MANE - VU

Mid-Atlantic/Northeast Visibility Union

MANE-VU Regional Haze Consultation Report

July 27, 2018

MANE-VU Technical Support Committee

Contents

Background

The Regional Haze Rule and the Clean Air Act (CAA) require consultation between the states, tribal nations and Federal Land Managers (FLMs) responsible for managing Class I areas. Class I area states must consult with contributing states to coordinate emission management strategies to achieve reasonable progress during each planning period[1]. Since regional haze often results from pollution emitted across broad regions, this multi-state approach to air quality planning was designed to aid in developing cost-effective controls for regional haze. The Mid-Atlantic & Northeast Visibility Union (MANE-VU) was established to facilitate regional haze planning in the region extending from the District of Columbia through Maine. For the current state implementation plan (SIP) planning cycle, MANE-VU assisted and facilitated the consultation process among its members and with contributing upwind states.

Consultation between the states is part of the process to determine reasonable progress goals. Both upwind and downwind Class I area receptor states must participate in consultation if the state is reasonably anticipated to contribute to visibility impairment in a federally designated Class I area. The consultation process is needed to ensure that reasonable emission reductions are pursued for sources/sectors that impact visibility in the seven Class I areas in the MANE-VU region. This consultation process may also consider visibility impairment contribution of emission sources within MANE-VU states to Class I areas located outside of the region (namely, Dolly Sods, Otter Creek, James River Face, and Shenandoah).

MANE-VU facilitated the consultation process in two phases:

1. Intra-RPO Consultation among MANE-VU members (states and tribal nations);
2. Inter-RPO Consultation between MANE-VU members and non-MANE-VU states identified as contributing to visibility impairment.[2]

EPA and the FLMs were invited to participate in both consultation phases.

Both phases of consultation primarily took place through webinars, however in-person meetings were included during the Intra-RPO consultation when regular OTC/MANE-VU meetings were conveniently scheduled. For a specific timeline of consultation webinars and meetings, please see the Consultation Schedule section of this document. A formal "Ask" to guide the inter-RPO consultation phase was developed during the intra-RPO consultation phase and adopted during the August 25, 2017 consultation. The consultation timeline was based on MANE-VU targeting a regional haze SIP submittal date of July 2018.

Consultation began in February 2017 and continued through March 2018. Inter-RPO consultation took place after Intra-RPO consultation was complete and consisted of webinar meetings. Inter-RPO consultation was conducted with states identified through the contribution assessment process[2] as contributing significantly to visibility impairment at MANE-VU Class I areas. Contributing states were invited to consult with MANE-VU beginning in October 2017. All MANE-VU states were invited for

[1] Requirement found in 40 C.F.R. §51.308(d)(3)(i) and 40 C.F.R. §51.308(d)(1)(iv)
[2] See the MANE-VU Technical Support Committee document titled, "Selection of States for MANE-VU Regional Haze Consultation (2018)."

consultation regardless of contribution levels. States outside of MANE-VU identified for consultation include:

Alabama	Missouri
Florida	North Carolina
Illinois	Ohio
Indiana	Tennessee
Kentucky	Texas
Louisiana	Virginia
Michigan	West Virginia

Contributing states were identified through the use of several screening tools including, but not limited to, CALPUFF modeling, Q/d analysis, and back-trajectory analysis. The objective of this technical work was to identify states and sources from which MANE-VU will pursue further analysis. This screening was intended to identify which states to invite to consultation, not a definitive list of which states are contributing. The MANE-VU Technical Support Committee refined and recommended selection criteria based on the technical work developed as part of the contribution assessment in order to finalize the inter-RPO consultation state list.

MANE-VU "Ask" for the Second Planning Period of Regional Haze SIPs

MANE-VU Class I area monitoring as of 2016 indicates that all MANE-VU Class I areas are ahead of the uniform rate of progress for visibility improvements by 2028. However, the regional haze rule requires developing a reasonable progress goal based on additional emissions reduction measures that are deemed reasonable for the next planning period, regardless of the uniform rate of progress. Furthermore, many of the visibility improvements observed to date are attributed to unenforceable changes in emissions, for example market conditions favoring natural gas over coal, and the potential remains for sources to revert back to fuels such as coal or oil with greater emissions of visibility-impairing pollutants. The 2017 MANE-VU Ask presents measures that MANE-VU considers reasonable for the 2018-2028 planning period.

Additional technical analyses for the reasonableness of controls included in the 2017MANE-VU Ask were performed. The MANE-VU Technical Support Committee (TSC) facilitated four-factor analysis of select sectors. Four-factor analysis is intended to identify control measures that are necessary to make reasonable progress toward natural visibility conditions at Class I areas based on, 1) cost of compliance, 2) time necessary for compliance, 3) energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected major or minor stationary source or group of sources.

A briefing document describing sources MANE-VU considers significant and asking to demonstrate reasonable control was provided to the states prior to the final intra- and inter-RPO consultation webinars to review the technical and policy progress to date.

Consultation with Federal Land Managers

The regional haze rule requires consultation to occur with FLMs early enough to allow the state time for full consideration of FLM input, recommended as 120 days, but no fewer than 60 days prior to a public

hearing or comment period, and to include discussion of the FLM assessment of the visibility impairment and the recommendations on development of reasonable progress goals (RPGs).[3]

While each state is expected to conduct independent consultation with the FLMs later in the planning process, MANE-VU conducted webinars specifically for additional FLM consultation early in the SIP planning process concurrent with state-to-state consultation to address their input, beginning in February 2017, well before public hearings or other public comment opportunities. A briefing document was provided to the FLMs prior to the last webinar reviewing the technical and policy progress to date. This recommendation is in addition to consultation that includes the FLMs during intra-PRO consultation. The FLMs were invited to attend the intra- and inter-RPO consultations among states and were documented to have attended seven intra-RPO meetings and all inter-RPO meetings.

In addition, a consultation webinar with the FLMs was held prior to the in-person consultation at the May 2017 OTC/MANE-VU Air Directors meeting on April 21, 2017.

MANE-VU expects that all states and tribes included in the MANE-VU consultation process will provide a technical analysis in response to the MANE-VU Ask in their SIPs. Formal minutes of these meetings is provided in the section titled: Consultation session minutes and summaries, below.

Consultation with EPA

Consultation with EPA began early in the first Intra-RPO meeting with the MANE-VU Technical Support Committee on February 28, 2017, where Regions 1, 2, and 3 were represented. EPA continued to be invited to comment on MANE-VU analyses and compliance with the Regional Haze Rule throughout intra- and inter-RPO consultation phases. States will also have the opportunity to consider EPA input during the formal public comment period for their regional haze SIPs.

Development and consultation summary of the MANE-VU Ask

MANE-VU developed a conceptual model that illustrates that sulfates from sulfur dioxide (SO_2) emissions remain the primary driver behind visibility impairment in the region, while nitrates from oxides of nitrogen (NO_x) emissions play a more significant role than they had in the first planning period. MANE-VU chose to assess the contribution to visibility impairment by focusing on sulfates and including nitrates when feasible in a technically sound fashion.

Secondly, MANE-VU examined annual emission inventories to find emission sectors that should be considered for further analysis. Electric Generating Units (EGUs) emitting SO_2 and NO_X and industrial point sources emitting SO_2 were found to be sectors with high emissions that warranted further scrutiny. Mobile sources were not considered in this analysis because any ask concerning mobile sources would be made to EPA and not during the intra-RPO and inter-RPO consultation process among the states and tribes. MANE-VU member states agreed to a course of action that includes pursuing the adoption and implementation of the following emission management strategies. Each element of the "Ask" described below is followed by a brief discussion of situations and outcomes that led to consensus among MANE-VU states.

[3] 40 C.F.R. § 51.308(i)

Explanation of asks

1. "Electric Generating Units (EGUs) with a nameplate capacity larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - ensure the most effective use of control technologies on a year-round basis to consistently minimize emissions of haze precursors, or obtain equivalent alternative emission reductions."

The aim of the first Ask is to reduce year-round emissions by simply expanding the use of already-installed controls for which requirements are lacking that would otherwise ensure their year-round operation. This would help to mitigate visibility impairment due to winter-time NO_X emissions that have been shown to account for a greater proportion of visibility impairment on the 20% most impaired days. This Ask is a reasonable control strategy due to the use of existing equipment. During the consultation process, MANE-VU states worked collaboratively to define the EGU capacity threshold and honed the language that characterizes the desired operation of controls year-round. MANE-VU states ultimately came to consensus with the addition of an option to find alternative, equivalent emissions reductions.

2. "Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area, as identified by MANE-VU contribution analyses (see attached listing) - perform a four-factor analysis for reasonable installation or upgrade to emission controls."

This Ask targets stationary sources that have the greatest contribution to visibility impairment at MANE-VU Class I areas, as modeled by MANE-VU. While this Ask does not suggest specific controls, it is considered reasonable to have the greatest contributors to visibility impairment conduct a four-factor analysis that would determine whether emission control measures should be pursued and what would be reasonable for each source. The MANE-VU states set a visibility-impairment threshold of 3 Mm^{-1} at any MANE-VU Class I area.

By requesting a four-factor analysis of these sources, a planned shutdown, or other factors, may be taken into account when determining what installation or upgrade of controls would be reasonable.

3. "Each MANE-VU State that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANE-VU in 2007 - pursue this standard as expeditiously as possible and before 2028, depending on supply availability, where the standards are as follows: a. distillate oil to 0.0015% sulfur by weight (15 ppm), b. #4 residual oil within a range of 0.25 to 0.5% sulfur by weight, c. #6 residual oil within a range of 0.3 to 0.5% sulfur by weight."

This Ask is an extension of the original MANE-VU Ask on ultra-low sulfur fuel oil, specifically the second phase of more stringent sulfur content standards that have been implemented in many MANE-VU states. It was considered reasonable to request that all contributing states that have not already implemented these standards to pursue them as expeditiously as practicable. In the second, current iteration of the MANE-VU Ask, contributing states upwind of MANE-VU are also being requested to pursue this standard.

4. "EGUs and other large point emission sources larger than 250 MMBTU per hour heat input that have switched operations to lower emitting fuels – pursue updating permits, enforceable agreements, and/or rules to lock-in lower emission rates for SO_2, NO_X and PM. The permit, enforcement agreement, and/or rule can allow for suspension of the lower emission rate during natural gas curtailment."

This ask was developed in an attempt to maintain the significant improvements in visibility during the first phase of the regional haze program achieved by natural gas taking the place of much of the fuel use previously coming from coal, but that has the potential to be lost should market conditions swing back

to favor coal. The Federal Land Management agencies recommended that MANE-VU pursue control strategies to enforce these visibility gains.

The threshold of 250 MMBTU per hour heat input was based on prior BART analysis.

Concerns were raised about locking EGUs during periods of natural gas curtailment and an exception for this situation was added.

5. "Where emission rules have not been adopted, control NO_X emissions for peaking combustion turbines that have the potential to operate on high electric demand days by: a. Striving to meet NO_X emissions standard of no greater than 25 ppm at 15% O_2 for natural gas and 42 ppm at 15% O_2 for fuel oil but at a minimum meet NO_X emissions standard of no greater than 42 ppm at 15% O_2 for natural gas and 96 ppm at 15% O_2 for fuel oil, or b. Performing a four-factor analysis for reasonable installation or upgrade to emission controls, or c. Obtaining equivalent alternative emission reductions on high electric demand days.

High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emission rates than the rest of the generation fleet. Peaking combustion turbine is defined for the purposes of this "Ask" as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or part of which is delivered to the electric power distribution grid for commercial sale and that operated less than or equal to an average of 1752 hours (or 20%) per year during 2014 to 2016;"

This ask is only directed to the MANE-VU states and is not included in the Ask directed to upwind, potentially contributing states. This ask targets relatively small electric generating units that operate during a small proportion of the year on high electric demand days, but that tend to have higher emission rates per unit of energy produced. Targeting these units is considered reasonable due to MANE-VU analyses that show correlation between high electric demand days and the 20% most impaired days.

6. "Each State should consider and report in their SIP measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, and solar."

The purpose of this ask is to reduce emissions from energy generation by lowering overall usage through energy efficiency and promoting cleaner technologies. During the consultation process, the broadness and specificity of the language used was adjusted.

Consultation schedule

Date	Participant group	Description and consultation type (Intra- or Inter-RPO)
February 7, 2017	Air Directors Call	Introduction to Process & Planning
February 28, 2017	TSC Call	MANE-VU Intra-RPO Consultation #1
March 7, 2017	Air Directors Call	Update
March 28, 2017	TSC Call	MANE-VU Intra-RPO Consultation #2
April 11, 2017	TSC Meeting	MANE-VU Intra-RPO Consultation #3
April 21, 2017	FLM Call	MANE-VU Intra-RPO Consultation #4
April 25, 2017	TSC Call	MANE-VU Intra-RPO Consultation #5
May 9-11, 2017	Air Directors Meeting	MANE-VU Intra-RPO Consultation #6
May 30, 2017	TSC Call	MANE-VU Intra-RPO Consultation #6b
June 5, 2017	Annual Meeting Caucus	MANE-VU Intra-RPO Consultation #7
June 16, 2017	Air Directors Call	MANE-VU Intra-RPO Consultation #8
June 29, 2017	Commissioners Call	Briefing
July 24, 2017	Commissioners Call	MANE-VU Intra-RPO Consultation #9
August 4, 2017	Air Directors Call	MANE-VU Intra-RPO Consultation #10
August 9, 2017	Air Directors Call	MANE-VU Intra-RPO Consultation #11
August 25, 2017		MANE-VU Ask Signed
August 29, 2017	TSC Call	Update on signed Ask, not a consultation session.
September 7, 2017	TSC Meeting	Update
October 20, 2017	Technical staff and/or air directors	Inter-RPO Consultation #1, Introduction and Overview of MANE-VU analyses and Ask
December 1, 2017	Technical staff and/or air directors	Inter-Regional Consultation #2, Discussion of the Ask and listening to upwind states and FLM questions
December 18, 2017	Technical staff and/or air directors	Inter-Regional Consultation #3, overview of technical analyses behind the Ask
January 12, 2018	Technical staff and/or air directors	Inter-Regional Consultation #4, Reasonable Progress Overview
March 23, 2018	Commissioners	Consultation Wrap-up, Inter-RPO Consultation #5

Consultation session minutes and summaries

Please note that after Consultation #11 on August 9, 2017, an ask was removed from the Draft 2018 MANE-VU Ask resulting in subsequent asks being renumbered (see notes under Consultation #11).

MANE-VU Intra-RPO Consultation #1

Technical Support Committee Call
February 28, 2017

MANE-VU Intra-RPO Consultation #1 was held during the monthly MANE-VU Technical Support Committee call on February 28, 2017. The primary purpose of this consultation was to discuss the consultation schedule and the draft MANE-VU "Ask". Contribution assessment, back trajectories, CALPUFF, and synthesis analysis updates were also provided. The agencies that participated in MANE-VU Intra-RPO Consultation #1 are shown in the table below, and the bullet points that follow highlight the items that were discussed.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN[4]	OTC	EPA	FLM
X		X	X	X	X	X	X	X	X	X	X		X	1,2,3	X

- New Hampshire drafted a consultation schedule and reviewed it.
- The three upcoming meetings became part of the official consultation following the March TSC call.
- Consultation with outside RPOs intended to begin following the June Annual Meeting.
- The map was to be revised based on the analysis in "Selection of States for MANE-VU Regional Haze Consultation (2018)"
- The draft "Ask" looked at optimized NO_x and SO_2 annually, a four-factor analysis for top 10 EGUs or ICIs, expansion of the low sulfur distillate limit to 15 ppm, and achievement of a 90% reduction at the remaining sources from the 167 stacks.
- Maryland asked about improving $PM_{2.5}$ standards as part of the "Ask."
- Reports on ICI boilers and CHP that were completed might be useful as part of the "Ask."
- The Regional Haze Regulations state that the four-factor analysis is required by each state's own sources.
- The question was raised as to whether the top 10 sources are for each state or each Class I area.
- The four-factor workgroup will convene to review the old projects.
- The Ask needs to be clarified to make sure the wording is correct for the 15 ppm ask.

Preliminary 2018 MANE-VU "Ask." contents may include:

- EGUs with already installed NO_X and/or SO_2 controls, optimize their full operation
- Sources (top 10 - EGUs and ICIs) perform a four-factor analysis for reasonable installation or upgrade to BART-like emission controls
- Expand low sulfur distillate fuel oil program (all contributing states - MANE-VU and others) – down to 15 ppm (either phase-in by 2028 or meet a date)
- Achieve a 90% SO_2 reduction from 2002 levels at all remaining uncontrolled sources from the 2008 MANE-VU 167 stack Ask.

[4] TrN = Tribal Nations

Overview: There was some discussion of the technical contribution modeling, the Regional Haze Rule requirements for consultation, and preliminary points for developing the MANE-VU Ask.

MANE-VU Intra-RPO Consultation #2

Technical Support Committee Call
March 28, 2017

MANE-VU Intra-RPO Consultation #2 was held during the monthly MANE-VU Technical Support Committee call on March 28, 2017. The purpose of this consultation was to continue discussion of the consultation schedule and the items included in the MANE-VU "Ask". A specific call for FLM consultation was created at the request of the FLMs.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X		X		X	1,2	X

- More time was requested at the Committee Meeting for the consultation
- The FLMs requested adding in a specific call with FLM consultation to the schedule.
- The schedule was also expanded to reflect the Inter-RPO consultation process.
- Concerning the "Ask":
    - Item #1
        - Pennsylvania was concerned about the definition of optimization.
    - Item #2
        - Pennsylvania was also concerned about clarifying that 2011 emissions would be used for ICI boilers since more recent data was available for EGUs.
        - Maine suggested using Mm^{-1} instead for the cutoff rather than top 10 since some Class I areas are impacted less than others and Vermont will compile a new list.
        - New Jersey recommend removing BART-like from the statement and change the wording so that it is industrial sources rather than specifically ICI boilers.
        - It was also suggested that removing the parenthetical from Item #2 might be a solution to the variety of issues presented.
    - Item #3
        - We need to work on the wording on Item #3 for states to satisfy the low-sulfur fuel request so that it better matches the previous Ask.
        - Pennsylvania has already achieved lower levels and would need a rulemaking and doesn't think it is prudent to pursue that.
        - New York has had the rule since 2011 and doesn't think that is reasonable not to pursue rulemaking.
        - New Hampshire asked about equivalent alternative measures, but New Jersey didn't think that those were available.
    - Item #4
        - New Jersey would like to specifically list the four units and does not see the need for the alternative measures.
        - Connecticut requested addition of language on alternatives, but is fine with taking that out if the four units are listed.
    - Item #5

        - New York would like it removed unless there is specificity in the request as would others.
    - Item #6
        - New Jersey has a goal for CHP expansion in their long-term plan.
        - New Jersey stated ICI boilers can be removed from Item #6 since they are dealt with specifically in #2.
        - New Jersey has language that is roughly to "Initiate programs to reduce energy and increase CHP, fuel cells, etc."
        - New York would like the language to be broad, but likes the thought.
        - Massachusetts is concerned if the language is too broad and would fall into the same problem as Item #5.

Preliminary 2018 MANE-VU "Ask" contents may include:

- EGUs with already installed NO_X and/or SO_2 controls, optimize their full operation
- Sources (top 10 - EGUs and ICIs) perform a four-factor analysis for reasonable installation or upgrade to BART-like emission controls
- Expand low sulfur distillate fuel oil program (all contributing states - MANE-VU and others) – down to 15 ppm (either phase-in by 2028 or meet a date)
- Achieve a 90% SO_2 reduction from 2002 levels at all remaining uncontrolled sources from the 2008 MANE-VU 167 stack Ask.

MANE-VU Intra-RPO Consultation #3

Technical Support Committee Meeting

April 11, 2017

MANE-VU Intra-RPO Consultation #3 was held on April 11, 2017. During this consultation, the specifics of proposed Ask items was discussed, as well as thresholds to identify contributing states. It was determined that in consideration of reasonable progress goals, the inclusion of an item in the Ask does not commit an upwind state which can choose to disagree with the Ask.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X				X	1	X

- It was determined that a discussion needed to be completed concerning which states should be consulted: 2%, 3% or 4% contributors in addition to the MANE-VU states
- The Class I states recommended the following in the "Ask":
    - Optimizing Selective Catalytic Reduction (SCR) and scrubbers all year including during winter; there is chemistry switch during the winter so that nitrates have a high impact during the season:
        - Connecticut wanted to discuss the size threshold for units that will need to be addressed.
        - To be consistent with other EGU regulations the suggestion was to make 25 MW the cutoff.
        - EGUs with already installed NO_x and/or SO_2 controls, optimize their operation to best and most efficient rates on a year-round basis.

        - The question was raised as to whether any <25 MW have controls? New EGUs have MACT/BAER type of controls; emissions will go down as older units get retired and bigger units restricted to lower emissions levels.
    - Updating permits to reflect achievable rates for SO_2, NO_X, and $PM_{2.5}$:
        - New York is concerned that they cannot put anything in the permit that's not in a rule especially for natural gas switches.
        - New Hampshire stated that the switch to natural gas was the basis for much of the visibility improvement since 2002 and locking in these changes is an FLM recommendation.
        - MARAMA points out that many large EGUs are reserving the right to burn coal even if they now burn gas, and permit changes would prevent that.
        - Pennsylvania wanted to know what regulation would require Pennsylvania to lock in natural gas, but that is something that states would determine on their own.
        - New Hampshire said that the request may be only for those units that have not retained ability to burn coal.
    - Conduct four-factor analysis for most important sources for reasonable installation or upgrade to emission controls; using top 10 sources or extinction cut-off approach (e.g. it extinguishes 2 or 3 Mm^{-1}):
        - The recommendation is against using a cutoff as high as 10 because only 1-2 units would be included.
        - We do need a good reason for picking a number.
        - For an extinction cut-off of 3.0 Mm^{-1} facilities range from top 7 to top 26 depending impacting visibility on Class I area.
        - Extinction >2 - 3 Mm^{-1} visibility impacts at any MANE-VU Class I area identified by contribution analyses using the most recent emissions.
        - 3 Mm^{-1} is a good number to begin our discussions with though this is just a preliminary list to get a general idea on what we need to look at.
        - Pennsylvania would prefer a 5 Mm^{-1} cutoff.
        - New Hampshire noted that the "Ask" only refers to doing a four-factor analysis and does not ask for adding specific controls.
        - To determine the sources, CALPUFF modeling was used with a 2011 inventory for industrial/non EGUs, and 2015 inventory for EGUs.
    - Low sulfur distillate fuel rule at the 15 ppm standard to be adopted as expeditiously as possible in all of MANE-VU, and other RPOs by 2028:
        - First phase was adopted everywhere, but second phase was not adopted in Maryland and Pennsylvania.
        - The question was raised if we want this to be a universal Ask since some states might not rely on fuel oil to the same degree and residential oil use does not transport as far (for instance should Missouri, a 3% contributor, be required to adopt 15 ppm oil).
        - It was suggested that states with $PM_{2.5}$ nonattainment issues might be able take credit for $PM_{2.5}$ SIP if creditable reductions are needed.
    - Achieve a 90% reduction in 2002 SO_2 emission levels at the four remaining uncontrolled sources that were included in the "167 stacks" identified during the first RH SIP process as impairing visibility in a MANE-VU Class I area.
    - Perform a four-factor analysis for peaking EGU units that operate on high electric demand days (HEDD) to address and control NO_x and SO_2 emissions:

        - Definition of peaking units is not applicable to all states.
        - NJ has language on HEDD in their rule even that could be helpful.
        - There is a question as to how many peaking units are there? New York expects there are approximate 150 in New York with 200 MW generation.
        - Another question concerned the correlation between HEDD and impaired visibility days.
        - A final question concerned what are "peaking units" (e.g., those operating on that day or 3-4 days before an event)?
    - Ask States to initiate measures to increase energy efficiency and implement CHP or other DG/renewable technologies such as fuel cells, wind, biomass, and solar.
    - Should there be an Ask of EPA (e.g., NO_x reductions from mobile sources (e.g., federal heavy-duty engine standards)?
- MARAMA pointed out that we will need to update inventories, rerun the photochemical model if you go beyond on the books measures, but New York believes that states should be able to take an approach that does not require rerunning the photochemical modeling.
- Concerning reasonable progress goals (RPGs), Class I states need to determine what to factor in even if states don't commit – should modeling include everything in Ask whether states agree to or not?
    - In the past EPA held states accountable for what is in their RH SIP.
    - States that were never consulted with had their SIPs approved without any problem.
    - New York stated that if you put something in the Ask, the upwind states need not commit; Authority does not lie with the Class I state. If during consultation process states do not agree on the Asks, you need to show how the differences were resolved; states may agree to the Ask or not, then asking states may not submit it in SIPs.

