across the entire lime industry. LNA questions if the benefit of the emission reductions reported is worth the added cost for emission controls, emission testing, parametric monitoring, reporting, etc., especially where EPA has previously found that risks are acceptable within an ample margin of safety.

EPA should justify the benefit of the proposed rule.

G. EPA Should Not Regulate Products of Combustion and Calcination from Lime Coolers with Separate Emission Point

In EPA's 2004 Lime MACT rule, EPA regulated the particulate matter emission rate from lime kilns and coolers with separate emission points. In most lime kilns, the exhaust from the cooler is directed to the same emission point as the lime kiln. However, there are a few examples where a separate emission point is used for the exhaust from the cooler. When regulating PM, it makes sense to include emissions from the cooler exhaust – there is the potential for additional PM to become entrained in the flue gas and be emitted.

When considering emissions of HCl, Hg, Total Organic HAPs, and Dioxins and Furans, these emissions are formed as products of combustion or during the calcination process. These processes do not occur in the lime cooler as the intent of the lime cooler is to remove heat from the product. In a lime cooler with a separate emission point, ambient air is used to cool the lime product to the desired temperature prior to transferring the lime to the material handling system. Without combustion or calcination occurring, there is no reason to believe that the pollutants included in the proposed regulation will be present in the lime cooler.

In addition, the methodology used to convert a pollutant to a standard O_2 concentration is meant to be utilized in combustion sources. Applying this same methodology to a source that utilizes ambient O_2 results in nonsensical emission rates. For example, consider a situation from a lime cooler, where no oHAP's were measured. Per the proposed rule, the source must report the total oHAP emission rate using the method detection limit. The following equation demonstrates how a non-detect measurement for oHAP in a lime cooler becomes a significant emission rate when converting this to a measurement at 7% O_2.

$$E_{oHAP @ 7\% O2} = C_{oHAP} \; x \; \left(\frac{20.9-7}{20.9-O_2}\right) \text{ where,}$$

$E_{oHAP @ 7\% O2}$ = Total oHAP concentration in ppmvd @ 7% O_2

C_{oHAP} = Total oHAP concentration at the measured oxygen concentration

O_2 = Measured oxygen concentration at the source

$$E = 0.56 \; x \; \left(\frac{20.9-7}{20.9-20.85}\right) = 0.56 \; x \; \left(\frac{13.9}{0.05}\right) = 0.56 \; x \; 278 = 155.7 \; ppmvd @ 7\% O2$$

A total oHAP measurement that started as a non-detectable emission rate at an O_2 concentration of 20.85% results in a reported total emission rate of 155.7 ppmvd @ 7% O_2. At this emission rate, an operator would be required to install an add-on pollution control device (likely an RTO) for an emission rate that is nonexistent.

For HCl, Hg, Total Organic HAP, and Dioxin and Furans, EPA should restrict the need to install emission control devices, establish parametric monitoring rates, conduct emission testing, etc. to emissions from the lime kiln. In Table 5 of EPA's proposed redlined text of 40 CFR Part 63, Subpart AAAAA, EPA identifies this correctly, only requiring these emission tests to be conducted from "each lime kiln". However, there are many instances throughout this same document where EPA indicates these measures must also be considered in lime coolers with separate emission points.

EPA should update the proposed rule accordingly.

H. EPA Should Revise the Emission Averaging Requirements for HCl and Hg

LNA appreciates EPA revising the proposed rule to allow for emission averaging of the HCl and Hg emission rates. However, the proposed process to use this methodology is very cumbersome and time intensive. Following a typical scenario for emission testing, a facility would have to complete the following tasks prior to utilizing this approach:

1. Sign a contract with a stack testing firm
2. Develop a scope of work and submit an emissions test protocol to the local authority and EPA at least 60 days prior to testing.
3. Conduct the emissions test
4. Review the test report and submit to local authority and EPA within 60 days of conducting the emission test.
5. Submit the implementation plan for emission averaging to the local authority and EPA at least 180 days before the compliance demonstration date.

To meet these time constraints, the regulated facility would have to contract with the stack testing firm approximately 1 year prior to the compliance demonstration date. EPA should adjust the deadline to submit the implementation plan deadline from 180 days before the compliance demonstration date to 60 days before the compliance demonstration date. This still allows the regulating authority plenty of time to review the implementation plan to ensure it contains the required information.

In addition, the regulated facility is required to include in the implementation plan the types of fuel(s) that will be utilized. It is unclear why the facility is required to include this information

on anticipated fuel use, how EPA intends to use this information, and what the implications are if the source changes fuels. LNA has experienced local authorities interpreting the current facility averaging methodologies for particulate matter in different ways. The existing policy is much less complex than the proposed methodology for HCl and Hg. To avoid confusion from LNA's regulated facilities and from local authorities, EPA should be more explicit in its intentions.

I. EPA's Should Correct Equation 4 to Calculate HCl and Hg lb/ton of lime produced Emission Rates

In EPA's proposed redlined text of 40 CFR Part 63, Subpart AAAAA, EPA has included Equation 4 in Section 63.7112(n) to calculate the HCl and Hg emission rates in lb per ton of lime produced for HCl and lb per million ton of lime produced for Hg. EPA has defined the following:

$$E = \frac{(C_k Q_k + C_c Q_c)}{KP} \quad \text{where,}$$

E = Emission rate of mercury, pounds per million tons (lb/MMton) of lime produced or HCl per ton (lb/ton) of lime produced

C_k = Concentration in the kiln effluent of mercury (μg/dscf) or HCl (ppmvd)

Q_k = Volumetric flow rate of kiln gas effluent (dscf/hr)

C_c = Concentration in the cooler effluent of mercury (μg/dscf) or HCl (ppmvd). This value is zero if there is not a separate cooler exhaust to the atmosphere.

