January 8, 2020

Kelley Crouch
Engineering Services Manager
Environmental Quality and Engineering
Domtar Ashdown Mill

Sent via Electronic Mail

RE: Regional Haze Four-Factor Analysis; Information Collection Request; AFIN 41-00002

Dear Ms. Crouch:

The Arkansas Department of Energy and Environment, Division of Environmental Quality (DEQ) hereby requests that Domtar submit the information described in Section II no later than 90 days from the date of this letter.

I. BACKGROUND

DEQ must develop a Regional Haze Program state implementation plan (SIP) that demonstrates reasonable progress toward achieving natural visibility conditions in Arkansas Class I areas during the period between 2018 and 2028, which is referred to as Planning Period II. The SIP must also address emissions from within the state that may impair visibility in Class I areas in other states. The Regional Haze Program uses an iterative planning process lead by the states with the ultimate goal of remedying existing and preventing future visibility impairment from anthropogenic sources of air pollution by 2064.

For the Planning Period II SIP, DEQ must develop a long-term strategy for reducing emissions of key pollutants and sources impacting visibility at Class I areas to make "reasonable" progress toward the goal of no anthropogenic visibility impairment by 2064. The Regional Haze Rule provides four factors by which a state must consider potential control measures for the long-term strategy. The factors are the cost of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of existing sources that contribute to visibility impairment.

The key pollutants from anthropogenic sources impairing visibility at Arkansas Class I areas are ammonium sulfate and ammonium nitrate.[1] Ammonium sulfate is formed by chemical reactions between ammonia and sulfur dioxide (SO_2) in the atmosphere. Ammonium nitrate is formed by chemical reactions between ammonia and nitrogen oxides (NOx) in the atmosphere. EPA modeling projects that these two pollutants will continue to be the key pollutants contributing to visibility impairment at Arkansas Class I areas in 2028.[2]

The states in the Central States Air Resources Agencies (CENSARA) organization, which includes Arkansas, contracted with Ramboll US Corporation (Ramboll) to produce a study examining the impact of stationary sources of NOx and SO_2 on each Class I area in the central region of the United States. For each Class I area, the study took into account light extinction-weighted wind trajectory residence times, 2016 sulfur dioxide and nitrogen oxides facility emissions, and distance from sources of nitrogen oxides and sulfur dioxide to Class I Areas. The study produced an area of influence (AOI) for each Class I area, which shows the geographic areas with a high probability of contributing to anthropogenic visibility impairment.

Based on the results of the AOI study, DEQ has identified Domtar Ashdown Mill as a source of visibility impacting pollutant emissions that DEQ should evaluate for potential emission reduction measures during Planning Period II.

II. INFORMATION REQUESTED FOR POTENTIAL EMISSION REDUCTION STRATEGIES

DEQ requests that Domtar provide information about potential emission reduction strategies for SO_2 and NOx emissions from the Domtar Ashdown Mill facility. At a minimum, Domtar should include the following potential strategies for the emission units that emit the majority of the SO_2 and NOx from Domtar Ashdown Mill, identified by DEQ as SN-01 (No. 3 Power Boiler), SN-05 (No. 2 Power Boiler), SN-06 (No. 2 Recovery Boiler), and SN-14 (No. 3 Recovery Boiler):

- SO_2 (ranked from highest control efficiency to lowest)[3]
    - For SN-05
        - Installation of new add-on scrubbers operating downstream of the existing scrubbers (typical control efficiency for industrial coal-fired boilers ≈ 90–95% control efficiency for industrial coal-fired boilers)
        - Increasing the SO_2 control efficiency of the existing scrubbers from current levels to 90% through the use of additional scrubbing reagent
        - Upgrades to the existing scrubbers
    - For SN-01

[1] http://vista.cira.colostate.edu/Improve/improve-data/
[2] https://www.epa.gov/visibility/visibility-guidance-documents
[3] EPA Menu of Control Measures
https://www.epa.gov/air-quality-implementation-plans/menu-control-measures-naaqs-implementation

        - Installation of a wet gas scrubber (typical control efficiency for industrial coal-fired boilers ≈ 90–99%)
        - Installation of a spray dry absorber (typical control efficiency for industrial coal-fired boilers ≈ 90–95);
- NOx (ranked from highest control efficiency to lowest) for all units[4]
    - Selective Catalytic Reduction (typical control efficiency ≈ 80% for industrial boilers coal and 90% for industrial boilers wood/bark/waste)
    - Regenerative Selective Catalytic Reduction (typical control efficiency ≈ 75% for industrial boilers wood/bark/waste)
    - Selective Non-Catalytic Reduction (typical control efficiency ≈ 40% for industrial boilers coal)

The list above is not comprehensive. Domtar may provide information about strategies in addition to those listed above. In addition, Domtar may include updates to information provided in previous assessments during Planning Period 1.