Preliminary 2018 MANE-VU "Ask" contents may include but is not limited to the following:

1. EGUs with already installed NO_X and/or SO_2 controls, optimize their operation to best and most efficient rates on a year-round basis;
2. Update permits to lock-in lower emission rates for SO_2, NO_X and PM at EGUs and other large emission sources that have switched operations to lower emitting fuels;
3. Top ten sources with the largest modeled visibility impacts at each MANE-VU Class I area as identified by MANE-VU contribution analyses perform a four-factor analysis for reasonable installation or upgrade to emission controls;
    a. Alternative: Sources with 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area as identified by MANE-VU contribution analyses, using the most recent emissions, perform a four-factor analysis for reasonable installation or upgrade to emission controls;
4. Each MANE-VU State that has not adopted a standard for distillate fuel oil sulfur content of 15 parts per million (ppm) should adopt this standard as expeditiously as possible and all other states that contribute to visibility impairment in a MANE-VU Class I state should adopt this 15 ppm standard by 2028;
5. A 90% reduction from the 2002 SO_2 emission levels should be achieved at the four remaining uncontrolled sources from the MANE-VU list of 167 stacks (Trenton Channel, Unit 9A and Saint Clair, Unit 7 in Michigan, Herbert Wagner, Unit 3 in Maryland and Yorktown, Unit 3 in Virginia) that were identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area;

6. Perform a four-factor analysis for peaking EGU units that operate on high electric demand days to address and control NO_X and SO_2 emissions; and
7. Each State should initiate measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, biomass, and solar.

MANE-VU Intra-RPO Consultation #4

TSC/FLM Call
April 21, 2017

MANE-VU Intra-RPO Consultation #4 was held on April 21, 2017. This was a FLM-specific call as requested by FLMs in Intra-RPO Call #2. This consultation responded to nine questions submitted by the FLMs related to EPA guidance, MANE-VU modeling, reasonable progress goals, long term strategies, and future consultation with FLMs. Modeling topics included the emphasis of 20% impaired days over 20% worst days to avoid confusion, the decision to use MANE-VU modeling with 2011 platform and only indirectly using EPA's 2028 modeling, and for the 2028 control case modeling, the decision to model controls as a package rather than individually to see overall effect. Future consultation with FLMs was also planned, both as a region and as individual states as required, after states had begun their four-factor analysis to demonstrate RPG.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X		X		X		X

1. Metric:
   - Joseph Jakuta (OTC/MANE-VU) will update the slides with the 20% most impaired days in future slide sets to avoid confusion as to what MANE-VU is relying on for a metric once a full data set is available for Lye Brook.
   - 20% most impaired days will be relied on for future work, but we will keep data around for 20% worst days just in case something happens with the rules.
   - We will look at the 20% best days as well, but focusing mostly on 20% most impaired days.

2. 2011 and 2028 base case modeling:
   - The plan for photochemical modeling involves using the 2011 platform because that is what we have available and has been quality assured.
   - There is a need to add the 2028 base case results to the modeling platform Technical Support Document (TSD) following completion of control case runs.
   - We are relying on MANE-VU modeling and we are not planning on using EPA's 2028 work directly.
   - Performance evaluation was completed for ozone, $PM_{2.5}$, and haze constituents and is in the modeling platform TSD.
   - The committee believed that the TSD received 21 day review but Joseph Jakuta (OTC/MANE-VU) will follow up and confirm and resend the documents.

3. 2028 control case modeling:

- Control scenario would come out of the "Ask."
- Still talking about what goes into the "Ask."
- FLMs recommend taking a look at the guidance for modeling.
- FLMS had the question of will you model controls individually? How many of control scenarios get run depends on modeling resources.
- One issue with modeling controls individually is that sometimes if you break it out each component becomes insignificant, which is why we prefer to do everything as a package.

4. RPGs:
   - There is a need to provide the four-factor analysis with details on a source or sector level to demonstrate the RPG.
   - All of the Class I states are still working on their approach, which will likely be addressed after the "Ask" is adopted.

5. Four-Factor Analysis:
   - Cost and control data for the analyses have been provided so that each state can individually develop their analyses.
   - More discussion will occur later in the year with the FLMs after states complete their analyses.

6. FLM Consultation:
   - There will have to be an FLM consultation with individual states since that is the requirement.
   - MANE-VU will have another regional consultation with FLMs prior to control runs and following the inter-RPO consultation.
   - We will schedule that call for August or early September at a later date and time.
   - Pat Brewer is the National Park Service (NPS) lead, Bret Anderson is the Forest Service (FS) lead, and Tim Allen is the Fish and Wildlife Service (FWS) lead.

7. Contribution Assessment:
   - Weight of evidence is supposed to point you in the right direction.
   - FLMs are concerned when the contribution assessment is described as "conclusions," that language might be too strong.
   - FLMs will provide assistance with the tools they have developed for assessing control strategies and Joseph Jakuta (OTC/MANE-VU) will work to set up a call.
     No substantive discussion of revisions to the draft Ask.

MANE-VU Intra-RPO Consultation #5

TSC Call

April 25, 2017

MANE-VU Intra-RPO Consultation #5 took place on April 25, 2017. States went over the seven proposed Ask items and made corrections in the Ask Draft; modifications were made for consistency, greater clarity, and both stronger or weaker language. There was also emphasis on locking in benefits from the previous planning period and discussion on who should sign the Ask because there was no current MANE-VU chair.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM

X	X	X	X	X	X	X	X	X	X		X		X	1	X

- Vermont reviewed the draft Ask.
- During the conversation New Jersey reiterated that the Ask is a set of "reasonable" requests and that though everyone is below the glide path at this point future planning periods could be harder to plan for and it is important to lock in benefits that were achieved during the first planning period if they were not driven by enforceable actions.
- The "Ask" last time was signed by the MANE-VU chair, but there is no current chair and will likely not be one at the meeting. The two options are for the Class I states to sign the document or for all the MANE-VU states to sign the document individually. The recollection is that last time everyone voted in favor of the "Ask," except Pennsylvania which abstained.
- Item #1
    - Connecticut requested that "or equal to" be added to maintain consistency with unit sizes in other programs.
    - Pennsylvania was concerned about the use of the word "best" in regard to control optimization.
    - FLMs asked if we should elaborate on "most efficient" and clarify that it meant "least polluting."
- Item #2
    - At this point a threshold for visibility has not yet been agreed upon although 3 Mm^{-1} is listed in the document.
    - Massachusetts requested a minor change to clarify the language in the first sentence.
    - Pennsylvania asked what happened to the language about the top 10 sources. Vermont thought that the top 10 language was turning out to be confusing and Maine was concerned that the 10^{th} source for a particular Class I area might be impacting the site far less than the 10^{th} source at a different Class I area.
    - Pennsylvania would like to see a list of sources at particular thresholds.
    - Though it needs to be confirmed, Maine believes that 3 Mm^{-1} will result in a similar number of sources needing four-factor analysis as a top 10 list of sources would.
- Item #3
    - The concentrations for sulfur in fuel oil should be the same as those requested in the second stage of the "Ask" in the first planning period.
    - A digit was missing from the distillate oil percentage, it should read 0.0015%.
    - Vermont will work with Joseph Jakuta (OTC/MANE-VU) to clean up the large amount of "to"s in the section since they get confusing to read.
    - OTC will distribute the low sulfur fuel oil adoption matrix to ensure we know which states have adopted the model rule.
- Item #4
    - The units should be listed in a bullet point form.
    - New Jersey would like the "infeasible…" language removed and there were no objections.
- Item #5
    - The question was raised as to whether a unit would need a new permit to operate using a higher emitting fuel source if they had reconfigured their unit to only use natural gas.
    - Another question was whether this should be done at the facility level.

- Massachusetts believes it would make sense to remove the language, "and no longer have the ability to operate with higher emitting fuels." Pennsylvania objects to that change.
- New Hampshire suggested adding the language to "consider" to this request may help soften some of the concerns.

- Item #6
  - New Jersey had updated language that was in the draft consultation plan document that had not gotten included, but was updated during the call which elaborated on the definitions needed for the request.
  - Connecticut was concerned about including units down to 5 MW and thought it should be 15 only, New Jersey believes that is what their on-the-books rule says.
  - Pennsylvania wanted to know how many units would fall into this Ask.
  - New Hampshire suggested adding the language to "consider" to this request may help soften some of the concerns.
- Item #7
  - New Hampshire suggested adding the language to "consider" to this request may help soften some of the concerns.

Draft 2018 MANE-VU "Ask" contents as of April 25, 2017:

1. Electric Generating Units (EGUs) larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - *optimize operation to best and most efficient rates on a year-round basis*;
2. Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area (as identified by MANE-VU contribution analyses using actual 2015 emissions for EGUs and 2011 for other emission sources) - *perform a four-factor analysis for reasonable installation or upgrade to emission controls*;
3. Each MANE-VU State that has not yet fully adopted a low sulfur fuel oil standard as requested by MANE-VU in 2007 - *pursue this standard as expeditiously as possible and all other states identified for consultation by MANE-VU should adopt this standard by 2028 depending on supply availability*;
   a. distillate oil to 0.0015% sulfur by weight (15 ppm);
   b. #4 residual oil;
      i. to 0.25% sulfur by weight (Delaware, New Jersey, New York, and Pennsylvania, or portions thereof)
      ii. to 0.25 to 0.5% sulfur by weight (Remainder of MANE-VU region)
      iii. to 0.5% sulfur by weight or equivalent reduction in sulfur emissions from fuel oil combustion (Beyond MANE-VU region)
   c. #6 residual oil;
      i. to 0.3 to 0.5% sulfur by weight (Delaware, New Jersey, New York, and Pennsylvania, or portions thereof)
      ii. to 0.5% sulfur by weight (Remainder of MANE-VU region)
      iii. to 0.5% sulfur by weight or equivalent reduction in sulfur emissions from fuel oil combustion (Beyond MANE-VU region)
4. Four remaining uncontrolled sources from the MANE-VU list of 167 stacks:
   - Trenton Channel, Unit 9A in Michigan,
   - Saint Clair, Unit 7 in Michigan,
   - Herbert Wagner, Unit 3 in Maryland, and

- Yorktown, Unit 3 in Virginia.

These sources were identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area – *reduce SO_2 emissions by 90% from the 2002 SO_2 emission levels. If it is infeasible to achieve that level of reduction from a unit, equivalent alternative measures should be pursued*;

5. EGUs and other large emission sources that have switched operations to lower emitting fuels and no longer have the ability to operate with higher emitting fuels – consider *update permits and/or rules to lock-in lower emission rates for SO_2, NO_X and PM*;
6. [Should consider performing | Perform] a four-factor analysis for peaking combustion turbines that operate on high electric demand days to address and control NO_X and SO_2 emissions, where:
    a. "High Electric Demand Day or "HEDD" is defined as the day following a day in which the next day forecast load is estimated to reach its peak value, as defined by the state's specific ISO or regional transmission organization; and,
    b. "Peaking combustion turbine" is defined as capable of generating [5 - 15] megawatts or more, that commenced operation prior to [May 1, 2007], is used to generate electricity, all or part of which is delivered to the electric power distribution grid for commercial sale, and that operated less than or equal to an average of [50] percent of the time during the ozone seasons of 2011 through 2013;
7. Each State should [consider initiating | initiate] measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, biomass, and solar.

MANE-VU Intra-RPO Consultation #6

Air Directors Meeting

May 9-10, 2017

MANE-VU Intra-RPO Consultation #6 was an Air Directors meeting that took place on May 9-10, 2017. The purpose of the call was to discuss proposed Ask items and reach consensus on the final Asks. Although it was agreed unanimity of agreement was not necessary, Class I states wanted all MANE-VU states to vote and sought consensus. Consensus was not met and additional meetings were scheduled.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X		X		X		

- <u>Ask #1 – Operation and optimization of controls year-round:</u>
    - MARAMA brought up the question of what was being optimized – emissions or cost? This was to be corrected through a language change to clarify it is emissions.
    - Maryland stated that they are the only state in MANE-VU that requires optimization of NO_X during the ozone season (24 hour averaging with limits of 0.07 lb/mmBTU for SCR operations) and that their sources are required to look at optimization every single day of operation and create a report that Maryland staff looks at every day; it is a huge, resource-intensive effort which works very well. There is no single limit for all units, but each unit optimizes based on its own historic data.

- New Hampshire stated that Maryland's approach if expanded to include SO_2 and cover the annual period will meet the "Ask."
- Maryland noted that scrubbers are run consistently – there is no variability as seen with SCR. Year-round NO_X control would be great but they don't have technical justification for the need for daily limits for non-ozone season.
- NESCAUM suggested that the language could say to run controls all year regardless of optimization.
- New Jersey pointed out that SCR will not work well at all temperatures because of temperature variation and it is not possible to run year-round and NESCAUM agreed.
- New Jersey also pointed out that the "Ask" should reflect that during startup, when the unit and SCR catalyst is cold, NH_3 injection will slip right through and go out of the stack. In New Jersey their rule doesn't require controls unless you are putting power on the grid and Pennsylvania has provisions that address operating temperatures.
- Optimization could be defined as maximizing emissions reductions.
- Maryland pointed out that their 126 petition included this language, which came from EPA, and was built from federal consent orders that requires controls to be run every day, which can be copied for use here.
- Pennsylvania stated that the "Ask" on operating controls all year is going to happen in Pennsylvania because of their new RACT regulations obligations.
- The "Ask" on this needs to be as soft as possible; keep the "operate controls (SCR) all year" but do not say maximum achievable goals; do not pin down the optimization to specific rates
- Pennsylvania will have RACT 3 for a 2015 ozone standard and the industry is changing rapidly as are the nature of baseload operations.
- New Jersey brought up the question of how one addresses the situation where power plants are using part of the SCR for mercury control and other part for NO_X control. In this case they are optimizing for something other than what the controls were originally installed for.
- Pennsylvania pointed out that units are not monolithic; for some units NH_3 reductant runs counter to mercury controls and that units have temporal and spatial variations. That's why they do not want to pin down on optimization.
- New Hampshire brought up the issue that has been seen over the last couple of summers where SCR is technically running but practically no NH_3 injection is occurring. Suboptimal operation of controls is not sufficient, the language has to be stronger than to just run controls.
- Pennsylvania would prefer not to include specific rates in the "Ask."
- Maine and New York suggested that the word "optimal" could be problematic.
- Maryland asked if optimal could mean to run the technologies to manufacturer's specifications.
- Language will be worked on this evening to clarify the optimization issue.

- <u>Ask #2 – Conduct a four-factor analysis for sources modeled to produce visibility impacts of 3 Mm^{-1}:</u>
  - Vermont asked how we choose the 3 Mm^{-1} cut off. New Hampshire stated that the "Ask" began by looking at the top 10 at each Class I area but this created a non-uniform threshold of some small sources with little impact at some sites while leaving off large ones with

substantial impact at other sites so the extinction threshold approximates the top 10 while capturing only those sources that would do most good for all if controlled.
    - OTC staff reminded that EPA's draft guidance expected states to look at 80% of sources and what is being asked is far less than that.
    - In Maryland the units in question are at Wagner and Luke and there are other major changes happening not related to Regional Haze like SO_2, Mercury and Air Toxics Standards (MATS), evolution of coal, etc., expected by 2028.
    - New Jersey pointed out that if we are identifying the really large SO_2 sources, then the 1 hr SO_2 MATS will capture a high percentage of these sources so it makes an easier "Ask."
    - Maryland was concerned the Class I states are asking big things and wanted to confirm that all the Class I state commissioners are on board.
    - New Jersey followed up by stating that there is nothing in this "Ask" that hasn't been discussed before, except of the "Ask" of EPA.
- <u>Ask #3 – Adopting the low sulfur fuel oil model rule:</u>
    - This language is the same "Ask" we saw ten years ago for low sulfur fuels and is included for states that have not fully adopted it to do so quickly.
    - Delaware brought up again why they are included in the "Ask."
    - NESCAUM brought up that the Regional Haze program has the goal of meeting natural visibility conditions sometime in the distant future and Delaware has an impact on visibility above natural levels even if they contribute less than 2%.
    - New York pointed out that many states or cities have met this Ask or something more stringent such as phasing out types of fuel oil completely.
- <u>Ask #4 – Remaining stacks from the original 167 stack Ask:</u>
    - These are the four stacks are stacks that were not controlled or retired from the previous 167 stack "Ask."
    - Maryland pointed out that the "unless infeasible" language is no longer in the "Ask," which could be problematic at Wagner 3 due to footprint issues.
    - New Jersey pointed out that a plant in their state had footprint issues and built platform and a baghouse and that their commissioner will not be satisfied with softening the "Ask."
    - MARAMA reminded that if Class I states ask and the upwind state don't agree, both states need to document how they have tried to resolve the disagreement and include it in the SIP.
- <u>Ask #5 – Permit updates:</u>
    - The point of this item is that if units have switched to natural gas why not lock-in emissions reductions, especially from EGUs and other large emissions sources that have switched.
    - Connecticut wanted to know how large are the sources they would need to update permits for.
    - Also, there is a concern from Connecticut that there are EGUs that typically burn gas, but have the ability as peaking plants to burn oil in gas-outage times and those cannot be locked in to run natural gas during curtailment.
    - New Jersey thought it was acceptable to add an exception for gas curtailment.
    - Pennsylvania noted that fuel augmentation could be used and states could use separate standards for different fuels and update permits to fuel-specific standards. Natural gas has lower impact on visibility and if a natural gas unit has RACT already in place, alternative

operating scenario will not be an option for Pennsylvania. Pennsylvania needs technical rationale for public comment for rulemaking, otherwise it is unacceptable.
    - New Jersey suggested adding a statement about whether a fuel contributes to Regional Haze, but New Hampshire did not like that approach.
    - New Jersey noted that many of the problems being discussed have been resolved in their permitting process including multi-fuel options, curtailment, emergencies, outages, fuel switching, etc.
    - Pennsylvania noted that MATS rule requires scrubber to operate so enough rules exist and to ask for more from companies to give up on specific fuels is not viable.
    - Pennsylvania would like the wording "as necessary and appropriate" added.
    - New York stated that a four-factor analysis needs to be done on all fuels.
    - New Jersey stated that if switching fuels has a Regional Haze impact, limits should be enforceable.
- Ask 6 HEDD Sources:
    - The Class I states had been considering a threshold of 15 MW or 25 MW and the 15 MW cutoff was considered to be acceptable.
    - Pennsylvania was concerned as to what the technical rationale was for the four-factor analysis to apply on a unit that is not operating constantly since they will need rationale to take a rulemaking to the public.
    - New York stated that there are data for units 25 MW or greater but most of their units are 15-25 MW and all the daily data stopped being collected in 2015.
        - Pennsylvania-New Jersey-Maryland Interconnection (PJM) data show correlation between bad air days and HEDD.
- Ask 7:
    - Biomass should not be included and will be removed.
- Federal Partner Ask:
    - There are many mobile source asks that can be made of EPA (e.g., ZEVs, federal heavy-duty engine standards, aftermarket catalysts, etc.), but EPA is not required to do any of these and if the list is too long they will likely ignore everything, which is why the ask is focused on heavy-duty engine standards solely.
    - New Jersey was concerned with some of the suggestions and brought up the VW mitigation funds, but that can solely be used for NO_x mitigation.

Process Discussion

- In the past, MANE-VU had three Asks – one for MANE-VU states, another for non-MANE-VU impact states and a third for federal partners.
- The question was raised as to whether we will have all MANE-VU states or only Class I states to vote on the "Ask."
- The Class I states would prefer all of MANE-VU to vote, which is why they are seeking consensus.
- Another question was raised as to whether we should take the "Ask" to public comment in OTC spring meeting.
- Pennsylvania will need to go to public comment before putting in committal SIP and since there is a lot in here that the commissioners had not been briefed on, they will need briefing packages. At a minimum several weeks are needed so there is not enough time to vote on these before June.

- This was countered that there is nothing new in the "Ask" that has not been discussed in previous consultation discussions but there are a lot of new commissioners that need to be brought up to speed.
- Agreement in MANE-VU that it is not necessarily a full RPO "Ask" and that unanimity to agreement is not a requirement.
- Pennsylvania will need the option for alternate measures to be included to support.
- New York stated that this is a conceptual document based on our analysis today. We still need to do CMAQ modeling, develop our SIPs, even if we agree with this we may end up in a different place. The "Ask" is not binding and while we may agree to the "Ask" we may not do exactly what was written and voted on.
- It was recommended that units with new controls should be exempted from repeating the four-factor analysis.
- Pennsylvania was concerned since they can only go through rulemaking with a technical rationale.
- On the other hand, the upwind states are concerned that if you don't lock reductions at a plant like Brunner Island then they can backslide by 2028.
- MANE-VU needs to begin the engagement internally and externally, otherwise we don't have much time.
- After consultation, states should develop their own analysis for their own SIP and the SIP doesn't have to match "Ask" but the state is bound to complete an analysis to say why it is or is not doing it.
- Consultation is a two-way process. After consultation, states should be able to change and take into consideration what they have heard.
- There is no obligation on MANE-VU as an entity to endorse or reject "Ask."
- If all of the Commissioners are going to sign the "Ask" and we cannot complete it at the June meeting we need to look up MANE-VU's operating principles to determine how a vote can occur, for instance can we have a vote by phone.
- Have an education at the meeting and Class I areas can continue their meeting beyond that; no need to involve stakeholders during the development of the "Ask."
- The Class I states pointed out that there is room for commissioners' responses even if they don't vote on the "Ask." We will put the "Ask" out as a draft to commissioners, although we don't know if we will get a consensus at the June meeting.
- June meeting will be another step in consultation process and we don't have to explain to private sector until states are in the process of putting together their individual SIPs.
- A question was raised about participation from tribal nations and they have been invited to every call and the Penobscot Nation had commented that we are doing a good job.

Draft 2018 MANE-VU "Ask" as of May 10, 2017:

1. Electric Generating Units (EGUs) larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - optimize operation of controls on a year-round basis;
2. Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area (as identified by MANE-VU contribution analyses using actual 2015 emissions for EGUs and 2011 for other emission sources) - perform a four-factor analysis for reasonable installation or upgrade to emission controls;
3. Each MANE-VU State that has not yet fully adopted a low sulfur fuel oil standard as requested by MANE-VU in 2007 - pursue this standard as expeditiously as possible and all other states

identified for consultation by MANE-VU should adopt this standard by 2028 depending on supply availability of;

a. distillate oil to 0.0015% sulfur by weight (15 ppm);
b. #4 residual oil to;
    i. 0.25% sulfur by weight (Delaware, New Jersey, New York, and Pennsylvania, or portions thereof)
    ii. 0.25 to 0.5% sulfur by weight (Remainder of MANE-VU region)
    iii. 0.5% sulfur by weight or equivalent reduction in sulfur emissions from fuel oil combustion (Beyond MANE-VU region)
c. #6 residual oil to;
    i. 0.3 to 0.5% sulfur by weight (Delaware, New Jersey, New York, and Pennsylvania, or portions thereof)
    ii. 0.5% sulfur by weight (Remainder of MANE-VU region)
    iii. 0.5% sulfur by weight or equivalent reduction in sulfur emissions from fuel oil combustion (Beyond MANE-VU region)

4. Four remaining uncontrolled sources from the MANE-VU list of 167 stacks were identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area:
    - Trenton Channel, Unit 9A in Michigan,
    - Saint Clair, Unit 7 in Michigan,
    - Herbert Wagner, Unit 3 in Maryland, and
    - Yorktown, Unit 3 in Virginia.

    Reduce SO_2 emissions at these sources by 90% from the 2002 SO_2 emission levels;
5. EGUs and other large emission sources that have switched operations to lower emitting fuels – pursue updating permits and/or rules to lock-in lower emission rates for SO_2, NO_X and PM;
6. Where rules have not been adopted, perform] a four-factor analysis for peaking combustion turbines that operate on high electric demand days to address and control NO_X and SO_2 emissions, where:
    a. "High Electric Demand Day or "HEDD" is defined as the day following a day in which the next day forecast load is estimated to reach its peak value, as defined by the state's specific ISO or regional transmission organization; and,
    b. "Peaking combustion turbine" is defined as capable of generating 15-25 megawatts or more, that commenced operation prior to [May 1, 2007], is used to generate electricity, all or part of which is delivered to the electric power distribution grid for commercial sale, and that operated less than or equal to an average of [50] percent of the time during the ozone seasons of 2011 through 2013;
7. Each State should consider measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, biomass, and solar.