C_k = Volumetric flow rate of cooler effluent gas (dscf/hr). This value is zero if there is not a separate cooler exhaust to the atmosphere.

P = Stone production rate (ton/hr) for HCl and (MMton/hr) for Hg.

K = Conversion factor, for mercury 2.2 x 10^{-9} μg/lb. For HCl 9.20 x 10^{-8} ppmvd HCl per lb/dscf HCl.

To calculate the correct emission rate, the follow revisions should be made:

$$E = \frac{K(C_k Q_k + C_c Q_c)}{P} \quad \text{where,}$$

K = Conversion factor, for mercury 2.2 x 10^{-9} lb/μg. For HCl 9.20 x 10^{-8} lb/dscf HCl per ppmvd HCl.

Please note in this case the units of the conversion factor, K, have been reversed and K should be utilized in the numerator, not the denominator.

EPA should update equation 4 accordingly.

J. EPA Should Clarify the Appropriate Units of Measure for HCl and Hg Emission Limits

Throughout the February 9, 2024 Federal Register notice and EPA's proposed redlined text of 40 CFR Part 63, Subpart AAAAA, EPA has proposed HCl and Hg emission limits in both lb/ton of lime produced and lb/ton stone produced. EPA later tries to correct this in the definitions stating:

> *Stone produced refers to the production of limestone from the lime kiln consisting of high-calcium quicklime, dolomitic quicklime and/or dead burned dolomitic lime.*

Using EPA's proposed definition, stone produced seems to actually be referring to lime produced. EPA should note there is a significant difference in the amount of limestone fed to a kiln vs. the amount of quicklime produced by the kiln. All of the existing work to date on the proposed rule has been assuming that the HCl and Hg limits would be based on the amount of lime produced. Updating the units to be based on the amount of stone fed will require all of the proposed emission limits to be reevaluated.

To confuse the item further, the existing particulate matter emission rate is in units of lb/ton of limestone fed. Where EPA intends to implement an emission rate in lb/ton of stone, the stone feed rate should be used. Where EPA intends to implement an emission rate in lb/ton of lime produced, the lime production rate should be used. Intertwining this this nomenclature will only lead to added confusion.

K. EPA Should Provide a More Detailed Description when Referring to a Performance Test

Throughout EPA's proposed redlined text of 40 CFR Part 63, Subpart AAAAA, EPA has proposed to only include a reference to "performance tests" when describing parametric monitoring requirements associated with operating limits. For example, in Table 3, EPA has proposed to remove the reference to "PM" when describing the parametric monitoring required to be tracked during a particulate matter performance test on a kiln with a wet scrubber. These requirements include monitoring the scrubbing liquid flow rate and scrubber pressure drop. Later in Table 3, EPA is proposing to include language that requires a source to measure and record the dry sorbent flow rate during a "performance test".

EPA should provide more clarity when making references to establishing parametric monitoring requirements during "performance tests". For example, it would not make sense to update the scrubbing liquid flow rate and scrubber pressure drop based on the measurement made during a Total oHAP "performance test". And it would not make sense to update the activated carbon injection rate based on the results of a particulate matter "performance test".

EPA should provide more clarity related to this matter. Additional examples of this concern can be found in Tables 3, 4, 5, and 6 of the proposed rule.

L. EPA Should Correct Typographical Errors

EPA should correct the following typographical errors found in the proposed redlined text of 40 CFR Part 63, Subpart AAAAA.

Table 4, Item 1 refers to measuring mercury using "Method 29 or 30B **5D** in appendix A to part 60" and measuring Total Organic HAP "using Method 18 **5D** in appendix A to part 60". In both cases the use of 5D should be removed as this is not the appropriate reference.
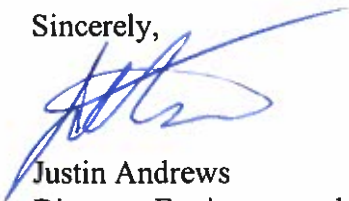
Table 5, Item 20 states:

> *The test duration must be at least two hours and for Method 29 and ASTM D6784-16 the sample volume must be at least 1.70 dscm (60 dscf). For Method 30B, the test duration must be at least one hour and the sample volume at least 100 liters.*

The text should be revised to state:

> For Method 29 and ASTM D6784-16, the test duration must be at least two hours and the sample volume must be at least 1.70 dscm (60 dscf). For Method 30B, the test duration must be at least one hour and the sample volume at least 100 liters

LNA recognizes the amount of work necessary to draft a proposed rule like the one referenced. LNA appreciates EPA's review and consideration of the comments provided. We strongly urge EPA to provide the maximum amount of flexibility possible in the rule's requirements, given the fact that even with no additional controls, there is already acceptable risk with an ample margin of safety for all HAPs at all lime plants. LNA looks forward to working with EPA to address these concerns. If EPA would like to engage directly with LNA regarding these comments, please contact me at justin.andrews@lhoist.com or (817) 732-8164.

Sincerely,

Justin Andrews
Director, Environmental Affairs