For each emission reduction strategy, Domtar should assess whether the strategy is technically feasible.[5] If a strategy is not technically feasible, Domtar should provide a robust explanation about why the strategy is not technically feasible.

For each technically feasible emission reduction strategy, Domtar should provide the following information for SO_2 and/or NOx:

- Control effectiveness (Percentage NOx and/or SO_2 reduced) estimates specific to Domtar Ashdown Mill's emission units in terms of actual emissions
- Emission reductions that would be achieved by implementation of the strategy:
    - Baseline actual emission rate in lb/hr or lb/MMBTU (maximum monthly value in the period between 2017–2019)
    - Control rate in lb/hr or lb/MMBTU (units should match baseline actual emission rate)
    - Resulting annual emission reductions (tons/year)
- Time necessary to implement the strategy with an explanation justifying the time needed

[4] EPA Menu of Control Measures
https://www.epa.gov/air-quality-implementation-plans/menu-control-measures-naaqs-implementation

[5] From 40 CFR Appendix Y to Part 51 "Control technologies are technically feasible if either (1) they have been installed and operated successfully for the type of source under review under similar conditions, or (2) the technology could be applied to the source under review. Two key concepts are important in determining whether a technology could be applied: 'availability' and 'applicability.' As explained in more detail below, a technology is considered 'available' if the source owner may obtain it through commercial channels, or it is otherwise available within the common sense meaning of the term. An available technology is 'applicable' if it can reasonably be installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible."

- A reasonable time period is one in which the source comes "into compliance in an efficient manner without unusual amounts of overtime, above-market wages and prices, or premium charges for expedited delivery of control equipment."[6]
- The time during which the source begins taking steps to come into compliance is assumed to begin upon EPA approval of the SIP, which is projected to be no later than January 31, 2023 based on deadlines for the SIP submission and EPA action on the SIP.[7]

- Remaining useful life
  - Remaining useful life of an emission unit should be based on an enforceable shutdown date. Otherwise, the remaining useful life should be the full period of the useful life for the control technology evaluated
  - The EPA Pollution Control Cost Manual[8] provides guidance on typical values for the useful life of various emission control systems
- Energy and non-air quality environmental impacts
  - Specify any energy and non-air environmental impacts, such as the generation of wastes for disposal, impacts on other environmental media, etc.
  - Factor any costs associated with energy and non-air environmental impacts into the cost of implementing the strategy, including without limitation:
    - Permitting costs if other regulatory requirements are triggered by the strategy
    - Costs associated with compliance with any other regulatory requirements triggered by the strategy
    - Cost of waste disposal for wastes generated by proposed control systems
- Cost of implementing the strategy
  - Use the EPA Pollution Control Cost Control Cost Manual[9] overnight methodology to quantify the following cost metrics:
    - Capital costs
    - Annual operating and maintenance costs
    - Annualized costs
  - The amortization period should be based on the time between when the strategy could reasonably be in place and the remaining useful life of the emission unit or emission control system, whichever is less.[10]

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[6] https://www.epa.gov/visibility/guidance-regional-haze-state-implementation-plans-second-implementation-period

[7] The deadline for submission of this state implementation plan is July 31, 2021. EPA's deadlines for timely action on a SIP submittal are as follows: six months for determining whether a SIP is complete and one year from determining that a SIP is complete to take final action on the SIP.

[8] https://www.epa.gov/sites/production/files/2017-12/documents/epaccmcostestimationmethodchapter_7thedition_2017.pdf

[9] https://www.epa.gov/sites/production/files/2017-12/documents/epaccmcostestimationmethodchapter_7thedition_2017.pdf

[10] Amortization start date is equal to the time necessary for compliance for the strategy added to January 31, 2023 (Deadline for timely EPA action on a SIP submitted on July 31, 2021).

III. CONCLUSION

Thank you for your timely response to this information request. This information is necessary for DEQ to prepare a technically and legally robust state implementation plan consistent with the Regional Haze Rule. Please respond with the requested information by April 7, 2020. If you have any questions, please contact Tricia Treece (treecep@adeq.state.ar.us) of my staff.

Sincerely,

William K. Montgomery
Interim Associate Director
Office of Air Quality
Division of Environmental Quality
Arkansas Department of Energy and Environment