MANE-VU Intra-RPO Consultation #6b

TSC Call

May 30, 2017

MANE-VU Intra-RPO Consultation #6b took place on May 30, 2017 and was an additional Technical Support Committee call intended to address issues unresolved from the Air Directors call (#6). There is

further discussion on whether unanimity to agreement is necessary and the timing of Commissioners signing; MANE-VU moves to begin engagement both internally and externally.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X	X	1,2	X

- This call was added to the schedule following the Air Directors Meeting to address issues unresolved from that meeting.
- A briefing document is available for edits and will be provided to the Air Directors on Thursday, comments are needed prior to Thursday, June 1, at noon.
- There are now three Asks, one for the FLMs/EPA, one for the MANE-VU states and one for the upwind contributing states.
- New drafts will be sent out immediately after the call and any final edits are needed by Thursday, June 1, at noon.
- FLM/EPA "Ask":
    - Ask involves heavy-duty onroad NO_X standards and ensuring the "Ask" is met from EPA and notifications of prescribed burns from the FLMs.
    - The order of the "Ask" was changed so that the EPA items were next to each other.
- Intra-RPO "Ask":
    - Pennsylvania's most recent changes were received but not yet incorporated.
    - The language in #3 was changed to read "within a range of" to increase clarity.
    - The threshold in #5 should be 250 MMBTU consistent with prior BART analysis.
    - The use of "excepting" versus "except" was discussed, but no changes were made.
    - The language in #6 "to address and control NO_X and SO_2 emissions" was moved for clarity.
    - Since the document will not be signed at the meeting, but at a later date, Paul Mercer will sign on behalf of Maine.
- Inter-RPO "Ask":
    - The changes discussed for the Intra-RPO "Ask" were carried over and no other changes were made.

Draft 2018 MANE-VU "Ask" contents as of May 30, 2017:

1. Electric Generating Units (EGUs) larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - *optimize the use of control technologies to minimize emissions of haze precursors on a year-round basis*;

2. Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area, as identified by MANE-VU contribution analyses (see attached listing) - perform a four-factor analysis for reasonable installation or upgrade to emission controls;

3. Each MANE-VU State that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANE-VU in 2007 - pursue this standard as expeditiously as possible and before 2028, depending on supply availability, where the standards are as follows:
    a. distillate oil to 0.0015% sulfur by weight (15 ppm);

b. within a range of 0.25 to 0.5% sulfur by weight
c. within a range of 0.3 to 0.5% sulfur by weight
0.5% sulfur by weight (

4. Four sources from the list of 167 stacks identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area continue to operate without control. One of these units is located within the MANE-VU region:
- Herbert Wagner, Unit 3 in Maryland.

While the original Ask allowed for alternative measures to achieve the reductions, this Ask is requiring the 90% reduction of SO_2 emissions at these specific units from the 2002 SO_2 emission levels;

5. EGUs and other large point emission sources larger than 250 MMBTU per hour heat input that have switched operations to lower emitting fuels – pursue *updating permits and/or rules to lock-in lower emission rates for SO_2, NO_X and PM, excepting during natural gas curtailment if demonstrated through a four-factor analysis to be reasonable*;

6. Where emission rules have not been adopted, *perform a four-factor analysis* to address and control NO_X and SO_2 emissions for peaking combustion turbines that have the potential to operate on high electric demand days. High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emission rates than the rest of the generation fleet. Peaking combustion turbine is defined for the purposes of this "Ask" as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or part of which is delivered to the electric power distribution grid for commercial sale and that operated less than or equal to an average of 1752 hours (or 20%) per year during 2014 to 2016;

7. Each State should consider and report in their SIP measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, and solar.

MANE-VU Intra-RPO Consultation #7

June Annual Meeting Caucus
June 5, 2017

MANE-VU Intra-RPO Consultation #7 took place during the June Annual Meeting Caucus on June 5, 2017. Discussion continued about whether the MANE-VU states needed or ought to reach consensus about all Ask items and how to go about reaching consensus. Ask Items continued to be refined for language and clarity.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X		X		

- The second item on the "Ask" came up through Air Director discussions and States were in consensus with this and all comments were considered and there is a table at the end of the "Ask" which lists the facilities that were modeled to contribute at 3 Mm^{-1} or more to a Class I Area.
- The last time, the MANE-VU "Ask" was endorsed by all states; because of the language, etc. it likely is different this time. The documentation of differences is a possibility under the Regional Haze Rule.
- The "Ask" will be in Regional Haze SIPs which they will be measured against. They need to get a response from contributing states on the "Asks" since they will put them in SIPs only after they have a response from states about the reasonableness of the "Ask" of each state and document their agreement/disagreement.
- New Jersey stated that we have had a lot of consultation within MANE-VU trying to reach consensus on some of the items which were deal breakers but which New Jersey thought were reasonable, but a lack of consensus doesn't preclude it from being asked, disagreement just needs to be documented.
- Maryland preferred to reach consensus since MANE-VU is the first one among RPOs which is much ahead in the process and progress compared to others.
- New Jersey: to come to consensus we need to identify the points that keep us from getting consensus and there seem to be two sticking points.
- The question was brought up regarding if we need to go public with "Asks" at this point since they have been discussed in commissioner and at AD level? It is a formal Ask of Class I states and they need to document our responses
- Pennsylvania is concerned about the HEDD Ask since without knowing the impact of HEDD units they cannot go through rulemaking and go public. They believe a cost-benefit analysis of these HEDD units and a formal document the response and concerns and that simple inclusion in the "Ask" is not good enough. Pennsylvania asked if there was at a minimum an inventory of HEDD units available before they would do a four-factor analysis.
- New Hampshire stated that the modeling was rigorous and we went through a lot of discussions to get to the "Ask."
- New Jersey stated that the "Ask" is reasonable and they are already undertaking these items. Language was changed to help identify the HEDD units in each state. Units in 15-25 MW identified by SAS committee are harder to get information on and there are not data on these from federal databases.
- Pennsylvania asked if it is really necessary to control all these HEDD units when the Class I areas are already on the glide path and though they may be good to control to reduce ozone we don't know if they affect regional haze.
- New York stated that for the states outside MANE-VU the impact is expected to be minimal which is why it is not included in the upwind states "Ask" and that identifying what a state will do and will not do will be based on their four-factor analysis. The obligation is on states to do four-factor analysis based on "Ask."
- New York had a process question. In the agenda at the public session is some action being sought from entire MANE-VU? If so we need to take a vote and hopefully arrive at consensus.
- Since the "Ask" of EPA has different language from other "Asks" and sounds like an Ask from entirety of MANE-VU, MANE-VU could approve the EPA "Ask" as a group and leave the other "Asks" to the Class I states.

- The group decided to delay any action on the three "Asks" until another call was held after the meeting.

Draft 2018 MANE-VU "Ask" contents June 5, 2017:

Therefore, the course of action for pursuing the adoption and implementation of measures necessary to meet the 2028 reasonable progress goal for regional haze include the following "emission management" strategies:

1. Electric Generating Units (EGUs) larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - *optimize the use of control technologies to minimize emissions of haze precursors on a year-round basis*;

2. Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area, as identified by MANE-VU contribution analyses (see attached listing) - perform a four-factor analysis for reasonable installation or upgrade to emission controls;

3. Each MANE-VU State that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANE-VU in 2007 - pursue this standard as expeditiously as possible and before 2028, depending on supply availability, where the standards are as follows:
    a. distillate oil to 0.0015% sulfur by weight (15 ppm);
    b. #4 residual oil within a range of 0.25 to 0.5% sulfur by weight
    c. #6 residual oil within a range of 0.3 to 0.5% sulfur by weight

4. Four sources from the list of 167 stacks identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area continue to operate without control. One of these units is located within the MANE-VU region:
    - Herbert Wagner, Unit 3 in Maryland.

    While the original Ask allowed for alternative measures to achieve the reductions, this Ask is requiring the 90% reduction of SO_2 emissions at these specific units from the 2002 SO_2 emission levels;

5. EGUs and other large point emission sources larger than 250 MMBTU per hour heat input that have switched operations to lower emitting fuels – pursue *updating permits and/or rules to lock-in lower emission rates for SO_2, NO_X and PM, excepting during natural gas curtailment if demonstrated through a four-factor analysis to be reasonable*;

6. Where emission rules have not been adopted, perform a four-factor analysis to address and control NO_X and SO_2 emissions for peaking combustion turbines that have the potential to operate on high electric demand days. High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emission rates than the rest of the generation fleet. Peaking combustion turbine is defined for the purposes of this "Ask" as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May

1, 2007, is used to generate electricity all or part of which is delivered to the electric power distribution grid for commercial sale and that operated less than or equal to an average of 1752 hours (or 20%) per year during 2014 to 2016;

7. Each State should consider and report in their SIP measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, and solar.

MANE-VU Intra-RPO Consultation #8

Air Directors Call
June 16, 2017

MANE-VU Intra-RPO Consultation #8 was the second Air Directors call and took place on June 16, 2017, and was held due to lack of consensus during the June Annual Meeting. Discussion continued on the matter of consensus, addressed by adding flexibility (alternative emissions reductions) to the Ask, as well as the necessity of taking public comment on the Asks. Suggestions were made including approving the EPA Ask and leaving the other two Asks to the Class I states to approve. Another call was scheduled to continue discussion.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X		X		X		

- This call, and all subsequent calls were added to the schedule following the lack of consensus at the June Spring Meeting.
- Class I states wanted to come closer to consensus.
- The main feedback that the Class I states received was to allow the use of alternative emission reductions in some parts of the "Ask" and the Class I states tried to provide that flexibility.
- Since the Spring Meeting, the Class I states added alternative measures to year-round control optimization (Item #1) and High Electricity Demand Day (HEDD) unit four-factor analysis (Item #6) (the latter only on HEDDs).
- The Class I states' logic concerning items addressed in the 2008 "Ask" is that if there are Asks that came out 10 years ago and nearly every state implemented them, it seems reasonable to require them at this point since it was proven to be a reasonable measure.
- Luke Paper was cited as an example of a high impact unit, but Maryland stated it is likely not a problem due to SO_2 nonattainment requirements.
- Maryland stated that the last "Ask" provided the alternative measures and they implemented an alternative measure for Herbert Wagner 3 so this is a different Ask. New Jersey stated that the Herbert Wagner 3 stacks are still impacting the Class I area and should be addressed. Maryland brought up the glide path and Brigantine being lower than it. New Jersey stated that the question is about whether the controls are reasonable regardless of the where you are in relation to the glidepath.
- Maryland stated that by agreeing to the "Ask," they would be pushing the unit to shutdown rather than continue operating since the footprint cannot fit a scrubber and the plant doesn't

have the capability to switch to gas, and that the commissioners need to talk about this. Maryland is concerned the other Class I state commissioners beyond New Jersey have not been briefed on Maryland's concerns.

- An idea from New Jersey suggested that maybe the "Ask" should be written so that a state could do either 2 or 4 if a unit falls under both categories. Maryland is fine with that. Maine is fine with that. Vermont and New Hampshire are discussing and this could be agreeable.
- Connecticut had concerns with #5 because they don't require fuel switches to get a permit update so language was added to include consent decrees that could be applicable. The other issue is that the language in the end of #5 concerning the curtailment and a four-factor analysis and changes were made to reflect the concern. The Class I states are still looking at the new language and are likely on board.
- Pennsylvania is also still concerned with #5 since a unit would be locking in one fuel even though multiple fuels are allowed now. New Jersey is concerned about fuel switches at units that don't have SCR or scrubber returning to an "unreasonable" emission rate. Brunner Island, which is a unit of concern, will also get addressed under item #2. Pennsylvania is concerned that they need to show the visibility impacts to justify requiring natural gas only.
- Maryland needs to have some sort of stakeholder process in order to accept the "Ask." New Jersey's stakeholders have already largely addressed the requirements of the "Ask." New Hampshire said the last time there wasn't really a public process as part of the "Ask," but the public process needs to happen during the SIP development process. The public process is not a problem with Maryland if only the Class I states sign it. New York is concerned that taking this to public process will further delay this by a year, and we would have to do it again when we would go out for the SIP, making two drawn out public processes rather than just one. Connecticut thinks it is important that this is the Class I states "Ask." New Hampshire wants to make sure they can go to upwind states with support from MANE-VU. Maryland and Connecticut brought up the question of why this wasn't on the table for the RGGI program review.
- We need a deliberative process mapped out for the inter-RPO consultation as we did for the intra-RPO consultation.

Draft 2018 MANE-VU "Ask" contents as of June 16, 2017:

Therefore, the course of action for pursuing the adoption and implementation of measures necessary to meet the 2028 reasonable progress goal for regional haze include the following "emission management" strategies:

1. Electric Generating Units (EGUs) with a nameplate capacity larger than or equal to 25 MW with already installed NO_X and/or SO_2 controls - *optimize the use of control technologies to minimize emissions of haze precursors on a year-round basis or obtain equivalent alternative emission reductions*;

2. Emission sources modeled by MANE-VU that have the potential for 3.0 Mm^{-1} or greater visibility impacts at any MANE-VU Class I area, as identified by MANE-VU contribution analyses (see attached listing) - perform a four-factor analysis for reasonable installation or upgrade to emission controls;

3. Each MANE-VU State that has not yet fully adopted an ultra-low sulfur fuel oil standard as requested by MANE-VU in 2007 - pursue this standard as expeditiously as possible and before 2028, depending on supply availability, where the standards are as follows:
    a. distillate oil to 0.0015% sulfur by weight (15 ppm);
    b. #4 residual oil within a range of 0.25 to 0.5% sulfur by weight
    c. #6 residual oil within a range of 0.3 to 0.5% sulfur by weight

4. Four sources from the list of 167 stacks identified by MANE-VU during the first Regional Haze SIP process as adversely affecting visibility in a MANE-VU Class I area continue to operate without control. For sources on this list that are also included under item #2 meeting the Ask put forward in item #2 would be sufficient as well. One of these units is located within the MANE-VU region:

    - Herbert Wagner, Unit 3 in Maryland.

    While the original Ask allowed for alternative measures to achieve the reductions, this Ask is requiring the 90% reduction of SO_2 emissions at these specific units from the 2002 SO_2 emission levels;

5. EGUs and other large point emission sources larger than 250 MMBTU per hour heat input that have switched operations to lower emitting fuels – pursue *updating permits, enforceable agreements, and/or rules to lock-in lower emission rates for SO_2, NO_X and PM. The permit, enforcement agreement, and/or rule can allow for suspension of the lower emission rate during natural gas curtailment*;

6. Where emission rules have not been adopted, perform a four-factor analysis to address and control NO_X and SO_2 emissions for peaking combustion turbines that have the potential to operate on high electric demand days or obtain equivalent alternative emission reductions on high electric demand days. High electric demand days are days when higher than usual electrical demands bring additional generation units online, many of which are infrequently operated and may have significantly higher emission rates than the rest of the generation fleet. Peaking combustion turbine is defined for the purposes of this "Ask" as a turbine capable of generating 15 megawatts or more, that commenced operation prior to May 1, 2007, is used to generate electricity all or part of which is delivered to the electric power distribution grid for commercial sale and that operated less than or equal to an average of 1752 hours (or 20%) per year during 2014 to 2016;

7. Each State should consider and report in their SIP measures or programs to: a) decrease energy demand through the use of energy efficiency, and b) increase the use within their state of Combined Heat and Power (CHP) and other clean Distributed Generation technologies including fuel cells, wind, and solar.

MANE-VU Intra-RPO Consultation #9 took place on July 24, 2017. The emphasis of this call remained on seeking consensus among the MANE-VU states. There was also discussion on the timing of stakeholder input, concluding stakeholder input was important to include further in the process. It was suggested more time was needed for air directors to reach consensus, so the timeframe for reaching consensus was set for August 11, 2017.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X		X		

1. Overview of Call
   - Concerns had been raised from some parties both to the contents of the "Ask" and the process.
   - The Class I states wanted to stop and get a final draft to everyone and find a way to address any final concerns.

2. Report on Selection of States
   - Joseph Jakuta (OTC/MANE-VU) reviewed the slides.
   - Maryland asked how we sat since the data appeared to show everyone was on track to be under the glide path, but it was reminded that that the goals should be set based on what reductions are reasonable not whether an area is above or below the uniform rate of progress.
   - Maryland asked if the reasoning behind EPA delaying the deadline to 2021 was to accommodate other programs such as RGGI and SO_2 standards.

3. HEDD Analysis
   - Maryland asked why the consensus based approach from MANE-VU disappeared.
   - Maryland also asked if there was a willingness to extend the deadline to get to consensus.
   - Vermont and New Hampshire were concerned about dragging it out too long, but would like to reach a consensus.
   - New Hampshire responded to Maryland's question and noted that there was not a lack of desire for consensus, but as the consultation went on, information was not being distributed and the Air Directors were not ready to reach consensus as a result. There was opportunity at the annual meeting for consensus, but this again was not fruitful.
   - Delaware was much closer to accepting the current draft.
   - September is more of a crucial date for MANE-VU states that will submit SIPs in July 2018 rather than for upwind states.
   - Maryland asked about the stakeholder engagement in this process.
   - OTC stated that the stakeholder process was important to have between individual states and their units.
   - New Hampshire looked at the principals adopted by the MANE-VU Board and it focused on the process to be a government to government process.
   - New Hampshire pointed out that the goal was to follow the existing framework.
   - It could be important to point out to stakeholders that such outreach will occur later in the process.
   - Connecticut had no concerns with the current draft, nor did the District of Columbia, Massachusetts, and New York. All supported the need for consensus.
   - Pennsylvania is concerned with Item #6 and would like to see an impact threshold incorporated.

- Discussion occurred as to the time frame for reaching consensus and it was settled on August 11.
- Maryland proposed having OTC staff put together a plan to accomplish this goal.

MANE-VU Intra-RPO Consultation #10

Air Directors Call

August 4, 2017

MANE-VU Intra RPO Consultation #10 was an Air Directors call that took place on August 4, 2017. Ask Items discussed were Item 4 and Item 6. For Item 4, there was discussion about the integration of RGGI with the Asks, and language to indicate RGGI only applies to RGGI States. There was also discussion of retaining demonstrable equivalency of reductions by having Item 4 (four-factor analysis instead of 90% reduction) removed and covered by Item 2. For Item 6, a rewording was suggested for the inclusion of a threshold for four-factor analysis on combustion turbines.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X		X		

- Item #4:
    - Maryland stated that RGGI is important to the RGGI states. It's absolutely critical to Maryland to integrate RGGI and other Federal programs into the "Ask" and that it is a deal breaker to not include it. Maryland doesn't see the harm in listing it. New Hampshire will talk to the commissioner about the issue and Connecticut is willing to talk to their assistant commissioner as well. As another example, Maryland will be putting in an SO_2 SIP in place for the Wagner area and this has to be harmonized with the "Ask."
    - Maryland wanted to know who feels the need to shine the spotlight on Wagner and that RGGI is one of Maryland's most important haze precursor programs. Why take it away? Maryland would be open to drafting some language to the effect that RGGI only applies to RGGI States since some MANE-VU States are not RGGI States.
    - The question was raised as to how a state would demonstrate equivalency of the equivalent reductions? A solution may be to take out Item #4 altogether and let Wagner be covered by Item #2 (i.e. do a 4-factor analysis instead of the 90% reduction). Maine and Vermont would be fine with this approach. The Inter-RPO Ask would have to be consistent with this approach.
- Item #6:
    - Pennsylvania was concerned that there has to be a threshold for combustion turbines to do a four-factor analysis and would like it to be 42 and 96 ppm for gas-fired and oil-fired, respectively. New York already meets those thresholds. New Jersey's RACT limit is currently 25 ppmvd and 42 ppmvd for gas-fired and oil-fired units, respectively. For the Ask, this will need to be a RACT performance level, not RACT applicability.
    - Pennsylvania asked if the "Ask" could be narrowed to a specific geographic region since units further away will have a negligible impact and that modeling could be used to see which impacts units have. The concern is that this process would take too long.
    - A suggestion for rewording Item 6a was:

- "For regional haze precursor reduction purposes, meeting NO_X emissions standard of no greater than 42 ppm at 15% O_2 for natural gas and 96 ppm at 15% O_2 for fuel oil (note: additional limits may be warranted for ground-level ozone reduction purposes), or"

MANE-VU Intra-RPO Consultation #11

Air Directors Call
August 9, 2017

MANE-VU Intra-RPO Consultation #11 was an Air Directors call that took place on August 9, 2017. There was an overview of the timeline, future steps, and States' comfort with the Ask contents. Ask Item 4 was removed and consolidated under Item 2 as previously discussed, and all items were renumbered and reorganized. Minor changes were suggested. The final Ask was signed on August 25, 2017.

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X		X		

- Jeff Underhill (New Hampshire) stated that the goal of the call was intended to:
  - Give an overview of the timeline;
  - Give an overview of the compromise MANE-VU "Ask," Upwind "Ask," and EPA/FLMs "Ask";
  - Hear if states are comfortable with the "Ask";
  - Review next steps, including approval of the "Ask."
- Given the delays in finalizing the "Ask," the goal will be to begin the consultation with the upwind states in early October.
- The language in Ask 1 was changed from "optimization" to "the most effective use of control technologies" to avoid implications of the legal definition of "optimization."
- Ask 4 involving the listing of particular units that had been included in the 167 stack portion of the 2008 MANE-VU Ask was removed.
- Ask 6 (now Ask 5) had SO_2 struck from it given that it is handled under another item.
- The language in Ask 2, Ask 3, Ask 5 (now Ask 4), and Ask 7 (now Ask 6) remain unchanged.
- Instead of being signed by the MANE-VU Class I states, the Ask will now be signed by MANE-VU's Executive Director, Dave Foerter (OTC/MANE-VU).
- The upwind state Ask will say that implementation is to occur by 2028. States from MANE-VU contribution work are listed. Ask 1 was modified and Ask 4 removed similar to the MANE-VU Ask.
- A vote was taken and all states agreed that they were comfortable with the language in the "Ask."
- Agreement was reached that there was no need for another Commissioner level call to resolve any remaining differences in the current version, though a briefing document would be helpful. A concurrence with the current version should be sent via email to Dave Foerter.
- An invitation letter to the upwind states should be drafted as well, with the intention of sending it out in early September.
- Although a vote was taken, Maryland suggested one final set of minor edits to the "Ask" and these changes were also accepted.

- The final "Ask" was signed on August 25, 2017.

MANE-VU Inter-RPO Consultation #1

Technical Staff/Air Directors Call

October 20, 2017

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X	X	X	X	X	X	X	X	X		X	X	FWS, FS, NPS

AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV
X	X		X		X	X	X	X	X	X	X	X	X

LADCO	SESARM	CENSARA	WESTAR
X	X	X	X

Introductory Statements

- Jeff Underhill, New Hampshire, welcomed everyone on behalf of Assistant Commissioner Clark Freise, MANE-VU Chair.
- This call was intended as an opportunity for open discussion on completed Regional Haze SIP work from MANE-VU, with this call mainly being a listening session.
- There will be follow-up calls to present information and have a more detailed discussion.
- MANE-VU recognized development of our documents in preparation for the 2nd round Regional Haze SIPs are early to meet our 2018 submittal goal, which means the Inter-RPO Consultation process must be conducted now.
- MANE-VU hoped that this process will give mid-western and southern states an opportunity to prepare better for SIP submittals in 2021.
- The expectation also stated that we would close out the process with a webinar that includes Commissioners from each state in the consultation.
- Several documents are available for review on the MANE-VU website including the Contribution Assessment document and all of the supporting technical analysis and the three MANE-VU Asks (Intra-RPO, Inter-RPO, and Federal), the latter of which were sent out to the upwind Air Directors and Commissioners.
- Another expectation for these calls is to provide information to be used in our SIPs for submittal in 2018.

Presentation

- Heidi Hales – Air Director at VT DEC, Frank Steitz – Air Director at NJ DEP, Joseph Jakuta – OTC Staff, Tom Downs – Chief Meteorologist at ME DEP, Jeff Underhill – Chief Scientist at NH DES,

and Rob Sliwinski – Assistant Air Director at NYSDEC and MANE-VU TSC Chair gave the presentation.

Discussion

- SESARM noted that in slides and narrative it looks like the glide-slopes in the northeast are similar to the south. Also, he noted that, though not officially confirmed by EPA, EPA will allow the use of 2011 as a base year for 2021 SIPs. Finally, it was noted that several of targeted EGUs are no longer operating.
- New Hampshire pointed out that part of the consultation is to share information and that we are aware that some units have shut down since 2015 and in those cases are seeking additional documentation that the shutdown is enforceable.
- Alabama asked if a state is contributing greater than 2% but does not have a unit with an impact great that 3 Mm^{-1} has to do anything with the Ask.
- New Hampshire noted that a state can have impact greater than 2% without a large source since we looked at total state emissions as well, and such a state would have to address the other portions of the Ask.
- Texas asked if statewide emissions for SO_2 and NO_x, including mobile sources, were analyzed for both 2011 and 2015 and it was pointed out that they were in the Q/d analysis only.

Closing Remarks

- MANE-VU reiterated the importance of the upwind states to continue to work with us and was glad to see that all of the states in MANE-VU were represented as were nearly all of the states identified as contributing.
- The next call will be scheduled after the MANE-VU Commissioners Meeting (November 15, 2017) and will be open floor. If anyone wants topic discussed, please work with your regional group to let MANE-VU know.

MANE-VU Inter-RPO Consultation #2

Technical Staff/Air Directors Call

December 1, 2017

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X		X	X	X	X	X	X	X			X		X	1	FWS, FS, NPS

AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV	GA	AR
X	X	X	X			X	X	X	X	X	X		X	X	

LADCO	SESARM	CENSARA	WESTAR	MARAMA
X	X	X	X	X

Introductory Statements

- Dave Foerter (OTC/MANE-VU) thanked everyone for attending on short notice so this next consultation could occur before the end of year. The next call will be scheduled for either January 5th or 12th at 3 PM and states should let RPO leads or Dave Foerter know if dates work or not.
- The goal of this call was to set the groundwork for the Ask inside the MANE-VU area and to look at these Asks for those contributory states outside of MANE-VU. This call, and the subsequent one to be scheduled in January, are intended to elicit feedback on the Asks presented.

SESARM Feedback

- SESARM thanked MANE-VU for this effort. He noted that SESARM has not had any calls to discuss any questions. There are some of his member states that are interested in making some adjustments (e.g. KY EGUs) to our data sets.
- North Carolina stated that it was unclear about process and was concerned that Ask 2 cited a North Carolina facility that was contributing based on data from 2011. He wanted to know if North Carolina should provide updated info for that facility and whether MANE-VU would incorporate updated information.
- MANE-VU pointed out that there are no plans to remodel it specifically but we will look at updated information. MANE-VU is particularly interested in updated permit info or something else that is enforceable. MANE-VU wants to have the best information possible and realizes that things have changed since 2011, though needs to ensure any changes modeled are enforceable.
- All information on particular facilities must be in by the end of the year.
- North Carolina stated that his modelers are having a difficult time understanding MANE-VU's modeling. It would be helpful to have some clarity on analytical approach to states that contribute to Class I areas.
- MANE-VU pointed out that the analysis was predominantly based on Q/d with meteorological analysis, and the point source analysis also relied on CALPUFF modeling.
- 2011 and 2015 CAMD data were used in CALPUFF modeling for EGUs and 2011 NEI data only were used for industrial sources. Other sectors were only evaluated using Q/d, which was based on 2011, but adjusted to reflect 2015 data.
- SESARM noted that some of the information about what is enforceable is still developing and there is still some fluidity in the final mix of emissions by 2028 but in some cases permits haven not been updated making the action permanent.
- MANE-VU noted that ERTAC EGU projections get a lot of feedback from states which do not have same threshold as permits denoting enforceability but is acceptable for SIPs though MANE-VU does think it is necessary to have permit requirements for units impacting visibility by 3 Mm^{-1} so MANE-VU can have some level of certainty.
- Tennessee noted that recent US EPA modeling shows monitoring below glidepath in 2028 and current monitoring below glidepath. Additionally, Tennessee does not have any facilities listed in Ask 2 and Tennessee Valley Authority (TVA) owns all of their EGUs, the latter being important since TVA also had a court settlement based on PSD review that required shutdown, controls and fuel switching, which is still ongoing and will result in 55% reduction in NO_X and SO_2. Also,

several units have closed. Tennessee would like to look at data to ensure data is updated and representative.

- New Jersey commended Tennessee for these reductions and noted that inventory is always a moving target and at some point we will need to stop adjusting to move on.

LADCO Feedback

- LADCO noted that their states are just beginning the regional haze planning process and LADCO has no specific comments on the MANE-VU Ask.
- Ohio was still looking through data and stated that they would provide more detailed information.
- A few EGUs on the list in Michigan are in the process of negotiating SIP reductions including Trenton Channel for SO_2 SIP and there may be some emission reductions to provide.
- Indiana was interested to see the data modeled and will wait until then before commenting.
- Illinois had no specific comments at the time.

CENSARA Feedback

- CENSARA stated that it has reached out to its member states and that more information would be helpful since they are still assessing.
- Texas was interested in whether a separate technical call can occur to walk through the analyses and ask more detailed questions. They also noted that two of the three largest EGUs in Texas will shut down in the beginning of 2018 which should lower SO_2 emissions by 100,000 tons and there are some other efforts that will result in significant reductions in SO_2 that they would like to bring to the table. A consent decree involving black carbon will bring down emissions from industrial sources.
- MANE-VU said we appreciated the suggestion of technical consultation and could perhaps schedule another webinar to provide the technical analysis details.
- SESARM stated that a call/webinar would be more conducive than ad-hoc discussions that could occur at the upcoming regional haze meeting in Denver.
- The RPO leads will poll their states and get back to MANE-VU within a week concerning the desire to schedule a technically focused call.

There were no additional comments from EPA or the FLMS.

Action Items

1) MANE-VU will distribute/provide link to the more detailed analysis information.
2) RPOs leads will poll their states (by a week from today) about a webinar.
3) Upwind states will provide updated technical information to MANE-VU by the end of the year.

MANE-VU Inter-RPO Consultation #3

Air Directors/Commissioner Call

December 18, 2017

CT	DC	DE	MA	MD	ME	NH	NJ		NY	PA	RI	VT	TrN	OTC	EPA	FLM*
X			X	X	X	X	X	X	X			X		X	1	FWS, FS, NPS

AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV	GA	AR	SC
X	X	X	X			X	X	X	X	X	X	X	X	X	X	X

LADCO	SESARM	CENSARA	WESTAR	MARAMA
X	X		X	X

Agenda

1. Welcome and Roll Call: OTC
2. Technical briefings (aim for 10 minutes or less – except CALPUFF which may be 15)
    a. Q/d
    b. CALPUFF
    c. Trajectory
    d. Consolidation
    e. 4-Factor Overview – (Delayed to next call)
3. Review of available technical products – (OTC)
4. Next Consultation – (OTC)
5. Wrap up

Introduction

- The purpose of this meeting was to further review technical work in the Asks developed by MANE-VU.

Q/d*C Analysis (Kate Knight, Connecticut)

- This analysis was a tool used as part of the assessment for identifying those states that significantly contribute to visibility impairment at Class I areas within MANE-VU.
- Emissions from 2015 were based on EPA trends site but were scaled to ensure updated values were included. Analysis used the centroid method for anthropogenic emissions with some individual point source locations.
- Conclusion was that sulfates are still the main component of visibility impairment but that NO_X is becoming more prevalent.
- SESARM stated that Q/d does not work well with long distances and asked how this fact was handled in this analysis with CALPUFF.
- New Hampshire noted that the Federal Land Managers also raised this issue but we needed to move forward so we used the tools available to us at the time. MANE-VU was concerned that CAMx is not yet ready to assess individual sources. MANE-VU understands that these results may not be conclusive but they are reasonable.
- SESARM reiterated his concern with using an imperfect tool.

CALPUFF Screening (Jessica Dunbar, New Hampshire)

- This analysis was used to quantify and rank large stationary sources of SO_2 and NO_X. This was a screening exercise and does not provide absolute values. The analysis looked at the top five EGUs and other sources of similar size, taking into account the distance of the sources from the Class I areas.
- EGU emissions were obtained from CAMD for 2011 and 2015 and were based on the 95th hourly rate for SO_2 and NO_X.
- Virginia was strongly concerned with using 2011 & 2015 for the analysis rather than 2018, which was of concern because Yorktown will retire in 2018 and Chesterfield is retired.
- New York noted that the analysis reflects the information available at that time. States can use updated information in their SIP as a response to the Ask using enforceable commitments and that states would perform a 4-factor analysis on any particular unit and document in the SIP.

Trajectory Analysis (Tom Downs, Maine)

- Presented metrics analyses for 2000-2015 and 2015 trajectory modeling analyses for the "most impaired" visibility days.
- A comparison of the metrics showed similar results between 20% Worst Days and 20% Most Impaired Days.
- New Hampshire noted that contributing states were determined based on the Q/d analysis, CALPUFF modeling while using a 2% (sulfate and nitrate) contribution threshold at a Class I area, while the back trajectory was used as a quality check.

Discussion

- Florida asked if MANE-VU performed a synthesis analysis linking the Q/d and trajectory.
- New Hampshire responded that we did not because there are no numerical values associated with the back-trajectory analysis.
- North Carolina asked if we sum up emissions and use the centroid method or were emissions assigned to the county level.
- New Hampshire responded that for some sectors statewide emissions were summed using the centroid position and for some individual point sources locations included.
- LADCO asked about the comment period for technical questions or any questions regarding the process and it was noted that the feedback was due December 31, 2017.
- Virginia asked when states provided updated information, if it will be used in modeling or emissions trends for 2015.
- New Hampshire noted that it may be used for photochemical modeling and also goes towards states satisfying the Asks.
- A question was asked about the Low Sulfur Fuel Oil ask but, due to time, was tabled for the next consultation.

MANE-VU Inter-RPO Consultation #4

Air Directors/Commissioner Call

January 12, 2018

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X	X	X	X		X	X	X	X		X	X		X	1, HQ	FS, NPS

AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV	GA
X	X	X	X	X		X	X	X	X	X	X	X	X	X

LADCO	SESARM	CENSARA	WESTAR	MARAMA
X	X	X		X

Agenda

1. Commissioner Call Scheduling
2. Reasonable Measure Overview - New Jersey
3. Upwind States Feedback
    a. Comments Received During December – Joseph Jakuta (OTC/MANE-VU)
    b. SESARM
    c. LADCO
    d. CENSARA
4. Next Steps

Introductory Statements

- Dave Foerter (OTC/MANE-VU) welcomed everyone and noted that the purpose of this consultation event is to facilitate dialogue between the MANE-VU states and particularly the upwind states that have been identified in the Asks.

Commissioner Call Scheduling (Dave Foerter)

- MANE-VU would like to conclude consultation process with a call among state Commissioners in late February or early March.

Regional Measure Overview (Ray Papalski, New Jersey)

- Presentation discussed four factor analysis, how sources were identified, resources used, and which data were analyzed.
- MANE-VU reassessed Asks from first phase of regional haze planning and made updates.
- The determination was made that the second planning period should include sources that emit NO_X in addition to SO_2.
- Assessed data for several sectors including emissions, cost and control information for specific sources/sectors.
- MANE-VU did not conduct 4-factor analyses on any specific sources but is relying on states to do that for sources located within their state.
- Since many facilities complied during the first planning period new sources were captured.
- Increases in nitrate levels in MANE-VU Class I areas considered in assessing EGUs.
- MANE-VU is not asking contributory states to look at peaking units.

Upwind States Feedback

- North Carolina asked if the top 50 sources for each Class I area in MANE-VU are inside and/or outside of MANE-VU?
- New Jersey noted that sources are both inside and outside of MANE-VU and that contribution analysis is available on MANE-VU website in contributory analysis and in CALPUFF modeling analysis.
- Texas asked if we could you provide a copy of regulations of states' rules, which MANE-VU said could be provided.
- Virginia asked if the Dec 31st, deadline for technical information can be extended.
- MANE-VU noted that we are moving into our modeling phase so if information is sent it may be too late to incorporate into modeling.
- New Jersey noted that states can still document if a unit closed in SIPs even if it is not including in modeling since it could show that you are meeting the Ask.

Upwind States Feedback

- MANE-VU received data or comments WV, TN, OH, LADCO, and SESARM.

Upwind States Feedback (SESARM)

- SESARM noted that some individual member states may submit their own comments.
- He also voiced concern with the schedule given that EPA is allowing until 2021 to submit SIPs. There is a lack of time to consider translating emissions, or how much they might change in your analysis. SESARM thought they would have an opportunity to make corrections.
- SESARM was also concerned that some of the analysis techniques (e.g. CALPUFF and Q/d) have uncertainty, especially at long distances, and it could be unlikely that distant states actually impact northeast Class I areas like the analysis result show.
- SESARM requested that MANE-VU delay their SIP process until SESARM can do their own analysis.
- SESARM noted that EPA said in Denver they will accept SIPs using 2011 base year for a 2021 submittal.
- SESARM also noted that SE emissions have been dramatically reduced (~95% in one state) and after further analysis some of these states may not be contributing and it would be unfair to keep them in the process.
- SESARM does not believe the Asks will produce any change in visibility because of other programs. Concerning low sulfur fuel oil, 2016 residential fuel oil component is only 6% of the total sales in the northeast and southeast.
- SESARM finds the energy efficiency goal interesting, but some EE measures have plateaued at this point for several reasons.
- SESARM will follow up with more formal correspondence, possibly in the coming weeks.
- MANE-VU asked if EPA could clarify the use of 2011 platform with a 2021 RH SIP submittal.
- EPA noted that the Regional Haze rule has no requirement for air quality modeling and it does not dictate what the base year for a modeling platform is, but it has to be reasonable. EPA is not prepared to say if 2011 is reasonable and that is up to the modeling group led by Chet Wayland (EPA OAQPS).
- SESARM argued that it reasonable because it is what states can get together for SIP preparation. To legally meet a 2021 deadline, we need to use 2011.
- New Hampshire noted that in Denver, EPA never gave us anything in writing for us to have any confidence with using 2011 for a 2021 submittal.

Upwind States Feedback (LADCO)

- LADCO noted that a letter was sent to OTC/MANE-VU in December expressing their concerns with the technical analysis. The 2011 modeling platform has had many iterations and MANE-VU's screening used an old version. There is newer data in the current platform that would strengthen and lead to different conclusions of the source contributions. The same problem exists for CAMD data from 2015. There are data quality issues with the CAMD data, e.g. gap-filled data can create artificial spikes. That data needs to be scrubbed or normalized before modeling is performed and before any source contribution analyses.
- LADCO went on to note that there is a better data set in 2011 'en' platform, which can be used in conjunction with ERTAC data that removes the gap filling spikes, etc.
- LADCO and the rest of the country are planning on submitting SIPs in 2021 and new data will be available, as well as new tools and techniques and possibly new rules.
- New Hampshire noted that MANE-VU is in the process of working on updating emission inventory for a control strategy case to be used in CMAQ modeling and is looking at the recent data updates from states to incorporate.
- MANE-VU noted that modeling of RPGs can be upgraded to 2011 'el', but not 'en' because 2028 was not projected for 'en'.
- LADCO noted that they might build a 2028 'el'-'en' hybrid 2028 scenario inventory and expect preliminary results in February with CMAQ and CAM-x ready files that will capture some of the NODA comments and would be happy to share the results.

Upwind States Feedback (CenSARA)

- None

Next Steps

- The next step is to move towards a conversation to the Commissioner level.
- Clark Freise (NH, MANE-VU Chair) will lead that conversation when this occurs.
- Clark Freise (NH, MANE-VU Chair) Thanked to everyone for providing thoughts, concerns and comments on the process.

MANE-VU Inter-RPO Consultation #5

March 23, 2018

CT	DC	DE	MA	MD	ME	NH	NJ	NY	PA	RI	VT	TrN	OTC	EPA	FLM
X		X	X	X	X	X	X	X	X		X		X	1,2, HQ	FS, NPS

AL	FL	IL	IN	KY	LA	MI	MO	NC	OH	TN	TX	VA	WV	GA	SC
	X		X	X			X	X	X	X	X	X	X	X	X

LADCO	SESARM	CENSARA	WESTAR	MARAMA

X	X	X		X

Agenda

1. Roll Call (5 min.)
2. Welcome and Purpose of this Meeting – Clark Freise, New Hampshire Commissioner and MANE-VU Chair (5 min.)
3. Executive Summaries - MANE-VU States and Staff (10 min.)
    a. The timing and substance of MANE-VU Asks
    b. What was learned from Contribution Analysis
    c. How Consultations informed the process
4. Updates by MANE-VU States on Submitting Regional Haze / Visibility Impairment SIPs (10 min.)
5. Updates and Perspectives by States outside of MANE-VU region, Tribal Nations, Federal Land Managers and EPA (25 min.)
6. Next Steps and Adjourn Meeting

Introduction

- Clark Freise (NH, MANE-VU Chair) thanked the upwind states for input and comments.

Executive Summary Presentation

- Jeff Underhill and Frank Steitz (NJ) reviewed the slides which included:
    - Consultation Plan
        - Northeast has a handful of Class I areas. MANE-VU also looked at nearby areas in Virginia and West Virginia. The first part of the consultation process was with states within MANE-VU, then progressed to consultation with contributing states. Phase 1 was completed in August 2017; Phase 2 reaches completion with this session. FLMs have been involved and consultation will be ongoing.
    - Technical work:
        - MANE-VU provided a great deal of technical work within the MANE-VU region that involved coordination between the MANE-VU states and several MJOs. A lot of work was invested in the process to meet the original 2018 submittal date. We know not all states in consultation have the same submittal goal and other states may be on different timelines and sharing our process–technical and consultation–may help them.
    - Development of the Ask
        - We developed 3 Asks. The first was only being asked of MANE-VU states; there was a separate Ask of contributing states; and a third Ask of the EPA.
        - Current Inter-RPO Ask, paraphrased:
            1. EGU >25 MW with installed control will run controls year-round; as an alternative – obtain equivalent reduction;
            2. If a modeled source >3 Mm^{-1} evaluate controls;
            3. States pursue Ultra Low Sulfur Fuel Oil Standards no later than 2028;
            4. EGUs and other large sources that use lower emitting fuels have enforceable conditions to ensure status quo and allow for emergencies;
            5. Consider and report energy efficiency programs and increasing combined heat and power and renewable energy.

- Consultation will continue as needed or requested.
- For any outstanding questions and reports first visit the MANE-VU webpage and then any address questions to MANE-VU.

Discussion

- Virginia asked if there are analyses that show visibility improvements from implementing the low-sulfur fuel item from states.
  - New Hampshire pointed out that NESCAUM analyzed this question 10 years ago. This was a region-wide analysis, but it probably didn't break out individual states, though it determined that a regional measure was well above threshold for human eye to detect.
- Georgia reiterated that many states outside of MANE-VU will not be able to commit to MANE-VU Ask items until they do their SIPs and wanted to know how MANE-VU will account for any changes that occur after their SIPs are submitted but before upwind states SIPS are submitted.
  - New York responded that MANE-VU's 2028 modeling analysis will assume the items in the Inter-RPO Ask have been implemented. It's a little fuzzier as to whether modeled measures in a Region Haze SIP have to be permanent & enforceable than in a criteria pollutant SIP. The SIPs themselves, though, have to include enforceable measures. We're not in a position where we have to show we are meeting Uniform Rate of Progress because all of our Class I areas are at or below the 2028 URP levels. MANE-VU is striving for what's reasonable beyond simply meeting URP.
- MANE-VU is still working on getting the response to comments onto the website and will notify when it is available.
- National Park Service and North Carolina sought clarification of enforceability of measures included in modeling.
  - New York noted that we model what we determine to be reasonable and it is up to the states and their analysis to show why it is not reasonable for them. He also noted that Reasonable Progress Goals in themselves are note enforceable which leads us to our approach.
  - New Jersey stated that in 2008, MANE-VU had the "167 Stack" Ask. Once that ask was made, individual states did an analysis whether the controls were reasonable. For most stacks it was reasonable, but for some stacks it wasn't. Similarly, states should include their justification in their SIPs with the reasonableness of this Ask.

Next Steps

- MANE-VU is willing to share modeling results with states outside of MANE-VU.
- Non-MANE-VU states can consult with the TSC as they move forward with their SIPs.
- This concludes MANE-VU's scheduled consultation sessions, but MANE-VU will be keeping the lines open and entertain questions as they arise from the upwind states.

Overview of MANE-VU Response to Consultation Comments

In addition to the verbal consultations documented in the previous section, MANE-VU received written comments from eight states and two regional planning organizations (RPOs). MANE-VU appreciated the time and effort each participant put into the consultation process. MANE-VU reviewed and documented detailed responses to each of the comments submitted. These detailed responses are in the following section. The comments consisted of three overarching concerns: the uncertainties of the Q/d*C and CALPUFF tools, the choice of the base year for said tools, and the timing of the 2018 schedule for SIP submittals.

States expressed concern regarding the analyses utilized for the selection of states for the consultation process. Specifically, the Q/d*C and CALPUFF analyses. MANE-VU agreed that these tools, as all models, have their limitations. However, MANE-VU has taken a weight of evidence approach through the use of several analyses. This approach combined with altering traditional methods to account for known uncertainties had resulted in a consistent selection of top contributors. The level of repetition in the analysis results, combined with results of the HYSPLIT quality assurance analysis led MANE-VU states to retain confidence in the selection of states. Additionally, the first planning period incorporated more resource intensive modeling; while this is more reliable tool, the results did not vary from the other methods used. Regarding the setting of the reasonable progress goals for 2028, MANE-VU is building a modeling platform that includes the technical correction supplied by each of the commenters. This documentation will be available on the MANE-VU website upon completion.

Additionally, there were several comments regarding the choice of base year. MANE-VU agreed that the choice of base year is critical to the outcome of the study. MANE-VU acknowledged that there are now newer versions and would use the best available inventory for each analysis. However, MANE-VU disagreed that the choice of these inventories was not appropriate for the Q/d*C and the CALPUFF analysis. Again, several inventories were used, with several meteorological years and the resulting top contributors were similar.

States and regional planning organizations also suggested that MANE-VU states adopt the 2021 timeline. MANE-VU agreed with the reasons the comments provided, such as collaboration with data and planning efforts. However, MANE-VU disagreed that the 2018 timeline would prohibit collaboration. In fact, MANE-VU pointed out that the proactive effort by the MANE-VU states would benefit current and future collaborations. As an eastern set of states, MANE-VU is a region prone to transported air pollution. The early analyses, inventory collection, and strategy collaboration can only make the SIP process more efficient and streamlined for upwind states' planning processes.

Overall, MANE-VU was satisfied with the outcome of the consultation with upwind states. Many reoccurring themes indicated a lot of common ground between the upwind states and the MANE-VU states. Information received during the consultation process provided improved data for modeling and future planning exercises. The 2018-2028 planning period is well grounded with this consultation process.

MANE-VU Response to Consultation Comments

In accordance with 40 CFR 51.308(f)(2)(ii) consultations were held among the 14 states that were identified as potentially contributing to MANE-VU Class I areas, the representing Regional Planning Organizations (RPO), the Environmental Protection Agency (EPA), and the Federal Land Managers (FLM). This section details the responses to the comments received during the consultation process.

Written comments were received from eight states and two regional planning organizations. Each of these comments was carefully considered. Detailed below are MANE-VU's responses to the key concepts for each of the comments received.

Additional comments were received from the Lake Michigan Air Directors Consortium (LADCO) and the National Park Service. Those comment letters and MANE-VU responses are included in Appendix A.

Limitations of Q/d*C and CALPUFF tools

Florida DEP, North Carolina, Texas, Ohio, the Lake Michigan Air Directors Consortium (LADCO), and the Southeastern States Air Resource Managers (SESARM) raised concern regarding the use of the Q/d*C and CALPUFF methodologies. More specifically, concerns regarding the limitations of these tools:

- regarding the use of statewide emissions,
- distances greater than 300 km,
- inherit tendency to overestimate contributions,
- residence times,
- wind directions, and
- secondary particle formation.

One study referenced in the comments was the "Interagency Workgroup on Air Quality Models Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts". MANE-VU agrees that the tools have limitations and appreciates the concern. MANE-VU concurs that this study noted uncertainties associated with long-range CALPUFF transport simulations. We note that the study also determines that uncertainty is driven by the characterization or mixing depth and the transport winds. These conclusions were derived with CALPUFF and CALMET version 5.0.

Therefore, to best account for the noted uncertainty MANE-VU's selection of states for the consultation was derived through the use of several methods, several meteorological years, the utilization of the more recent version of CALPUFF, 7.2.1, to include model refinements[5] and based upon a relative ranking of these quantitative results.

Several Q/d runs were utilized to evaluate the ranking of contributing states. MANE-VU states reviewed Q/d runs whereby state total emissions were analyzed from the states centroid and the individual point sources were run from their unique locations and subsequently summed.[6] The relative rankings for each method were analyzed and compared. Table A1 shows the top five contributing states for each Q/d*C method. Note despite the varying methodologies, there was little difference in the states identified as the top five contributors. Therefore, MANE-VUs inclusion of statewide emissions did not alter the

[5] Details on version updates can be found here: http://www.src.com/

[6] Additional methods were also tested. However, these are the two included for decision making process.

resulting conclusion in the selection of states, but rather added an additional tool to evaluate in a weight of evidence manner.

*Table 1A- Top Five Contributing States Identified in Q/d*C Portion of Analyses*

Class I Area	Rank	Total 2011 Emissions	2011 Point Emissions Individual Locations Summed
Acadia	1	OH	OH
	2	PA	PA
	3	IN	IN
	4	MI	MI
	5	IL	IL
Brigantine	1	PA	OH
	2	OH	PA
	3	MD	IN
	4	IN	KY
	5	KY	TX
Great Gulf	1	OH	OH
	2	PA	PA
	3	IN	IN
	4	MI	MI
	5	IL	IL
Lye Brook	1	PA	OH
	2	OH	PA
	3	IN	IN
	4	NY	MI
	5	MI	NY
Moosehorn	1	OH	OH
	2	IN	PA
	3	IL	IN
	4	MI	MI
	5	TX	IL

Additionally, each method had a "C" factor applied.[7] This C factor was derived for specific wind vectors unique to each Class I area receptor. [8] The C factor accounts for the conversion of sulfur dioxide to the sulfate portion of the fine particulates and is unique to each wind vector for each Class I area, therefore, accounts for some of the uncertainty with resident times, wind vectors and secondary particle formation.

As mentioned, MANE-VU also included additional meteorological analyses. The CALPUFF simulations were done with three sets of meteorology: 2002, 2011 and 2015. The inclusion of these extra

[7] Documentation associated with the Ci development is noted in Section 4 and Appendix D of Contributions to Regional Haze in the Northeast and Mid-Atlantic United States

[8] With the exceptions of James River Face - analyses were run utilizing both Shenandoah and Dolly Sods constants as substitutes in the absence of specific constants for James River Face.

meteorological sets provided MANE-VU with the unique ability to establish a relative ranking with less uncertainty.

Furthermore, to recognize the fact that each of these methods bore their own uncertainties, MANE-VU did not utilize the results for the absolute value of contribution but rather the relative ranking between states, to determine the top contributing states for consultation. Therefore, the concern regarding an over estimation of contribution values is not relevant to the application of these results.

It is also important to note that during the first round of SIP regional haze planning we included several other methods to identify contributing states; all of the methods concurred that the top contributing states would appear in the same relative order of ranking. The first-round of regional haze planning showed that the more resource intensive photochemical modeling would not necessarily change the relative ranking within the top contributing states. Therefore, as this second round of regional haze planning period is more resource restricted than the previous one, MANE-VU moved forward as resources allowed and was careful to recognize the flaws of each tool utilized. MANE-VU also notes that regardless of the model chosen uncertainties will exist, it is up to the interpreter to note those uncertainties and implement due diligence to implement methods that might clarify or reduce those uncertainties. Through the inclusion of the varied methodologies and the treatment of the results for qualitative rankings, MANE-VU feels that these uncertainties were adequately addressed for the resources and objectives at hand.

Scaling Q/d*C Analysis

LADCO, North Carolina, and Texas disagreed with the use of the 2015 CAMD, Mobile and Area emissions for the scaled Q/d*C analysis. As noted above LADCO suggested the use of ERTAC 2.7. This version of ERTAC was not available at the time of the study and therefore was not an option. During the consultation with the Federal Land Managers[9], it was noted that known reductions had occurred since the 2011 base year and decided it was important to estimate that impact on the relative contributions. MANE-VU agreed and went forward with an additional scaling analysis to account for known reductions.

North Carolina noted a lack of documentation in the steps between the emissions and the scaled contributions. MANE-VU's documentation has been updated to include the detail of the methods, these files are located on MANE-VU's webpage.[10] North Carolina also noted that the use of Q/d is not traditionally used for all sources of emissions. MANE-VU opted to continue to track total emissions as one part of the Q/d*C process as these emissions are important piece of the whole. MANE-VU did also do the point sources and grouped them after the unique locations were considered. As noted, above the top contributing states were not altered by including a statewide total emissions analysis.

Texas also commented that mobile sources should be considered uncontrollable. While, MANE-VU agrees the control of mobile emissions falls primarily beyond the scope of a state's authority, it should be noted that the MANE-VU Ask for upwind states did not address mobile sources. But rather the inclusion of mobile sources was incorporated in an Ask of EPA. MANE-VU's visibility analysis noted that nitrates role in visibility impairment is becoming more important for this next planning period. As such,

[9] Verbal feedback received at the Fall 2015 Joint Meeting
[10] https://otcair.org/manevu/document.asp?Fview=Reports

it was MANE-VU's belief it would be inappropriate to neglect the largest source of NOx, the precursor to nitrate.

While, MANE-VU agrees, scaling will also have uncertainties, it was another weight of evidence study whereby known reductions could be fairly evaluated.

Inventories- 2011 Base Year and 2018 Projected Year

LADCO and Texas commented regarding the use of the 2011 and projected 2018 base years for the Q/d*C exercise. Commenters noted there is a more recent rendition of 2011 available and the current state of knowledge would improve the 2018 projections. More specifically, it was suggested that MANE-VU use the EPA 2011 en platform, projections for 2018 has been improved since the Q/d*C study, ERTAC 2.7 should be use instead of Clean Air Markets Division Data (CAMD) and the 2011 base year did not resemble typical meteorology in Texas.

MANE-VU agrees that the choice of base year is important and the technical updates provided are the result of this consultation. These corrections have been included in the emissions platform for the photochemical modeling to determine the 2028 base and control. MANE-VU also requests that each state with specific facilities in the Ask review the use of the 2011 and 2015 emissions and clarify why the use of these emissions are no longer appropriate, so that we may properly incorporate the changes if appropriate. MANE-VU interprets appropriate changes to be those that are permanent and enforceable. We expect as states prepare their SIPs, the appropriate updates, such as additional controls or shut downs of specific units or plants, would be included, especially with regards to units identified as significant sources. MANE-VU is not asking for a significant amount of work on the part of States for those units, as a brief explanation in their SIP describing the specific situation would likely suffice in most cases.

However, with respect to the use of these inventories for the Q/d*C and CALPUFF analyses, MANE-VU is satisfied. These were the most recent years available at the time of the study and when the report was opened for public comment, data was incorporated into the next analyses as appropriate when noted by stakeholders, a process that was open to the states later identified as contributing states. While we appreciate that, there is now more recent data; none of the suggested inventories were available at the timing of the Q/d*C analysis and the CALPUFF analysis. To initiate consultation process it was critical to move forward with those analyses at that time. We are appreciative of the technical corrections that were communicated at each level of the process. MANE-VU intends to continue to implement the more recent data where and when available for the future analyses.

Utilize 2021 Deadline Extension

LADCO, North Carolina, Missouri, and SESARM all indicated that they, or the states they represent, intend to utilize the deadline extension and submitted their respective SIPS in 2021. Commenters the asked that MANE-VU reconsider the timeline currently adopted. Commenters advised MANE-VU to consider the 2021 deadline, in part to collaborate through the SIP process with the upwind states. MANE-VU does not feel that the 2018 timeline prohibits such a collaboration. In fact, MANE-VU sees the earlier timing as mutually beneficial, because the predominant meteorology across the United States creates a west to east wind flow, and therefore, having the eastern portion of a collaborative commit and implement an earlier planning process can only benefit the western planning agencies. MANE-VU committed to this admittedly challenging timeline to address the issue of regional haze in the most

efficient manner for all states involved. Additionally, MANE-VU have invested resources into this good faith effort a delay to 2021 not only delays any potential air quality benefit it risks a significant amount of wasted resources. We have no confidence that the USEPA will accept SIPs submitted in 2021 with the 2011 platform. The Regional Haze Rule requires the use of the latest available inventory 2021 will have several renditions of the national emissions inventories, not yet finalized or prepared, that will inevitably need to be analyzed. We recognize the complex and lengthy process of air quality control and are encouraged to find an opportunity to best utilize our resources and provide ample time for our western collaborators to adequately address their own SIP planning process. MANE-VU members intend to submit their respective SIPs in accordance with the original deadline, July 31, 2018.

Use of Back Trajectory Analysis

Florida, North Carolina, and Texas commented regarding the qualitative use the HYSPLIT analysis used for quality assurance of the selection of states. Specifically, concern was noted when states had low percentage of HYSPLIT tracks on impaired days and the choice of EDAS 40 km over NAM 12 km.

MANE-VU utilized the HYSPLIT trajectories as a quality assurance check to the weight of evidence analysis. The purpose of this analysis was to determine if the trajectories on impaired days had the potential to impact the Class I areas of concern. Therefore, the percentage of periods where the state intersected these trajectories was not a threshold for consideration. Doing so would require a much more thorough analysis and considering previous analyses identification of top contributing states, MANE-VU did not feel the additional analysis was an appropriate next step.

The choice of the meteorological data for this analysis was based on the quality of data archived. EDAS 40 km had the best data recovery rate while retaining the methodology to be compared to 2002 analysis.

MANE-VU appreciates the concern voiced and agrees additional analyses would always be better. However, for the objective of the study at hand MANE-VU is confident that this analysis is more than adequate.

Threshold for the Selection of Contributing States for Consultation

Florida, Texas, and North Carolina submitted comments regarding the choice of the threshold whereby a state was included in the consultation. Each of these comments is different in nature and is addressed individually below.

Florida raised concern that that they were only 2.1% of the contribution to Acadia alone when the threshold was 2% to any Class I area. MANE-VU appreciates the concern, however, disagrees that this should negate the invitation for consultation. As the goal for regional haze is natural visibility it is imperative that the top contributors identified are consulted with in each round. MANE-VU also notes Florida's comments include a summary of emissions reductions. We anticipate Florida's SIP will document these reductions further and these reductions will in fact reduce their contribution.

Texas included photochemical modeling results that indicated the maximum impact to a MANE-VU Class I area was just below 1%. Without further documentation, MANE-VU cannot respond to these new modeling results. However, MANE-VU appreciates the information and will review these results when Texas makes them available.

North Carolina noted that decision for the 2% threshold had not been documented and requests further documentation to better understand and address their contribution. MANE-VU chose the 2% threshold because it doubles that of the EPA 1% threshold for NAAQS. The one percent threshold was thought to be too stringent given the uncertainties associated with the analyses performed.

It is MANE-VU's contention that given the wind patterns over the United States, all State's to the west and south contribute to some degree to air pollution in the northeastern United States. Thereby, a thorough and complete analysis must include all states in the modeling domain. We believe our analyses have adequately addressed the uncertainties to the extent our resources allow and have identified the states for consultation based on the best data available at the time of the analyses. Where contributing states identify significant emissions reductions in the planning period, we would encourage states to quantify and document said reductions in their federally enforceable SIPs.

Technical Corrections

Florida, Ohio, Texas, Tennessee, Virginia, West Virginia, and North Carolina provided technical updates through the consultation process. Where appropriate, these revisions have been included in the 2028 base and control modeling. SESARM noted that revisions included must be quantifiable, permanent and enforceable. Where technical revisions were submitted if documentation was not accompanied it was requested. When documentations supported the quantification, permanent and enforceability of those revisions, they were incorporated into the 2028 platform. In addition, it is MANE-VU's contention that the recommendation for inclusion into the ERTAC tool is the acknowledgement of the state that the changes are "SIP quality". Thereby, those changes are treated as permanent and enforceable.

Upon completion, the 2028 photochemical modeling, the resulting reasonable progress goals and the associated documentation will be publicly noticed and available on the MANE-VU website.

Summary

Overall, the feedback MANE-VU received is consistent with MANE-VU's perspective. However, it is MANE-VU's hope that these responses clarify the rationale behind the decision-making process. Additionally, MANE-VU is hopeful that its early effort for the 2018 submission increases opportunities for planning and results in improved air quality.

Appendix A: LADCO Comment Letter

LAKE MICHIGAN AIR DIRECTORS CONSORTIUM
9501 W. Devon Ave., Suite 701 Rosemont, IL 60018
Phone: 847-720-7880 Fax: 847-720-7891

May 23, 2018

David Foerter
Ozone Transport Commission and MANE-VU
444 N. Capital St. NW
Washington DC 20001

Subject: MANE-VU Regional Haze Consultative Process

Dear Mr. Foerter,

I would like to reiterate my appreciation for MANE-VU's communication with LADCO and the LADCO states through your regional haze consultative process. LADCO and its states have provided feedback and data to MANE-VU during this process. The meeting minutes circulated by Mr. Jakuta on April 24, 2018 accurately reflect the comments that we made during the MANE-VU conference calls.

In these comments, in a December 20, 2017, letter that LADCO submitted to MANE-VU, and in similar letters submitted by some of the LADCO states to MANE-VU, we expressed concerns about the technical approaches being used by MANE-VU to quantify the contributions of emissions from upwind states to visibility in downwind Class I areas. Briefly, LADCO disagrees with MANE-VU's selection of the base year inventory and future year inventory projections used in your Q/d and Q/d*C contribution assessments, respectively. In the LADCO letter, I provided recommendations to MANE-VU on alternative emissions data that more accurately reflect current and projected future emissions conditions in the LADCO states.

On behalf of LADCO and its states, I also want to restate that we strongly encourage MANE-VU to consider taking advantage of the extension to the current regional haze planning period. New data, modeling tools, and contribution analysis approaches will produce better technical assessments and benefit the overall regional haze planning process. The additional three years will also allow for more opportunities to collaborate on strategies for improving visibility in our Class I areas.

LADCO appreciates the opportunity to provide feedback on your consultative process and we welcome further discussion with MANE-VU on our comments and recommendations.

Sincerely,

Zachariah Adelman
LADCO Executive Director

Appendix B: MANE-VU Response to LADCO Comment Letter

Members
Connecticut
Delaware
District of Columbia
Maine Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Penobscot Indian Nation
Rhode Island
St. Regis Mohawk Tribe
Vermont

Nonvoting Members
U.S. Environmental Protection Agency
National Park Service
U.S. Fish and Wildlife Service
U.S. Forest Service

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

July 27, 2018

Mr. Zachariah Adelman
Executive Director
Lake Michigan Air Directors Consortium (LADCO)
9501 W. Devon Ave., Suite 701
Rosemont, IL 60018

Dear Mr. Adelman:

MANE-VU received your May 23, 2018 letter in response to MANE-VU's April 24, 2018 Regional Haze Consultation Report documenting the content of the consultation on-line meetings and calls. Within the next few weeks, MANE-VU will post on its website a report documenting the consultative process for the second regional haze planning period, feedback received from states and regional planning organizations, MANE-VU's responses, and the minutes from each of the consultation sessions.

Thank you for providing your feedback on the minutes from the "Inter-RPO" phase of MANE-VU's consultation. We appreciate that you found the documentation of the meetings to accurately reflect the comments made during the conference calls and webinars.

For the four-factor analyses for the second planning period, MANE-VU encourages LADCO member states to update the inventories as you suggest for actual and projected emissions that they find best fit their situation.

We look forward to further discussion and consultation as the regional haze planning process proceeds.

Sincerely,

David C. Foerter
MANE-VU Executive Director

MANE-VU Class I Areas

ACADIA NATIONAL PARK ME

BRIGANTINE WILDERNESS NJ

GREAT GULF WILDERNESS NH

LYE BROOK WILDERNESS VT

MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

800 Maine Avenue SW - Suite 200 - Washington, DC 20024
202.318.0190 p

Appendix C: National Park Service Comment Letter

United States Department of the Interior

NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, CO 80225-0287

N3615 (2350)

TRANSMITTED VIA ELECTRONIC MAIL - NO HARDCOPY TO FOLLOW

April 12, 2018

Joseph Jakuta
Ozone Transport Commission/Mid-Atlantic/Northeast Visibility Union
444 North Capitol Street NW #322
Washington, DC 20001

Dear Mr. Jakuta:

Thank you for the opportunity to comment on the Mid-Atlantic/Northeast Visibility Union (MANE-VU)'s draft Statement of its planned course of action for assuring reasonable progress for the second regional haze implementation period (2018-2028).

Over the past 18 months, MANE-VU has completed a contribution assessment, developed a request for its member states to consider specific control measures as part of the second regional haze state implementation plans (MANE-VU Ask), and consulted with Federal Land Managers and neighboring states concerning the MANE-VU Ask. Our understanding is that individual MANE-VU states are still developing their processes to define which sources will be evaluated for continued visibility improvement in the Class I areas in MANE-VU states.

Because we could not determine which specific sources that the MANE-VU states will be evaluating, we compiled the attached list of sources that may impact Acadia, Mammoth Cave, or Shenandoah National Parks using a simple screening metric. We ask that the states review and consider these sources for inclusion in their long term strategies.

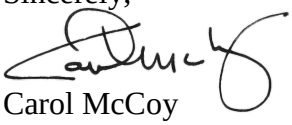
In addition to these major sources, we urge the states with oil and gas point or area source emissions to evaluate oil and gas emission trends and potential for emissions reductions as part of their long term strategy for 2028.

We would like to discuss this further with the MANE-VU Technical Support Committee and the states in the near future. We also would like to learn more about how the screening process in the MANE-VU Ask corresponds with EPA's 2016 Draft Guidance on Progress Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional

Haze State Implementation Plans for the Second Implementation Period (see especially guidance on page 72, in Section 6.3 of that document).

We look forward to working with MANE-VU on this important program for reducing regional haze affecting Class I national parks and wilderness areas. Pat Brewer (303-969-2153 or patricia_f_brewer@nps.gov) of my staff will be following up with you to set up a call.

Sincerely,



Carol McCoy
Chief, Air Resources Division

cc:
Rob Sliwinski, New York Department of Environmental Conservation and MANE VU Technical Support Committee Chair

ATTACHMENT

Screening Metric

EPA's draft guidance allows use of emissions divided by distance (Q/d) as a surrogate for a modeling analysis to estimate impact. We first summed 2014 NEI NOx + PM_{10} + SO_2 + SO_4 at a given facility and divided by distance to a specified NPS Class I area. Airports and rail yards were deleted because these mobile sources are not regulated by states. For EGUs with significant Q/d values, we used 2017 CAM data to adjust for changes in emissions since 2014. We also deleted facilities that either had shut down since 2014 or had committed to shut down during the next planning period. To estimate the impact of MANE-VU facilities, we summed the Q/d values across all MANE-VU states relative to ACAD, MACA, and SHEN, ranked the Q/d values relative to each Class I area, created a running total, and identified those facilities contributing to 80% of the total impact at each NPS Class I area. We applied a similar process to facilities in ME relative to ACAD. We merged the resulting lists of facilities and sorted them by their states. Although the numbers of facilities identified for most states were not excessive, we observed that the totals for NY and PA could be considered burdensome. To address this problem, we suggest that a state consider those facilities comprising 80% of the Q/d total, not to exceed the 25 top-ranked facilities.

Connecticut

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
754311	PSEG PWR CT LLC/BPT HARBOR STA	1,530	487	3.1	ACAD
754411	WHEELABRATOR BRIDGEPORT LP	1,409	489	2.9	ACAD
715611	C R R A / MID-CONNECTICUT	821	412	2.0	ACAD
715711	MIDDLETOWN POWER LLC	547	421	1.3	ACAD
643411	PSEG FOSSIL LLC/ POWER CT LLC	486	461	1.1	ACAD
754611	COVANTA SOUTHEASTERN CT CO	417	397	1.1	ACAD
8501611	WHEELABRATOR LISBON INC (WM)	327	386	0.8	ACAD
2706711	ALGONQUIN GAS TRANSMISSION (Cromwell)	317	421	0.8	ACAD
588711	COVANTA BRISTOL, INC	300	436	0.7	ACAD

District of Columbia

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
2701211	U.S. GSA Central Heating and Refrigeration Plant	258	101	2.5	SHEN

Delaware

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
588311	Delaware City Refinery	2,730	233	11.7	SHEN
640911	INDIAN RIVER GENERATING STATION	709	260	2.7	SHEN

Massachusetts

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
8127611	SEMASS PARTNERSHIP	1,616	301	5.4	ACAD
7869811	WHEELABRATOR MILLBURY INC	1,257	322	3.9	ACAD
7947211	WHEELABRATOR NORTH ANDOVER INCORPORATED	865	245	3.5	ACAD
8167211	WHEELABRATOR SAUGUS INC	709	256	2.8	ACAD
7236411	SOLUTIA INC	984	376	2.6	ACAD
6622811	MM TAUNTON ENERGY LLC	674	305	2.2	ACAD
7259211	ARDAGH GLASS INC	383	313	1.2	ACAD
7887011	MEDICAL AREA TOTAL ENERGY PLANT	325	273	1.2	ACAD
5979211	STONY BROOK ENERGY CENTER	298	372	0.8	ACAD
7764911	GENERAL ELECTRIC AIRCRAFT ENGINES	191	256	0.7	ACAD

Maryland

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7763811	Luke Paper Company	20,159	160	126.3	SHEN
6084311	Raven Power Fort Smallwood LLC	16,848	147	114.8	SHEN
8200011	Lehigh Cement Company - Union Bridge	3,026	114	26.6	SHEN
7931411	Holcim (US), Inc.	2,028	93	21.8	SHEN
7717711	AES Warrior Run	1,844	89	20.8	SHEN
6011511	NRG Morgantown Generating Station	2,517	123	20.4	SHEN
5155011	C.P. Crane LLC	3,248	258	12.6	SHEN
6011911	NRG Chalk Point, LLC	1,732	138	12.6	SHEN
5998011	NRG Dickerson Generating Station	724	71	10.2	SHEN
5857411	Wheelabrator Baltimore, LP	1,413	141	10.0	SHEN
7719011	Montgomery County RRF	551	71	7.7	SHEN
6117011	Naval Support Facility, Indian Head	387	96	4.0	SHEN

Maine

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
8200111	SAPPI - SOMERSET	3,476	107	32.5	ACAD
8028411	DRAGON PRODUCTS CO - THOMASTON	1,157	41	28.3	ACAD
8026411	CATALYST PAPER OPERATIONS INC. - RUMFORD	2,829	161	17.6	ACAD
5974211	WOODLAND PULP LLC	1,482	102	14.6	ACAD
7764711	VERSO PAPER - ANDROSCOGGIN MILL	1,803	136	13.2	ACAD
5760811	PENOBSCOT ENERGY RECOVERY CO	481	53	9.1	ACAD
7946611	S D WARREN CO - WESTBROOK	901	141	6.4	ACAD
5823511	FPL ENERGY WYMAN LLC	567	124	4.6	ACAD
5222111	MID MAINE WASTE ACTION CORP	302	129	2.3	ACAD
5223011	REENERGY LIVERMORE FALLS LLC	209	129	1.6	ACAD
7719211	MAINE INDEPENDENCE STATION	130	90	1.4	ACAD
5974111	COVANTA - JONESBORO	126	115	1.1	ACAD
7718411	COVANTA WEST ENFIELD	126	138	0.9	ACAD
8240811	LINCOLN PAPER AND TISSUE, LLC	134	151	0.9	ACAD
5676911	REENERGY STRATTON LLC	164	188	0.9	ACAD
8028611	WESTBROOK ENERGY CENTER	105	144	0.7	ACAD

New Hampshire

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7287811	PSNH - SCHILLER STATION	389	200	2.0	ACAD
7301111	WHEELABRATOR CONCORD COMPANY LP	411	249	1.7	ACAD
7758711	MONADNOCK PAPER MILLS INC	206	287	0.7	ACAD
17167211	BURGESS BIOPOWER	146	207	0.7	ACAD
7513011	APC PAPER COMPANY INC	209	305	0.7	ACAD

New Jersey

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7989011	CARNEYS POINT GENERATING PLANT	1,968	249	7.9	SHEN
8093811	Logan Generating Plant	1,224	259	4.7	SHEN
7201311	Paulsboro Refining Company LLC	975	273	3.6	SHEN
7903711	Phillips 66 Bayway Refinery	1,215	390	3.1	SHEN
8177011	Covanta Essex Company	887	402	2.2	SHEN
7392311	PSEG Bergen Generating Station	665	564	1.2	ACAD
7906111	Union County Resource Recovery Facility	649	597	1.1	ACAD
7990011	Cogen Technologies Linden Venture, L.P.	499	592	0.8	ACAD
6719711	NORTH JERSEY ENERGY ASSOC A LP	470	614	0.8	ACAD
7474911	PSEG FOSSIL LLC MERCER GENERATING STATION	480	658	0.7	ACAD

Rhode Island

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
5486911	DOMINION ENERGY MANCHESTER STREET, INC.	231	331	0.7	ACAD

New York

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
17052711	Red-Rochester LLC At Eastman Business Park	12,708	478	26.6	SHEN
8105211	LAFARGE BUILDING MATERIALS INC	6,874	543	12.7	SHEN
8121711	NORTHPORT POWER STATION	3,009	515	5.8	ACAD
7991711	INTERNATIONAL PAPER TICONDEROGA MILL	2,097	380	5.5	ACAD
8325211	FINCH PAPER LLC	2,055	408	5.0	ACAD
7968211	ALCOA MASSENA OPERATIONS (WEST PLANT)	2,883	724	4.0	SHEN
7814711	MORTON SALT DIV	1,590	416	3.8	SHEN
7822211	ANCHOR GLASS CONTAINER CORP	1,298	374	3.5	SHEN
7805611	DUNKIRK STEAM GENERATING STATION	1,282	409	3.1	SHEN
7210211	GUARDIAN GENEVA FLOAT GLASS FACILITY	1,251	453	2.8	SHEN
7994011	CON ED-EAST RIVER GENERATING STATION	1,106	413	2.7	SHEN
8175411	BOWLINE POINT GENERATING STATION	1,322	535	2.5	ACAD
7417811	AES SOMERSET LLC	1,209	494	2.4	SHEN
8123611	WHEELABRATOR WESTCHESTER LP	1,071	447	2.4	SHEN
7417011	COVANTA NIAGARA LP	1,092	468	2.3	SHEN
7993311	HEMPSTEAD RESOURCE RECOVERY FACILITY	1,014	442	2.3	SHEN
8325311	LEHIGH NORTHEAST CEMENT COMPANY	919	407	2.3	ACAD
8309011	RAVENSWOOD GENERATING STATION	940	417	2.3	SHEN
8542611	AES CAYUGA	955	430	2.2	SHEN
7221611	EF BARRETT POWER STATION	1,090	558	2.0	ACAD
8427811	ROSETON GENERATING STATION	948	512	1.9	ACAD
7982311	ASTORIA GENERATING STATION	811	561	1.4	ACAD
7981511	PORT JEFFERSON POWER STATION	581	497	1.2	ACAD
7416911	GLOBE METALLURGICAL INC	978	842	1.2	ACAD
8104811	BLACK RIVER GENERATION LLC	583	569	1.0	ACAD
7844111	ARTHUR KILL GENERATING STATION	593	594	1.0	ACAD
8035411	TGP COMPRESSOR STATION 245	535	541	1.0	ACAD
8322311	NORTHEAST SOLITE CORPORATION	446	484	0.9	ACAD
7209911	GENERAL CHEMICAL LLC	536	617	0.9	ACAD
7982011	ONONDAGA CO RESOURCE RECOVERY FACILITY	510	612	0.8	ACAD
7804411	OWENS-BROCKWAY GLASS CONTAINER INC	505	648	0.8	ACAD
7995311	CON ED-74TH STREET STA	418	565	0.7	ACAD
7986111	CON ED-59TH ST STA	408	567	0.7	ACAD
8123211	HUNTINGTON RESOURCE RECOVERY FACILITY	371	515	0.7	ACAD
8107511	REVERE SMELTING & REFINING CORP	385	545	0.7	ACAD
8539211	INDEPENDENCE STATION	444	629	0.7	ACAD
7800811	OWENS-CORNING INSULATING SYSTEMS- FEURA BUSH	313	451	0.7	ACAD
7980511	OSWEGO HARBOR POWER	432	636	0.7	ACAD
7801111	SELKIRK COGENERATION PROJECT	304	451	0.7	ACAD

Pennsylvania

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
3866111	GENON NE MGMT CO/KEYSTONE STA	31,020	217	143.2	SHEN
3005211	HOMER CITY GEN LP/ CENTER TWP	13,925	196	70.9	SHEN
2905911	GENON NE MGMT CO/CONEMAUGH PLT	12,422	179	69.5	SHEN
3005111	NRG WHOLESALE GEN/SEWARD GEN STA	8,946	180	49.7	SHEN
8204511	USS/CLAIRTON WORKS	6,269	211	29.8	SHEN
4952111	MAGNESITA REFRACTORIES/YORK	4,568	164	27.8	SHEN
3881111	MONTOUR LLC/MONTOUR SES	7,557	272	27.7	SHEN
6594511	CAMBRIA COGEN CO/EBENSBURG	4,377	178	24.6	SHEN
6463511	PPG IND INC/WORKS NO 6	3,230	161	20.1	SHEN
9248211	TEAM TEN/TYRONE PAPER MILL	3,216	196	16.4	SHEN
8404811	NRG MIDWEST LP/CHESWICK	3,410	226	15.1	SHEN
7872711	APPVION INC/SPRING MILL	1,527	159	9.6	SHEN
3881611	HERCULES CEMENT CO LP/STOCKERTOWN	3,085	322	9.6	SHEN
6652211	PHILA ENERGY SOL REF/ PES	2,675	280	9.5	SHEN
7409311	USS CORP/EDGAR THOMSON WORKS	1,969	217	9.1	SHEN
8406511	SCHUYLKILL ENERGY RES/ST NICHOLAS COGEN	2,360	273	8.6	SHEN
6594311	EBENSBURG POWER CO/EBENSBURG COGENERATION PLT	1,500	177	8.5	SHEN
6651211	ESSROC/NAZARETH LOWER CEMENT PLT I II III	2,535	319	7.9	SHEN
6603511	PITTSBURGH GLASS WORKS/MEADVILLE WORKS 8	2,639	337	7.8	SHEN
6597611	LEHIGH CEMENT CO LLC/EVANSVILLE CEMENT PLT & QUARRY	1,997	262	7.6	SHEN
7409411	US STEEL CORP/IRVIN PLT	1,529	214	7.1	SHEN
6582211	KEYSTONE PORTLAND CEMENT/EAST ALLEN	2,212	312	7.1	SHEN
4737311	SUNBURY GENERATION LP/SUNBURY SES	1,640	243	6.7	SHEN
8219711	COVANTA DELAWARE VALLEY LP/DELAWARE VALLEY RES REC	1,676	261	6.4	SHEN
3186811	PA STATE UNIV/UNIV PARK CAMPUS	1,293	210	6.1	SHEN
4760211	SCRUBGRASS GENERATING CO LP/KENNERDELL PLT	1,621	295	5.5	SHEN
6595211	KIMBERLY CLARK PA LLC/CHESTER OPR	1,409	265	5.3	SHEN
7889111	GRAYMONT PA INC/PLEASANT GAP, CON-LIME & BELLEFONTE PLTS	1,179	223	5.3	SHEN
6582111	INTL WAXES INC/FARMERS VALLEY	1,637	328	5.0	SHEN
4105111	GILBERTON POWER CO/JOHN B RICH MEM POWER STA	1,210	269	4.5	SHEN
6559611	DOMTAR PAPER CO/JOHNSONBURG MILL	1,269	289	4.4	SHEN
4966711	UNITED REFINING CO/WARREN PLT	1,376	333	4.1	SHEN
8330811	ARCELORMITTAL MONESSEN LLC/MONESSEN COKE PLT	795	200	4.0	SHEN
3881711	MARTINS CREEK LLC/MARTINS CREEK	1,255	337	3.7	SHEN
6580811	ARMSTRONG CEMENT & SUPPLY/WINFIELD	900	245	3.7	SHEN
7889011	PANTHER CREEK POWER OPR LLC/NESQUEHONING	1,066	293	3.6	SHEN
7874511	MONROE ENERGY LLC/TRAINER	947	261	3.6	SHEN
8331411	WHEELABRATOR FRACKVILLE/MOREA PLT	953	270	3.5	SHEN
6581211	LANCASTER CNTY RRF/ LANCASTER	616	185	3.3	SHEN
3762011	MT CARMEL COGEN/CULM FIRED COGEN PLT	827	258	3.2	SHEN
2989611	GUARDIAN IND CORP/JEFFERSON HILLS	667	209	3.2	SHEN
7407611	SHENANGO INC/SHENANGO COKE PLT	747	238	3.1	SHEN
8220011	WHEELABRATOR FALLS INC/FALLS TWP	946	325	2.9	SHEN
4843611	COVANTA PLYMOUTH RENEWABLE ENERGY/ PLYMOUTH	812	280	2.9	SHEN
7991611	ALLEGHENY LUDLUM LLC/BRACKENRIDGE	643	229	2.8	SHEN
6532511	AMER REF GROUP/BRADFORD	951	341	2.8	SHEN

4120011	YORK CNTY SOLID WASTE/YORK CNTY RESOURCE RECOVERY	451	175	2.6	SHEN
6621911	LAFARGE CORP/WHITEHALL PLT	759	303	2.5	SHEN
8141411	JEWEL ACQUISITION/MIDLAND FAC	668	271	2.5	SHEN
4952011	PROCTER & GAMBLE PAPER PROD CO/MEHOOPANY	832	347	2.4	SHEN
3020711	OWENS-BROCKWAY GLASS CONTAINER INC/CRENSHAW PLT 19	592	263	2.2	SHEN
8141311	AES BEAVER VALLEY LLC/BEAVER VALLEY LLC	586	267	2.2	SHEN
2990311	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	491	225	2.2	SHEN
3884311	CARMEUSE LIME INC/MILLARD LIME PLT	454	211	2.2	SHEN
3892811	AK STEEL CORP/BUTLER WORKS	554	259	2.1	SHEN
6558911	NORTHAMPTON GEN CO/NORTHAMPTON	769	671	1.1	ACAD
4735811	WESTWOOD GEN LLC/GEN STA	644	743	0.9	ACAD

Appendix D: MANE-VU Response to National Park Service Comment Letter – July 27, 2018

Members
Connecticut
Delaware
District of Columbia
Maine Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Penobscot Indian Nation
Rhode Island
St. Regis Mohawk Tribe
Vermont

Nonvoting Members
U.S. Environmental Protection Agency
National Park Service
U.S. Fish and Wildlife Service
U.S. Forest Service

MANE-VU Class I Areas

ACADIA NATIONAL PARK ME

BRIGANTINE WILDERNESS NJ

GREAT GULF WILDERNESS NH

LYE BROOK WILDERNESS VT

MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

Ms. Carol McCoy
Chief, Air Resources Division
United States Department of the Interior
P.O. Box 25287
Denver, CO 80225-0287

Dear Ms. McCoy,

The members of Mid-Atlantic/Northeast Visibility Union (MANE-VU) Regional Planning Organization (RPO) appreciate the feedback submitted by the National Park Service on the MANE-VU Ask for the second regional haze implementation period (2018-2028). This letter intends to better explain the status of the MANE-VU States' efforts in fulfilling the requirements of the Regional Haze program, including the participation of the federal land managers (FLMs) in the State Implementation Plan (SIP) development process.

The MANE-VU Ask was finalized and signed on August 25, 2017, after approximately six months of consultations and discussions between the states with Class I Areas in MANE-VU and the other MANE-VU states. Separate Asks were developed for MANE-VU states[1], upwind states that contributed at least two percent of the visibility impairment to the MANE-VU Class I Areas[2], and for the EPA and Federal Land Managers[3]. The two percent threshold was chosen because it encompassed about 85% of the visibility impairment due to sulfate and nitrate to the Class I Areas in MANE-VU, while keeping the mass factor above one percent (more details can be found in MANE-VU's August 5, 2017 Selection of States document[4]).

The Inter-RPO consultation process included five webinars that took place from October 2017 through March 2018. The Inter-RPO Consultation led to MANE-VU receiving written comments from eight states and two regional planning organizations. MANE-VU responded to these comments in the Consultation Summary document. The FLMs, including the National Park Service, were welcome and valued participants in the consultation process.

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[1] https://otcair.org/MANEVU/Upload/Publication/Formal%20Actions/MANE-VU%20Intra-Regional%20Ask%20Final%208-25-2017.pdf
[2] https://otcair.org/MANEVU/Upload/Publication/Formal%20Actions/MANE-VU%20Inter-Regional%20Ask%20Final%208-25-2017.pdf
[3] https://otcair.org/MANEVU/Upload/Publication/Formal%20Actions/MANE-VU%20FLM%20Final%20Ask%208-25-2017.pdf
[4] https://otcair.org/MANEVU/Upload/Publication/Reports/MANE-VU%20Contributing%20State%20Analysis%20Final.pdf

Although the Ask and consultation process are completed, there is still work to do to assist MANE-VU States in preparing Regional Haze SIPs. MANE-VU's Technical Support Committee is currently conducting air quality modeling of 2028 base and control cases to determine the 2028 Reasonable Progress Goals (RPGs) – which, it should be noted, are unenforceable goals, unlike typical SIP planning such as for ozone or particulate matter. After this modeling is completed and RPGs are developed, MANE-VU's tasks will essentially be completed and states will have everything they need to prepare their SIPs.

Each state, whether or not it has a Class I area and whether or not it is a MANE-VU State, must include an analysis of the Ask and the RPGs in their SIP for the second planning period. States must also perform a four-factor analysis, as defined in the December 2016 amendments to the Regional Haze Rule[5], to determine the feasibility of the measures necessary to comply with the Ask and meet the RPGs. The MANE-VU States welcome the input of the FLMs at this critical time. Addressing the questions and concerns of our federal partners can only improve our mutual understanding and result in a better product. States will still provide the FLMs the required 60 to 120 days to review their SIPs before they are released for formal public comment.

It should be noted that your source-specific comments regarding impacts on Class I areas should be made to individual states in the cooperative process described above to be included in their SIPs.

Thank you again for your comments. Please contact me at (202) 318-0192 should you have any additional questions.

Sincerely,

David C. Foerter
Executive Director

[5] https://www.epa.gov/visibility/final-rulemaking-amendments-regulatory-requirements-state-regional-haze-plans

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Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Lance Le Fleur
Alabama Dept. of Environmental Management
1400 Colesium Boulevard
Montgomery, AL 36110

Dear Director Le Fleur;

The MANE-VU members appreciate the feedback, time and effort the participants dedicated for the consultation process. The collaborative effort is not only a Clean Air Act (CAA) requirement but also essential to the success of the program.

Written comments were received from eight states and two regional planning organizations. Each of the comments received were carefully considered. MANE-VU has prepared a report documenting the consultation process, the feedback, and the responses. This report will be publicly available on the MANE-VU website, with finalization expected in early May.

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We look forward to consulting with you during your regional haze state implementation planning process.

Sincerely,

Clark Freise, MANE-VU Chair (NH DES)

David Foerter, MANE-VU Executive Director

444 North Capitol Street, NW ~ Suite 322 ~ Washington, DC 20001

202.508.3840p ~ 202.508.

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May 8, 2018

Bob Martineau
Tennessee Dept. of the Environment and Conservation
312 Rosa L. Parks Avenue
Nashville, TN 37243

Dear Commissioner Martineau;

The MANE-VU members appreciate the feedback, time and effort the participants dedicated for the consultation process. The collaborative effort is not only a Clean Air Act (CAA) requirement but also essential to the success of the program.

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David Foerter, MANE-VU Executive Director

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Mid-Atlantic/Northeast Visibility Union
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May 8, 2018

Bryan Shaw
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, TX 78753

Dear Chairman Shaw;

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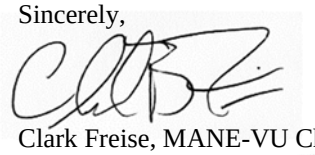

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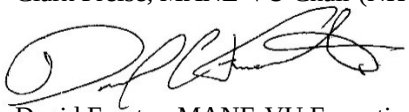

David Foerter, MANE-VU Executive Director

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Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

David Paylor
Virginia Department on Environmental Quality
P.O. Box 10009
Richmond, VA 23240

Dear Director Paylor;

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Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Austin Caperton
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Dear Cabinet Secretary Caperton;

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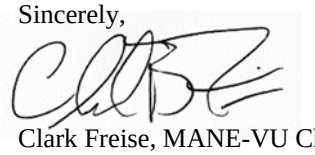

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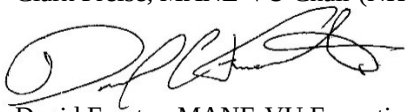

David Foerter, MANE-VU Executive Director

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Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Noah Valenstein
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 30
Tallahassee, FL 32399

Dear Secretary Valenstein;

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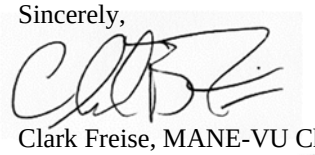

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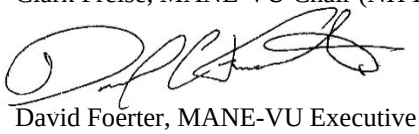

David Foerter, MANE-VU Executive Director

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Mid-Atlantic/Northeast Visibility Union

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Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Alec Messina
Illinois Dept. of Environmental Protection
1021 N. Grand Ave, East
P.O. Box 19276
Springfield, IL 62794

Dear Director Messina;

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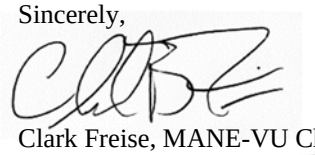

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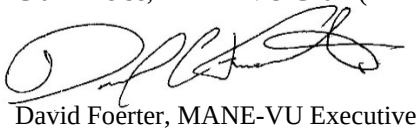

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May 8, 2018

Bruno Pigott
Indiana Dept. of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46204

Dear Commissioner Pigott;

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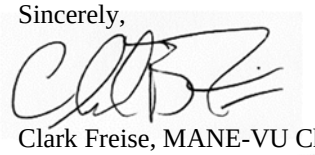

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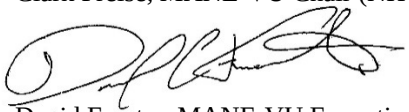

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May 8, 2018

Aaron Keatley
Kentucky Dept. of Environmental Protection
300 Sower Boulevard
Frankfort, KY 40601

Dear Commissioner Keatley;

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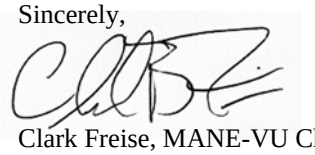

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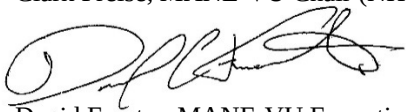

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New Hampshire
New Jersey
New York
Pennsylvania
Penobscot Indian Nation
Rhode Island
St. Regis Mohawk Tribe
Vermont

Nonvoting Members
U.S. Environmental Protection Agency
National Park Service
U.S. Fish and Wildlife Service
U.S. Forest Service

MANE-VU Class I Areas

ACADIA NATIONAL PARK ME

BRIGANTINE WILDERNESS NJ

GREAT GULF WILDERNESS NH

LYE BROOK WILDERNESS VT

MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Chuck Carr Brown
Louisiana Dept. of Environmental Quality
P.O. Box 4301
Baton Rouge, LA 70821

Dear Secretary Brown;

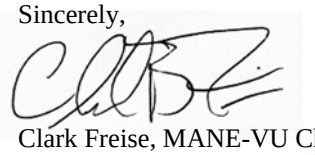
The MANE-VU members appreciate the feedback, time and effort the participants dedicated for the consultation process. The collaborative effort is not only a Clean Air Act (CAA) requirement but also essential to the success of the program.

Written comments were received from eight states and two regional planning organizations. Each of the comments received were carefully considered. MANE-VU has prepared a report documenting the consultation process, the feedback, and the responses. This report will be publicly available on the MANE-VU website, with finalization expected in early May.

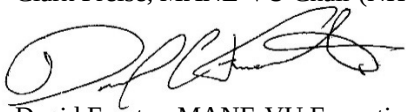
The MANE-VU members were encouraged to find significant common ground and look forward to continuing this collaboration in the next planning cycle. We are appreciative of the general comments and technical updates that states and regional planning organizations provided. Early communication is key in any collaborative effort. This collaboration has yielded improved data, including emissions reductions, to be accounted for in state implementation plans. While the success of this cycle of regional haze planning and implementation is hopeful and rewarding, we all agree the final goal set forth in the Section 169A of the CAA is far from complete. Therefore, continued visibility improvement in this planning period is essential to the final goal. MANE-VU is hopeful this consultation will result in real visibility improvements and thereby continued success.

We look forward to consulting with you during your regional haze state implementation planning process.

Sincerely,



Clark Freise, MANE-VU Chair (NH DES)



David Foerter, MANE-VU Executive Director

444 North Capitol Street, NW ~ Suite 322 ~ Washington, DC 20001

202.508.3840p ~ 202.508.

May 8, 2018

Carol Comer
Missouri Dept. of Natural Resources
1101 Riverside Drive
Jefferson City, MO 65102

Dear Director Comer;

The MANE-VU members appreciate the feedback, time and effort the participants dedicated for the consultation process. The collaborative effort is not only a Clean Air Act (CAA) requirement but also essential to the success of the program.

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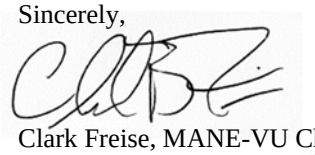
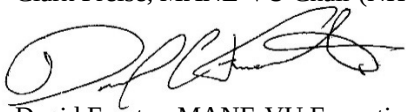


Clark Freise, MANE-VU Chair (NH DES)



David Foerter, MANE-VU Executive Director

444 North Capitol Street, NW ~ Suite 322 ~ Washington, DC 20001

202.508.3840p ~ 202.508.

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Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Michael Regan
North Capitol Dept. of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699

Dear Secretary Regan;

The MANE-VU members appreciate the feedback, time and effort the participants dedicated for the consultation process. The collaborative effort is not only a Clean Air Act (CAA) requirement but also essential to the success of the program.

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We look forward to consulting with you during your regional haze state implementation planning process.

Sincerely,

Clark Freise, MANE-VU Chair (NH DES)

David Foerter, MANE-VU Executive Director

444 North Capitol Street, NW ~ Suite 322 ~ Washington, DC 20001

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Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

May 8, 2018

Craig Butler
Ohio Dept. of Environment Protection
50 West Town Street, Suite 700
Columbus, OH 43216

Dear Director Butler;

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Sincerely,

Clark Freise, MANE-VU Chair (NH DES)

David Foerter, MANE-VU Executive Director

444 North Capitol Street, NW ~ Suite 322 ~ Washington, DC 20001

202.508.3840p ~ 202.508.

Comments by the Texas Commission on Environmental Quality Regarding the Selection of States for Regional Haze Consultation by MANE-VU

1. **The analysis presented to date is not sufficient to identify Texas as a contributing state.** The overarching concern with the analysis used to identify Texas as a contributing state is that it has relied on Q/d, which is intended only as "a highly conservative screening tool" as acknowledged in the "Selection of States for MANE-VU Regional Haze Consultation (2018)" document[1].

   The TCEQ encourages MANE-VU to rely on photochemical grid modeling when identifying contributing states. Because MANE-VU is working towards a 2018 timeline, rather than taking advantage of the extension to 2021, there is no current modeling that Texas is aware of to inform the state contribution analysis. However, there will be such information, potentially for multiple base years from various states/RPO modeling groups, but not in time for a 2018 SIP submission.

   It is also informative to note that CAMx photochemical grid modeling for 2018 conducted by CENRAP for the first phase of Regional Haze planning[2] indicates that Texas sulfate and nitrate contribution to MANE-VU Class I areas is less than 1% of the total for those areas, far below the ~3% contribution indicated by the Q/d analysis. Furthermore, in modeling conducted by MANE-VU for the first planning period, Texas was estimated to contribute 0-0.01% to MANE-VU Class I areas[3].

CENRAP Modeled 2018 Contribution by Texas to MANE-VU Class I Areas	
Class I Area	**Modeled Texas Sulfate and Nitrate Contribution (Percent of Total)**
Brigantine (BRIG1)	0.23 %
Acadia (ACAD1)	0.39 %
Moosehorn (MOOS1)	0.41 %
Lye Brook (LYBR1)	0.62 %
Great Gulf (GRGU1)	0.81 %

   In addition, although EPA did not include tagged data for state contributions, it is useful to note that all MANE-VU Class I areas are below their respective URPs, according to data presented in the draft Guidance[4] and the recently released draft modeling by EPA[5].

2. **The Q/d analysis conducted to date is highly conservative and overstates the impact of contributing states.** The draft Guidance[6] indicates that a state may "use annual emissions in tons divided by distance in kilometers between ***a*** source and the nearest Class I area" [emphasis added], and suggests that a state may generate multiple Q/d estimates and sum them for state totals for a given source category in the context of the four-

[1] http://www.otcair.org/MANEVU/Upload/Publication/Reports/MANE-VU%20Contributing%20State%20Analysis%20Final.pdf
[2] CENRAP PSAT Visualization Tool 2007 www.cenrap.org/projects.asp
[3] http://www.otcair.org/MANEVU/Upload/Publication/Reports/Chapt_1-9--2006.1006.pdf
[4] https://www.epa.gov/visibility/draft-guidance-second-implementation-period-regional-haze-rule
[5] https://www3.epa.gov/ttn/scram/reports/2028_Regional_Haze_Modeling-Transmittal_Memo.pdf
[6] https://www.epa.gov/visibility/draft-guidance-second-implementation-period-regional-haze-rule

factor analysis. However, the guidance does not recommend summing all emissions from all source categories for an entire state, then generating a Q/d using the state centroid. This approach overestimates the impact of the hypothetical "Texas" emissions source. Indeed, the draft guidance indicates that were the emissions distributed geographically, they would likely have a smaller impact on a particular Class I area than when emitted by a hypothetical single point source located at the centroid of the group[7]. Therefore, generating statewide Q/d in the manner employed by MANE-VU likely overestimates the calculated impact of sources in Texas.

The "Selection of States for MANE-VU Regional Haze Consultation (2018)" document[8] indicates that the emissions inventories for 2011 were drawn from the NEIv2. The 2015 emissions inventories were drawn from the state average annual emissions tends calculated by EPA[9], and include mobile categories (as indicated in consultation call I on 10/20/2017). Mobile sources should be considered as a non-controllable source category for the purposes of consultations. The TCEQ recommends that MANE-VU update their analysis to include the 2016 estimates in order to use the most recent information available.

While it is not entirely clear in the "Selection of States for MANE-VU Regional Haze Consultation (2018)" document how the Q/d was estimated, it appears that MANE-VU has used wind direction sectors from the NESCAUM 2006 analysis[10]. If this is the case, then this approach is unreliable for Texas. The wind direction sectors, or Ci's, were derived from CALPUFF modeling and, as indicated in the "Selection of States for MANE-VU Regional Haze Consultation (2018)" document, are unreliable for Texas and should be excluded from the analysis.

In addition, assuming 100% of the emitted SO_2 and NO_x are converted to sulfate and nitrate (respectively) overstates the amounts of these species that reach MANE-VU Class I areas. For nitrate impacts the overestimation is greater than it is for sulfate because, as ammonium nitrate is transported, it dissociates into ammonia and nitric acid, and the nitric acid deposits readily.

Finally, the analysis used a Q/d for nitrate that was derived by series of ratios: (A) 2015 to 2011 statewide emissions and (B) nitrate to sulfate ratio taken from CALPUFF results for the surrogate state of Arkansas. It is not clear from the documentation why Arkansas was selected as a surrogate for Texas. It is also not clear why a ratio/surrogate approach was used rather than conducting a Q/d analysis for NO_x.

3. **The HYSPLIT trajectories on the 20% most impaired days do not appear to support the Q/d analysis identifying Texas sources as impairing visibility in MANE-VU Class I areas.** Table 8 shows that frequency of trajectories emanating from Texas range from 0.000 to less than 0.74%, indicating that Texas is not likely to significantly contribute to the identified Class I areas on the 20% most impaired days.

[7] in the context of BART
[8] http://www.otcair.org/MANEVU/Upload/Publication/Reports/MANE-VU%20Contributing%20State%20Analysis%20Final.pdf
[9] https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data
[10] http://www.nescaum.org/documents/contributions-to-regional-haze-in-the-northeast-and-mid-atlantic--united-states/mane-vu_haze_contribution_asessment--2006-0831.pdf/

As a technical matter, the MANE-VU analysis used 500 meter trajectories, without clarifying whether this height is adequate to exclude trajectories that touch the ground or whether the analysis excluded such trajectories. The analysis should also present higher altitude trajectories (e.g. 1000 and 1500 meters) to verify whether the 500 meter height is representative

4. **Texas continues to have concerns with using 2011 for Regional Haze work, because 2011 is not representative of typical meteorology for Texas.** 2011 was the worst drought year recorded in Texas since at least 1895. Texas, Oklahoma, New Mexico and Louisiana experienced the hottest summer in 117 years (1895-2011), while the entire Southeast and southern portions of the Midwest and Arizona were exceptionally hot and it had much more wildfire than is typical. While any single year will show local meteorological anomalies, for Texas, 2011 is more uncertain than usual because of the atypical meteorological conditions and fires in Texas and surrounding states.

5. **Texas requests that MANE-VU consider changes to facilities that will significantly impact the contribution results for Texas.** While the TCEQ disputes the claim that Texas impacts visibility in the MANE-VU states, several shutdowns of Texas coal-fired power plants have been announced which will result in significant emission reductions in 2018[11]. The table below shows the specific units and the actual or announced shut down date, as well as the 2016 emissions from these units.

Facility Name	Facility ID (ORISPL)	Unit ID	2016 SO_2 Emissions (tons)	2016 NOx Emissions (tons)	County	Shutdown or Expected Shutdown
Big Brown	3497	1	21,532.3	2,276.8	Freestone	February 12, 2018
Big Brown	3497	2	20,937.6	2,243.2	Freestone	February 12, 2018
Site Total			*42,469.9*	*4,520.0*		
J T Deely	6181	1	3,569.4	643.1	Bexar	December 2018
J T Deely	6181	2	4,055.6	637.9	Bexar	December 2018
Site Total			*7,625.0*	*1,281.0*		
Monticello	6147	1	8,834.6	1,537.1	Titus	January 4, 2018

[11] These companies have not withdrawn their permits as of this date.

Monticello	6147	2	8,716.3	1,526.1	Titus	January 4, 2018
Monticello	6147	3	7,407.4	2,881.2	Titus	January 4, 2018
Site Total			*24,958.3*	*5,944.4*		
Sandow	6648	4	12,105.3	1,465.5	Milam	January 11, 2018
Site Total			*12,105.3*	*1,465.5*		
Sandow Station	52071	5A	1,116.9	740.9	Milam	January 11, 2018
Sandow Station	52071	5B	1,146.4	770.1	Milam	January 11, 2018
Site Total			*2,263.4*	*1,511.0*		
Total All Sites			**89,421.9**	**14,721.8**		

In addition to the planned shutdowns listed above, the U.S. EPA has signed pending consent decrees with carbon black facilities that will result in thousands of tons of reductions in SO_2 and NO_x by 2021.

United States Department of the Interior

NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, CO 80225-0287

N3615 (2350)

TRANSMITTED VIA ELECTRONIC MAIL - NO HARDCOPY TO FOLLOW

April 12, 2018

Joseph Jakuta
Ozone Transport Commission/Mid-Atlantic/Northeast Visibility Union
444 North Capitol Street NW #322
Washington, DC 20001

Dear Mr. Jakuta:

Thank you for the opportunity to comment on the Mid-Atlantic/Northeast Visibility Union (MANE-VU)'s draft Statement of its planned course of action for assuring reasonable progress for the second regional haze implementation period (2018-2028).

Over the past 18 months, MANE-VU has completed a contribution assessment, developed a request for its member states to consider specific control measures as part of the second regional haze state implementation plans (MANE-VU Ask), and consulted with Federal Land Managers and neighboring states concerning the MANE-VU Ask. Our understanding is that individual MANE-VU states are still developing their processes to define which sources will be evaluated for continued visibility improvement in the Class I areas in MANE-VU states.

Because we could not determine which specific sources that the MANE-VU states will be evaluating, we compiled the attached list of sources that may impact Acadia, Mammoth Cave, or Shenandoah National Parks using a simple screening metric. We ask that the states review and consider these sources for inclusion in their long term strategies.

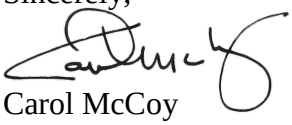
In addition to these major sources, we urge the states with oil and gas point or area source emissions to evaluate oil and gas emission trends and potential for emissions reductions as part of their long term strategy for 2028.

We would like to discuss this further with the MANE-VU Technical Support Committee and the states in the near future. We also would like to learn more about how the screening process in the MANE-VU Ask corresponds with EPA's 2016 Draft Guidance on Progress Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional

Haze State Implementation Plans for the Second Implementation Period (see especially guidance on page 72, in Section 6.3 of that document).

We look forward to working with MANE-VU on this important program for reducing regional haze affecting Class I national parks and wilderness areas. Pat Brewer (303-969-2153 or patricia_f_brewer@nps.gov) of my staff will be following up with you to set up a call.

Sincerely,



Carol McCoy
Chief, Air Resources Division

cc:
Rob Sliwinski, New York Department of Environmental Conservation and MANE VU Technical Support Committee Chair

ATTACHMENT

Screening Metric

EPA's draft guidance allows use of emissions divided by distance (Q/d) as a surrogate for a modeling analysis to estimate impact. We first summed 2014 NEI NOx + PM_{10} + SO_2 + SO_4 at a given facility and divided by distance to a specified NPS Class I area. Airports and rail yards were deleted because these mobile sources are not regulated by states. For EGUs with significant Q/d values, we used 2017 CAM data to adjust for changes in emissions since 2014. We also deleted facilities that either had shut down since 2014 or had committed to shut down during the next planning period. To estimate the impact of MANE-VU facilities, we summed the Q/d values across all MANE-VU states relative to ACAD, MACA, and SHEN, ranked the Q/d values relative to each Class I area, created a running total, and identified those facilities contributing to 80% of the total impact at each NPS Class I area. We applied a similar process to facilities in ME relative to ACAD. We merged the resulting lists of facilities and sorted them by their states. Although the numbers of facilities identified for most states were not excessive, we observed that the totals for NY and PA could be considered burdensome. To address this problem, we suggest that a state consider those facilities comprising 80% of the Q/d total, not to exceed the 25 top-ranked facilities.

Connecticut

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
754311	PSEG PWR CT LLC/BPT HARBOR STA	1,530	487	3.1	ACAD
754411	WHEELABRATOR BRIDGEPORT LP	1,409	489	2.9	ACAD
715611	C R R A / MID-CONNECTICUT	821	412	2.0	ACAD
715711	MIDDLETOWN POWER LLC	547	421	1.3	ACAD
643411	PSEG FOSSIL LLC/ POWER CT LLC	486	461	1.1	ACAD
754611	COVANTA SOUTHEASTERN CT CO	417	397	1.1	ACAD
8501611	WHEELABRATOR LISBON INC (WM)	327	386	0.8	ACAD
2706711	ALGONQUIN GAS TRANSMISSION (Cromwell)	317	421	0.8	ACAD
588711	COVANTA BRISTOL, INC	300	436	0.7	ACAD

District of Columbia

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
2701211	U.S. GSA Central Heating and Refrigeration Plant	258	101	2.5	SHEN

Delaware

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
588311	Delaware City Refinery	2,730	233	11.7	SHEN
640911	INDIAN RIVER GENERATING STATION	709	260	2.7	SHEN

Massachusetts

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
8127611	SEMASS PARTNERSHIP	1,616	301	5.4	ACAD
7869811	WHEELABRATOR MILLBURY INC	1,257	322	3.9	ACAD
7947211	WHEELABRATOR NORTH ANDOVER INCORPORATED	865	245	3.5	ACAD
8167211	WHEELABRATOR SAUGUS INC	709	256	2.8	ACAD
7236411	SOLUTIA INC	984	376	2.6	ACAD
6622811	MM TAUNTON ENERGY LLC	674	305	2.2	ACAD
7259211	ARDAGH GLASS INC	383	313	1.2	ACAD
7887011	MEDICAL AREA TOTAL ENERGY PLANT	325	273	1.2	ACAD
5979211	STONY BROOK ENERGY CENTER	298	372	0.8	ACAD
7764911	GENERAL ELECTRIC AIRCRAFT ENGINES	191	256	0.7	ACAD

Maryland

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7763811	Luke Paper Company	20,159	160	126.3	SHEN
6084311	Raven Power Fort Smallwood LLC	16,848	147	114.8	SHEN
8200011	Lehigh Cement Company - Union Bridge	3,026	114	26.6	SHEN
7931411	Holcim (US), Inc.	2,028	93	21.8	SHEN
7717711	AES Warrior Run	1,844	89	20.8	SHEN
6011511	NRG Morgantown Generating Station	2,517	123	20.4	SHEN
5155011	C.P. Crane LLC	3,248	258	12.6	SHEN
6011911	NRG Chalk Point, LLC	1,732	138	12.6	SHEN
5998011	NRG Dickerson Generating Station	724	71	10.2	SHEN
5857411	Wheelabrator Baltimore, LP	1,413	141	10.0	SHEN
7719011	Montgomery County RRF	551	71	7.7	SHEN
6117011	Naval Support Facility, Indian Head	387	96	4.0	SHEN

Maine

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
8200111	SAPPI - SOMERSET	3,476	107	32.5	ACAD
8028411	DRAGON PRODUCTS CO - THOMASTON	1,157	41	28.3	ACAD
8026411	CATALYST PAPER OPERATIONS INC. - RUMFORD	2,829	161	17.6	ACAD
5974211	WOODLAND PULP LLC	1,482	102	14.6	ACAD
7764711	VERSO PAPER - ANDROSCOGGIN MILL	1,803	136	13.2	ACAD
5760811	PENOBSCOT ENERGY RECOVERY CO	481	53	9.1	ACAD
7946611	S D WARREN CO - WESTBROOK	901	141	6.4	ACAD
5823511	FPL ENERGY WYMAN LLC	567	124	4.6	ACAD
5222111	MID MAINE WASTE ACTION CORP	302	129	2.3	ACAD
5223011	REENERGY LIVERMORE FALLS LLC	209	129	1.6	ACAD
7719211	MAINE INDEPENDENCE STATION	130	90	1.4	ACAD
5974111	COVANTA - JONESBORO	126	115	1.1	ACAD
7718411	COVANTA WEST ENFIELD	126	138	0.9	ACAD
8240811	LINCOLN PAPER AND TISSUE, LLC	134	151	0.9	ACAD
5676911	REENERGY STRATTON LLC	164	188	0.9	ACAD
8028611	WESTBROOK ENERGY CENTER	105	144	0.7	ACAD

New Hampshire

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7287811	PSNH - SCHILLER STATION	389	200	2.0	ACAD
7301111	WHEELABRATOR CONCORD COMPANY LP	411	249	1.7	ACAD
7758711	MONADNOCK PAPER MILLS INC	206	287	0.7	ACAD
17167211	BURGESS BIOPOWER	146	207	0.7	ACAD
7513011	APC PAPER COMPANY INC	209	305	0.7	ACAD

New Jersey

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
7989011	CARNEYS POINT GENERATING PLANT	1,968	249	7.9	SHEN
8093811	Logan Generating Plant	1,224	259	4.7	SHEN
7201311	Paulsboro Refining Company LLC	975	273	3.6	SHEN
7903711	Phillips 66 Bayway Refinery	1,215	390	3.1	SHEN
8177011	Covanta Essex Company	887	402	2.2	SHEN
7392311	PSEG Bergen Generating Station	665	564	1.2	ACAD
7906111	Union County Resource Recovery Facility	649	597	1.1	ACAD
7990011	Cogen Technologies Linden Venture, L.P.	499	592	0.8	ACAD
6719711	NORTH JERSEY ENERGY ASSOC A LP	470	614	0.8	ACAD
7474911	PSEG FOSSIL LLC MERCER GENERATING STATION	480	658	0.7	ACAD

Rhode Island

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
5486911	DOMINION ENERGY MANCHESTER STREET, INC.	231	331	0.7	ACAD

New York

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
17052711	Red-Rochester LLC At Eastman Business Park	12,708	478	26.6	SHEN
8105211	LAFARGE BUILDING MATERIALS INC	6,874	543	12.7	SHEN
8121711	NORTHPORT POWER STATION	3,009	515	5.8	ACAD
7991711	INTERNATIONAL PAPER TICONDEROGA MILL	2,097	380	5.5	ACAD
8325211	FINCH PAPER LLC	2,055	408	5.0	ACAD
7968211	ALCOA MASSENA OPERATIONS (WEST PLANT)	2,883	724	4.0	SHEN
7814711	MORTON SALT DIV	1,590	416	3.8	SHEN
7822211	ANCHOR GLASS CONTAINER CORP	1,298	374	3.5	SHEN
7805611	DUNKIRK STEAM GENERATING STATION	1,282	409	3.1	SHEN
7210211	GUARDIAN GENEVA FLOAT GLASS FACILITY	1,251	453	2.8	SHEN
7994011	CON ED-EAST RIVER GENERATING STATION	1,106	413	2.7	SHEN
8175411	BOWLINE POINT GENERATING STATION	1,322	535	2.5	ACAD
7417811	AES SOMERSET LLC	1,209	494	2.4	SHEN
8123611	WHEELABRATOR WESTCHESTER LP	1,071	447	2.4	SHEN
7417011	COVANTA NIAGARA LP	1,092	468	2.3	SHEN
7993311	HEMPSTEAD RESOURCE RECOVERY FACILITY	1,014	442	2.3	SHEN
8325311	LEHIGH NORTHEAST CEMENT COMPANY	919	407	2.3	ACAD
8309011	RAVENSWOOD GENERATING STATION	940	417	2.3	SHEN
8542611	AES CAYUGA	955	430	2.2	SHEN
7221611	EF BARRETT POWER STATION	1,090	558	2.0	ACAD
8427811	ROSETON GENERATING STATION	948	512	1.9	ACAD
7982311	ASTORIA GENERATING STATION	811	561	1.4	ACAD
7981511	PORT JEFFERSON POWER STATION	581	497	1.2	ACAD
7416911	GLOBE METALLURGICAL INC	978	842	1.2	ACAD
8104811	BLACK RIVER GENERATION LLC	583	569	1.0	ACAD
7844111	ARTHUR KILL GENERATING STATION	593	594	1.0	ACAD
8035411	TGP COMPRESSOR STATION 245	535	541	1.0	ACAD
8322311	NORTHEAST SOLITE CORPORATION	446	484	0.9	ACAD
7209911	GENERAL CHEMICAL LLC	536	617	0.9	ACAD
7982011	ONONDAGA CO RESOURCE RECOVERY FACILITY	510	612	0.8	ACAD
7804411	OWENS-BROCKWAY GLASS CONTAINER INC	505	648	0.8	ACAD
7995311	CON ED-74TH STREET STA	418	565	0.7	ACAD
7986111	CON ED-59TH ST STA	408	567	0.7	ACAD
8123211	HUNTINGTON RESOURCE RECOVERY FACILITY	371	515	0.7	ACAD
8107511	REVERE SMELTING & REFINING CORP	385	545	0.7	ACAD
8539211	INDEPENDENCE STATION	444	629	0.7	ACAD
7800811	OWENS-CORNING INSULATING SYSTEMS- FEURA BUSH	313	451	0.7	ACAD
7980511	OSWEGO HARBOR POWER	432	636	0.7	ACAD
7801111	SELKIRK COGENERATION PROJECT	304	451	0.7	ACAD

Pennsylvania

EIS ID	Facility Name	Q	Distance to NPS Class I Area	Q/d	NPS Class I Area
3866111	GENON NE MGMT CO/KEYSTONE STA	31,020	217	143.2	SHEN
3005211	HOMER CITY GEN LP/ CENTER TWP	13,925	196	70.9	SHEN
2905911	GENON NE MGMT CO/CONEMAUGH PLT	12,422	179	69.5	SHEN
3005111	NRG WHOLESALE GEN/SEWARD GEN STA	8,946	180	49.7	SHEN
8204511	USS/CLAIRTON WORKS	6,269	211	29.8	SHEN
4952111	MAGNESITA REFRACTORIES/YORK	4,568	164	27.8	SHEN
3881111	MONTOUR LLC/MONTOUR SES	7,557	272	27.7	SHEN
6594511	CAMBRIA COGEN CO/EBENSBURG	4,377	178	24.6	SHEN
6463511	PPG IND INC/WORKS NO 6	3,230	161	20.1	SHEN
9248211	TEAM TEN/TYRONE PAPER MILL	3,216	196	16.4	SHEN
8404811	NRG MIDWEST LP/CHESWICK	3,410	226	15.1	SHEN
7872711	APPVION INC/SPRING MILL	1,527	159	9.6	SHEN
3881611	HERCULES CEMENT CO LP/STOCKERTOWN	3,085	322	9.6	SHEN
6652211	PHILA ENERGY SOL REF/ PES	2,675	280	9.5	SHEN
7409311	USS CORP/EDGAR THOMSON WORKS	1,969	217	9.1	SHEN
8406511	SCHUYLKILL ENERGY RES/ST NICHOLAS COGEN	2,360	273	8.6	SHEN
6594311	EBENSBURG POWER CO/EBENSBURG COGENERATION PLT	1,500	177	8.5	SHEN
6651211	ESSROC/NAZARETH LOWER CEMENT PLT I II III	2,535	319	7.9	SHEN
6603511	PITTSBURGH GLASS WORKS/MEADVILLE WORKS 8	2,639	337	7.8	SHEN
6597611	LEHIGH CEMENT CO LLC/EVANSVILLE CEMENT PLT & QUARRY	1,997	262	7.6	SHEN
7409411	US STEEL CORP/IRVIN PLT	1,529	214	7.1	SHEN
6582211	KEYSTONE PORTLAND CEMENT/EAST ALLEN	2,212	312	7.1	SHEN
4737311	SUNBURY GENERATION LP/SUNBURY SES	1,640	243	6.7	SHEN
8219711	COVANTA DELAWARE VALLEY LP/DELAWARE VALLEY RES REC	1,676	261	6.4	SHEN
3186811	PA STATE UNIV/UNIV PARK CAMPUS	1,293	210	6.1	SHEN
4760211	SCRUBGRASS GENERATING CO LP/KENNERDELL PLT	1,621	295	5.5	SHEN
6595211	KIMBERLY CLARK PA LLC/CHESTER OPR	1,409	265	5.3	SHEN
7889111	GRAYMONT PA INC/PLEASANT GAP, CON-LIME & BELLEFONTE PLTS	1,179	223	5.3	SHEN
6582111	INTL WAXES INC/FARMERS VALLEY	1,637	328	5.0	SHEN
4105111	GILBERTON POWER CO/JOHN B RICH MEM POWER STA	1,210	269	4.5	SHEN
6559611	DOMTAR PAPER CO/JOHNSONBURG MILL	1,269	289	4.4	SHEN
4966711	UNITED REFINING CO/WARREN PLT	1,376	333	4.1	SHEN
8330811	ARCELORMITTAL MONESSEN LLC/MONESSEN COKE PLT	795	200	4.0	SHEN
3881711	MARTINS CREEK LLC/MARTINS CREEK	1,255	337	3.7	SHEN
6580811	ARMSTRONG CEMENT & SUPPLY/WINFIELD	900	245	3.7	SHEN
7889011	PANTHER CREEK POWER OPR LLC/NESQUEHONING	1,066	293	3.6	SHEN
7874511	MONROE ENERGY LLC/TRAINER	947	261	3.6	SHEN
8331411	WHEELABRATOR FRACKVILLE/MOREA PLT	953	270	3.5	SHEN
6581211	LANCASTER CNTY RRF/ LANCASTER	616	185	3.3	SHEN
3762011	MT CARMEL COGEN/CULM FIRED COGEN PLT	827	258	3.2	SHEN
2989611	GUARDIAN IND CORP/JEFFERSON HILLS	667	209	3.2	SHEN
7407611	SHENANGO INC/SHENANGO COKE PLT	747	238	3.1	SHEN
8220011	WHEELABRATOR FALLS INC/FALLS TWP	946	325	2.9	SHEN
4843611	COVANTA PLYMOUTH RENEWABLE ENERGY/ PLYMOUTH	812	280	2.9	SHEN
7991611	ALLEGHENY LUDLUM LLC/BRACKENRIDGE	643	229	2.8	SHEN
6532511	AMER REF GROUP/BRADFORD	951	341	2.8	SHEN

4120011	YORK CNTY SOLID WASTE/YORK CNTY RESOURCE RECOVERY	451	175	2.6	SHEN
6621911	LAFARGE CORP/WHITEHALL PLT	759	303	2.5	SHEN
8141411	JEWEL ACQUISITION/MIDLAND FAC	668	271	2.5	SHEN
4952011	PROCTER & GAMBLE PAPER PROD CO/MEHOOPANY	832	347	2.4	SHEN
3020711	OWENS-BROCKWAY GLASS CONTAINER INC/CRENSHAW PLT 19	592	263	2.2	SHEN
8141311	AES BEAVER VALLEY LLC/BEAVER VALLEY LLC	586	267	2.2	SHEN
2990311	ALLEGHENY ENERGY SUPPLY/SPRINGDALE	491	225	2.2	SHEN
3884311	CARMEUSE LIME INC/MILLARD LIME PLT	454	211	2.2	SHEN
3892811	AK STEEL CORP/BUTLER WORKS	554	259	2.1	SHEN
6558911	NORTHAMPTON GEN CO/NORTHAMPTON	769	671	1.1	ACAD
4735811	WESTWOOD GEN LLC/GEN STA	644	743	0.9	ACAD

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LYE BROOK WILDERNESS VT

MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Director Lance LeFleur
Alabama Department of Environmental Management
1400 Colesium Blvd.
Montgomery, AL 36110

Dear Director LeFleur,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

All States, regardless of whether they are home to a Class I area, must prepare a State Implementation Plan (SIP) for Regional Haze by July 31, 2021 to meet the United States Environmental Protection Agency (EPA) rules implementing Section 169A of the Clean Air Act (40 CFR 51.300). This Regional Haze SIP must demonstrate that reasonable progress towards improved visibility at the nearby Class I areas will be made by certain milestone years. The milestone year for the second planning period is 2028. The regulations at 40 CFR 51.308 require States with Class I areas to develop reasonable progress goals in consultation with any State that may reasonably cause or contribute to visibility impairment in the Class I area. The Mid-Atlantic/Northeast Visibility Union (MANE-VU) coordinates regional haze planning activities for the mid-Atlantic and northeast states and tribes. This letter is part of MANE-VU's consultation process for improving visibility.

For the purpose of establishing reasonable progress goals for the second Regional Haze SIP, MANE-VU has identified several States, including all MANE-VU member states, that may reasonably contribute to visibility impairment at MANE-VU Class I areas. The list of States identified for inclusion in the consultation process is in the attached Table 1.

MANE-VU is seeking your consultation to exchange information and analyses with regard to visibility issues at MANE-VU Class I areas in Maine, New Jersey, New Hampshire and

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

We invite you to join our upcoming State-to-State consultation meetings. These meetings are intended to comply with the consultation requirements specified in the Clean Air Act (40 CFR Part 51), and are in accordance with the MANE-VU Inter-Regional Planning Organization (RPO) Consultation Framework.

Our goal for these consultation meetings is to exchange information and analyses with regard to visibility issues in MANE-VU Class I areas, and to review the control strategies MANE-VU is pursuing (i.e., the MANE-VU Inter-RPO "Ask"). We invite your state to share your analyses and to provide feedback on comments regarding the MANE-VU Inter-RPO Ask.

MANE-VU states intend to submit Regional Haze SIPs by July 31, 2018. We anticipate that this date may be ahead of your goals and planning schedule but would appreciate your early consultation at this time and we believe it will be advantageous to you by expanding time for your state's planning and implementation.

MANE-VU proposes to host a series of three webinar meetings to allow for information exchange and policy discussion. Additional consultation sessions can be scheduled as needed prior to the policy discussion session.

1. Inter-RPO Consultation #1 - Introduction, overview and initial discussion (Air Director and technical staff)
2. Inter-RPO Consultation #2 – State presentations and discussion of issues (Air Director and technical staff)
3. Inter-RPO Consultation #3 – Review and policy discussion (Commissioner/Secretary and Air Director)

These consultation webinars are intended for the participation of all states and tribal nations located within the state borders of the states included in the table below. We also welcome the participation of the multi-jurisdictional agencies that represent the invited states and tribal nations, as well as representatives from the U.S. Environmental Protection Agency and the Federal Land Manager agencies.

MANE-VU Class 1 Area States (Maine, New Hampshire, New Jersey and Vermont) request consultation with:

Alabama	Illinois	Missouri	Tennessee
Connecticut*	Kentucky	New York*	Texas
Delaware*	Louisiana	North Carolina	Virginia
District of Columbia*	Maryland*	Ohio	West Virginia
Florida	Massachusetts*	Pennsylvania*	
Indiana	Michigan	Rhode Island*	

** MANE-VU State*

Consultation meeting dates, agendas, and discussion materials will be coordinated through the RPO leads and will be circulated prior to each consultation.

On behalf of MANE-VU, I look forward to working with you in an informative and productive consultation process of that yields mutually beneficial results.

Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Ron Gore

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

Via Electronic Mail

January 19, 2018

Mr. David Foerter, Executive Director
Mid-Atlantic/Northeast Visibility Union/Ozone Transport Commission
444 North Capitol Street, NW – Suite 322
Washington, DC 20001
Email: dfoerter@otcair.org

Re: Florida Department of Environmental Protection's Comments on the Mid-Atlantic/Northeast Visibility Union (MANE-VU) "Ask" to States Concerning a Course of Action Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028)

Dear Mr. Foerter:

As you are aware, on August 25, 2017, the Mid-Atlantic/Northeast Visibility Union (MANE-VU), requested that the Florida Department of Environmental Protection (Department) implement certain emission reduction measures under the federal Regional Haze Rule (40 CFR 51.308 (f)(2)(iii)) as MANE-VU's analysis found that Florida was a contributing state to visibility impairment at the Acadia National Park Class I Area. Specifically, the Ask requested that the Department consider a variety of "emission management" strategies that MANE-VU considers necessary to meet its Class I area reasonable progress goals in the Regional Haze Rule. Florida was one of 36 states in the Eastern half of the continental US that were analyzed for inclusion in the Ask by the MANE-VU Technical Support Committee.

While the Department recognizes its obligation to consult with other states to develop coordinated emission management strategies to make reasonable progress toward visibility goals in Class I areas outside of the State, we disagree with MANE-VU's conclusion that Florida is a contributing state. The Department appreciates the opportunity to provide the following comments that bring into question whether emissions from Florida can be "reasonably anticipated to contribute to visibility impairment" in any MANE-VU Class I area.[1]

[1] *See* 40 C.F.R 51.308(f)(2)(ii)

Application of Q/d Screening

Florida was selected for inclusion in the Ask based on a Q/d analysis where estimated 2015 statewide emissions of NO_x and SO_2 in tons (Q) were divided by the distance from the population centroid of Florida to each of the MANE-VU Class I areas in kilometers (d). MANE-VU chose a 2.0% contribution threshold to screen states in or out. Florida's contribution was below 2.0% for all areas except Acadia National Park which was calculated at 2.1% of the total impact. Given this very small exceedance of the 2.0% threshold, even small emissions reductions would bring the State below this threshold.

Statewide emissions of SO_2 from stationary sources, as determined through facility Annual Operating Reports, decreased approximately 24% from 2015 to 2016. NO_x emissions from both on-road mobile and stationary sources decreased approximately 9% over the same period. The Department expects to see similar annual decreases for the period 2017-2019 due to a variety of emissions reduction projects and unit retirements occurring at many of the State's largest emissions sources.

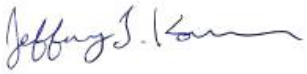
Furthermore, while Q/d is a common screening tool used across a variety of air quality applications, there are limits to its usefulness. In many cases, the correlation between Q/d and visibility impacts decrease with increasing distance.

Back Trajectory Analysis

MANE-VU utilized NOAA's HYSPLIT model to determine the source of emissions on the 20% most impaired days in each Class I area for 2002, 2011, and 2015. The results were used as a "qualitative opportunity to cross check the reasonability for including states." In other words, the trajectory analysis was used to determine the possibility that emissions from a state could be transported to a MANE-VU Class I area. In Acadia National Park, the only Class I area that Florida was tied to, 0.01% of all trajectories on the 20% most impaired days in 2015 passed over Florida. This is a very insignificant number and brings into question the likelihood of Florida emissions impacting a Class I area over 1,800 kilometers away. The lack of back trajectories over Florida also emphasizes the limits of the Q/d analysis, as described above.

In sum, the Department does not believe that the Q/d analysis is appropriate for Florida with regard to such distant areas. In addition, the 2.0% threshold is not justified. The Department does not believe emissions from Florida can be "reasonably anticipated to contribute to visibility impairment" in any MANE-VU Class I area. If you have any questions about these comments, please contact Hastings Read at (850) 717-9017 or by email at Hastings.Read@dep.state.fl.us.

Sincerely,



Jeffery F. Koerner, Director
Division of Air Resource Management

JFK/tl

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ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Secretary Noah Valenstein
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 30
Tallahassee, FL 32399

Dear Secretary Valenstein,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Jeff Koerner

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ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Director Alec Messina
Illinois Department of Environmental Protection
1021 N. Grand Ave, East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Director Messina,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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** MANE-VU State*

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On behalf of MANE-VU, I look forward to working with you in an informative and productive consultation process of that yields mutually beneficial results.

Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Julie Armitage

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MANE-VU Class I Areas

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GREAT GULF WILDERNESS NH

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MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Commissioner Bruno Pigott
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46204-2251

Dear Commissioner Pigott,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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For the purpose of establishing reasonable progress goals for the second Regional Haze SIP, MANE-VU has identified several States, including all MANE-VU member states, that may reasonably contribute to visibility impairment at MANE-VU Class I areas. The list of States identified for inclusion in the consultation process is in the attached Table 1.

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Keith Baugues

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Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Commissioner Aaron Keatley
Kentucky Department of Environmental Protection
300 Sower Boulevard
Frankfort, KY 40601

Dear Commissioner Keatley,

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Sean Alteri

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Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Secretary Chuck Carr Brown
Louisiana Department of Environmental Quality
P.O. Box 4301
Baton Rouge, LA 70821-4303

Dear Secretary Carr Brown,

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Tegan Blades Treadway

LAKE MICHIGAN AIR DIRECTORS CONSORTIUM
9501 W. Devon Ave., Suite 701 Rosemont, IL 60018
Phone: 847-720-7880 Fax: 847-720-7891

December 20, 2017

David Foerter
Ozone Transport Commission and MANE-VU
444 N. Capital St. NW
Washington DC 20001

Subject: MANE-VU Regional Haze Consultative Process

Dear Mr. Foerter,

LADCO appreciates the information that the MANE-VU staff and member states have presented as part of your regional haze consultative process. After a series of discussions with the states in our region, LADCO has identified technical details in your analyses that we feel warrant further consideration by MANE-VU.

LADCO submits the following comments in response to your request for technical feedback on the analyses used to support the MANE-VU regional haze consultative process.

1. LADCO disagrees with your choice of the base year inventory used for your Q/d analysis. As this inventory is not the best estimate of contemporary emissions conditions in our region, it is not appropriate for use in emissions source impact assessments pursuant to the current round of Regional Haze Rule (RHR) SIPs. While we recognize your use of the 2015 electricity generating unit (EGU) emissions data from the EPA Clean Air Markets Division (CAMD), data quality issues in the raw CAMD data[1] make these data unsuitable for use in air quality impact assessments. Further, the remaining inventory sectors used in the MANE-VU screening analyses do not reflect the best available estimate of emissions in the LADCO states. LADCO feels that by neglecting to use the best available emissions information in your screening analyses, MANE-VU produced impact assessments that do not accurately characterize the regional haze impacts of LADCO sources on receptors in the MANE-VU region.
2. The 2018 inventory projections used in the MANE-VU Q/d*C contribution assessment do not reflect the best available future year projections for large point sources. Significant shifts in the energy and industrial sectors have occurred since the development of the data used in MANE-VU's analyses. The 2018 emissions data used for MANE-VU's Q/d contribution assessment do not reflect the current state of knowledge of future year emissions for sources in the LADCO region.

[1] https://www.epa.gov/ttn/chief/conference/ei20/session5/zadelman_pres.pdf

LAKE MICHIGAN AIR DIRECTORS CONSORTIUM
9501 W. Devon Ave., Suite 701 Rosemont, IL 60018
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Considering these comments, LADCO does not agree with the impact assessment results drawn from MANE-VU's Q/d and CALPUFF screening analyses. Given the amount of effort that would be required of the implicated agencies in our region to fully address the MANE-VU "ask," LADCO feels that it is reasonable to request that MANE-VU integrate our recommendations for data to use in your regional haze screening analyses.

LADCO respectfully recommends that MANE-VU take the following steps to improve the identification of LADCO sources to be considered in MANE-VU's long-term strategy for regional haze:

1. Use the U.S. EPA 2011 NEI, version 6.3 (modeling case 2011en)[2] for the non-EGU, base year emissions for states in the LADCO region.
2. Use ERTAC EGU version 2.7 for the base and future year EGU emissions for states in the LADCO region. We recommend using ERTAC EGU over the raw CAMD data for the base year because of the quality assurance and data scrubbing capabilities included in the software for improving the EGU emissions estimates.

Finally, LADCO encourages the MANE-VU states to reconsider the decision to pass on the extension of the current regional haze planning period. As the rest of the country collectively plans for the 2021 RHR SIPs, new data (see the 2016 Inventory Collaborative), more modern decision support tools, new data analysis approaches, and opportunities to collaborate will emerge that will benefit MANE-VU's pursuit of your regional haze goals.

LADCO appreciates the opportunity to provide feedback on your consultative process and we welcome further discussion with MANE-VU on our comments and recommendations.

Sincerely,

Zachariah Adelman
LADCO Executive Director

[2] https://www.epa.gov/air-emissions-modeling/additional-updates-2011-and-2023-emissions-version-63-platform-technical

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Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Director Carol Comer
Missouri Department of Natural Resources
1101 Riverside Drive
Jefferson City, MO 65102

Dear Director Comer,

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MANE-VU/OTC

Cc: Kyra Moore

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

FEB 2 3 2018

Mr. Dave Foerter
Director
Mid-Atlantic/Northeast Visibility Union
444 North Capitol Street, NW- Suite 322
Washington, DC 20001

Re: August 25, 2017, "Asks" for Emission Reduction Measures Related to Regional Haze

Dear Mr. Foerter:

The purpose of this letter is to respond to Mid-Atlantic/Northeast Visibility Union's (MANE-VU) August 25, 2017, document which outlined emission reduction measures identified by MANE-VU Class I states as being necessary to make reasonable progress in MANE-VU Class I areas. MANE-VU references these emission reduction measures as "Asks". The Missouri Department of Natural Resources' Air Pollution Control Program appreciates the opportunity to review the Asks.

MANE-VU has identified Missouri, along with other states, as contributing to visibility impairment at MANE-VU Class I areas located in Maine, New Jersey, New Hampshire and Vermont based on analyses using 2011 and 2015 emissions data. MANE-VU is asking contributing states to consider five specific "emissions management" strategies in state's SIPs for the second planning period and to address the inclusion or exclusion of these measures in final control strategies. Since Missouri does not have a source with "the potential for 3.0 Mm-1 or greater visibility impacts at any MANE-VU Class I area", only four of the five Asks would apply to Missouri sources. These Asks specifically outline requirements that MANE-VU views as reasonable and cost-effective NO_x and SO_2 control measure for a future Missouri control strategy.

As you are aware, the EPA has extended the deadline to submit State Implementation Plans (SIPs) for the second planning period to July 2021. Missouri intends to submit our Regional Haze SIP by the extended, regulatory deadline in 2021. As such, Missouri is currently in the early stages of conducting our own technical analysis to address visibility in the two Class I areas located within the state. At this time, we are unable to agree or disagree on MANE-VU's technical analysis that suggests Missouri's location, historical emissions and prevailing weather patterns creates the possibility for visibility impact on MANE-VU's Class I areas. Therefore, Missouri requests that MANE-VU or MANE-VU states refrain from incorporating any of the emission reduction measures, or Asks, in future control strategy scenarios.

Missouri has already seen reductions in visibility impairment at our Class I areas due to regulatory programs that have impacted and will continue to impact Missouri sources over the next several years. Visibility improvement in our Class I areas is on an accelerated pace such that the rate of progress towards the national visibility goal exceeds the uniform rate necessary to remedy visibility impairment by 2064. Based on this, Missouri believes that the Asks may be premature and should not be relied upon in any state's Regional Haze SIP for the second planning period.

Missouri understands that the Mid-Atlantic and Northeast states will develop and submit SIPs for their own states using the MANE-VU analysis. Missouri will endeavor to work with individual states to ensure that future control strategies are consistent with Missouri strategies. Missouri looks forward to coordinating with MANE-VU states on these regional haze issues.

The Department appreciates MANE-VU's outreach efforts through consultation meetings to share information with and obtain feedback from states such as Missouri. Should MANE-VU require further information on this matter, please contact Darcy Bybee, Director of the Department's Air Pollution Control Program at 1659 East Elm Street, Jefferson City, MO 65101, via email at Darcy.Bybee@dnr.mo.gov, or by telephone at (573) 751-4817.

Thank you for your interest in air quality.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Darcy A. Bybee
Director

DAB:cb

Air Quality
ENVIRONMENTAL QUALITY

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL A. ABRACZINSKAS
Director

February 16, 2018

David Foerter
Ozone Transport Commission
444 N Capitol St NW Ste 322
Washington DC 20001-1529

Re: MANE-VU Regional Haze Consultation

Dear Mr. Foerter:

As you know, the Mid-Atlantic/Northeast Visibility Union (MANE-VU) identified North Carolina as one of 14 upwind states that may reasonably contribute to visibility impairment at MANE-VU Federal Class I areas located in Maine, New Hampshire, New Jersey, and Vermont (hereafter referred to as the "Inter-Regional Planning Organization (Inter-RPO) Ask or Ask).[1] At your invitation, the North Carolina Division of Air Quality (DAQ) has participated in each of the consultation calls MANE-VU held with the states identified in the Inter-RPO Ask.[2] These consultation calls have been helpful for understanding the technical analyses MANE-VU completed to identify states that may reasonably contribute to visibility impairment at MANE-VU Class I areas. The DAQ has also reviewed the technical documentation supporting the Ask. In the spirit of the consultation process, the DAQ is submitting this letter to share information, and express North Carolina's concerns with MANE-VU's analytical approach and conclusions as well as the timing for regional haze state implementation plan (SIP) submittals.

I. KapStone Kraft Paper Corporation (Facility ID 8048011 (3708300007), Unit ID ST-1,2 (ES-11-CU-001) - No. 1 Power Boiler)

The power boiler at Kapstone was identified in the MANE-VU Ask as having the potential for a 6.0 inverse megameter (Mm^{-1}) light extinction impact on MANE-VU Class I areas based on CALPUFF modeling of the facility's 2011 sulfur dioxide (SO_2) and nitrogen oxide (NOx) emissions. The DAQ reviewed the modeling documentation and found that the maximum potential light extinction impact modeled for the power boiler was 0.28 Mm^{-1} for MANE-VU Class I areas and 0.47 Mm^{-1} for Class I areas near the MANE-VU region (see Table 1). On January 31, 2018, the DAQ confirmed with Mr. David Healy, New Hampshire Department of Environmental Services, that the 6.0 Mm^{-1} extinction value shown in the Inter-RPO Ask for Kapstone Unit ST-1,2 is wrong. Mr. Healy confirmed that the extinction values shown in Table 1 below are correct for the power boiler and that the unit should not be included in the Ask. Therefore, we request that MANE-VU remove Kapstone from the Inter-RPO Ask.

[1] Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) States Concerning a Course of Action in Contributing States Located Upwind of MANE-VU Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028), August 25, 2017.
[2] Letter from Foerter, Dave, Executive Director, MANE-VU/OTC to Regan, Michael, Secretary, NCDEQ, October 16, 2017.

Table 1. Summary of Potential Visibility Impacts on MANE-VU and Nearby Federal Class I Areas Modeled for the KapStone Kraft Paper Corporation Power Boiler[1]

		Estimated Extinction (Mm^{-1})			
Region	**Class I Area**	**Maximum Potential Visibility Impact**	**Met Year 2002**	**Met Year 2011**	**Met Year 2015**
MANE-VU	Acadia National Park, ME	0.08	0.076	0.07	0.07
	Brigantine Wilderness Area, NJ	0.28	0.22	0.24	0.28
	Great Gulf Wilderness Area, NH	0.07	0.05	0.04	0.07
	Lye Brook Wilderness Area, VT	0.12	0.05	0.08	0.12
	Moosehorn Wilderness Area, ME	0.07	0.07	0.06	0.06
	Presidential Range Dry River Wilderness Area, NH	0.08	0.058	0.05	0.08
	Roosevelt Campobello International Park, ME/NB, Canada	0.06	0.06	0.06	0.05
Near MANE-VU	Dolly Sods Wilderness Area, WV	0.15	0.1	0.15	0.11
	James River Face Wilderness Area, VA	0.47	0.47	0.26	0.3
	Otter Creek Wilderness Area, WV	0.12	0.12	0.11	0.1
	Shenandoah National Park, VA	0.32	0.25	0.32	0.23

[1] Reference: 2016 MANE-VU Source Contribution Modeling Report, CALPUFF Modeling of Large Electrical Generating Units and Industrial Sources, Appendix F, April 4, 2017. CALPUFF modeling was performed using meteorological data for 2002, 2011, and 2015 and the highest light extinction impact was used as the maximum potential visibility impact.

In addition, the Kapstone facility has significantly reduced its SO_2 and NOx emissions since 2011. This would result in extinction values much lower than the modeling showed based on 2011 emissions.

- From 2011 to 2016, total facility SO_2 emissions have decreased by 94% (from 881 tons in 2011 to 55 tons in 2016) primarily due to SO_2 reductions from the No. 1 power boiler. The No. 1 power boiler accounted for 91% (803 tons) of total facility SO_2 emissions in 2011, and 68% (37 tons) in 2016.
- From 2011 to 2016, total facility NOx emissions have decreased by 13% (from 1,413 tons in 2011 to 1,232 tons in 2016). The No. 1 power boiler accounted for 71% (1,005 tons) of total facility NOx emissions in 2011, and 67% (820 tons) in 2016.

The DAQ will submit the latest 2016 emissions data for this facility to MANE-VU to support future modeling updates.

II. Statewide Contribution Assessment

The DAQ reviewed the following two documents in an effort to understand MANE-VU's statewide contribution assessment:

1. Selection of States for MANE-VU Regional Haze Consultation (2018), MANE-VU Technical Support Committee, Sept. 5, 2017.

2. MANE-VU Updated Q/d*C Contribution Assessment, MANE-VU Technical Support Committee, April 6, 2016.

As noted in these documents, MANE-VU considered the results of a weight-of-evidence approach based on emissions (tons per year) divided by distance (kilometers) (Q/d) calculations, CALPUFF modeling, and HYSPLIT back trajectories to determine which upwind states may reasonably contribute to visibility impairment at a MANE-VU Class I area. States that contributed 2 percent or more of the visibility impairment to a Class I area, and had an average mass impact of over 1 percent (0.01 microgram per cubic meter ($\mu g/m^3$)), were identified for consultation, and, therefore, included in the Inter-RPO Ask. Sulfur dioxide and NOx emissions for 2015 for all anthropogenic sources were considered in the assessment. The results for North Carolina are provided in Tables 2 and 3.

Table 2. Percent Mass-Weighted Sulfate and Nitrate Contributions from North Carolina to MANE-VU Class I Areas in 2015

Maximum	Acadia	Brigantine	Great Gulf	Lye Brook	Moosehorn	Mass Factor
2.7%	2.7%	2.7%	2.1%	2.3%	2.2%	0.34

Table 3. Percentage of Trajectories from North Carolina in 2015 on 20% Most Impaired Visibility Days[1]

Acadia	Brigantine	Great Gulf	Lye Brook	Moosehorn
0.55%	2.00%	0.00%	1.84%	1.22%

[1] 500 meter (m) trajectories were modeled using the HYSPLIT model, and 72-hour back trajectories were created 4 times per day at 3AM & PM and 9AM & PM. 2015 trajectories used the Eta Data Assimilation System (EDAS) 40-kilometer (km) meteorology. Trajectory points were mapped and counted within 25 x 25 mile grid cells.

Based on these results, MANE-VU concluded that, "*Modeling and trajectory analyses appear to support Alabama, North Carolina and Tennessee as being 2% contribution states. Each has sufficient emissions to cause some degree of visibility impact in the MANE-VU area and the trajectories suggest a connection on 20% most impaired visibility days, even if they are not as frequent as other states.*"

Although the DAQ was unable to fully understand the methodologies that MANE-VU applied due to a lack of documentation in the two references reviewed, the following identifies serious technical limitations with the information presented.

Q/d Screening Tool

The Q/d screening methodology yields conservatively high estimates of potential impacts for the following reasons:

1. Q/d does not account for the formation of secondary particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$) through chemical reactions as a function of distance. Consequently, Q/d assumes 100 percent conversion of SO_2 and NOx to ammonium sulfate ($(NH_4)_2SO_4$ and ammonium nitrate ($(NH_4)NO_3$)), respectively, which is overly conservative and yields unrealistic estimates.[3]
2. Q/d does not account for wind direction or residence time (i.e., the amount of time a pollutant impacts a given area). MANE-VU attempted to correct for this limitation, in part, by developing wind-

[3] US EPA, Interagency Work Group on Air Quality Modeling Phase 3 Summary Report: Near-Field Single Source Secondary Impacts. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Analysis Division, Air Quality Modeling Group, Research Triangle Park, NC, EPA-454/P-15-002, July 2015, pages 23-24.

direction-specific constants for each IMPROVE monitor (based on prior CALPUFF modeling for point sources) to "scale" Q/d results. However, the details of this methodology is not documented in the references we reviewed; consequently, the DAQ cannot determine if this is a reasonable approach for screening purposes. The Brigantine Wilderness Area in New Jersey, which is the closest MANE-VU Class I area to North Carolina, is located about 507 km (315 miles) from the centroid of the closest point to North Carolina, and 635 km (394 miles) from the centroid of North Carolina. The DAQ does not believe that the MANE-VU screening methodology is robust enough to determine visibility impairment attribution at these long distances.

3. For the stationary non-point and mobile source sectors, MANE-VU did not provide documentation of how it prepared 2015 year emissions. The DAQ requests that MANE-VU provide this documentation for review and comment by the upwind states. Furthermore, MANE-VU cited several references justifying the use of Q/d as a screening tool for assessing potential visibility impacts of these sources on Class I areas. The DAQ reviewed these references and found that they all focus on using Q/d as a screening tool for large point sources only; not surface emissions from stationary non-point and mobile sources.[3,4,5,6] The DAQ believes that Q/d applied to the sum of total statewide annual emissions for stationary non-point and mobile sources at the state centroid results in significantly high impacts especially since Q/d does not account for atmospheric dispersion or residence time of pollutants impacting a Class I area.

Back-Trajectory Analysis

MANE-VU modeled back trajectories for the 20 percent most impaired visibility days during 2002, 2011 and 2015 at each of the MANE-VU Class I areas. MANE-VU used the back-trajectory results to qualitatively cross-check with the screening results to justify including states in MANE-VU Inter-RPO Ask. If an upwind state was determined to have a 2 percent or more impact on a MANE-VU Class I area and it had at least one trajectory originating from the upwind state, MANE-VU included the state in the Ask. The MANE-VU documentation does not identify the days during which or the number of trajectories originating from North Carolina. Given the low percentage of trajectories originating from North Carolina in 2015 (see Table 3), the DAQ believes that the back-trajectory analysis shows that North Carolina should not be considered as reasonably attributing to visibility impairment in any of MANE-VU's Class I areas, particularly when the screening analysis overestimates potential impacts. For distant-source regions, the trajectory threshold should be much higher to definitively assign culpability.

The DAQ further questions why MANE-VU used the course Eta Data Assimilation System (EDAS) 40-km meteorology for its 2011 and 2015 analysis, and EDAS 89-km meteorology for its 2002 analysis, instead of using the North American Mesoscale Forecast System (NAM) model with a 12-km grid for HYSPLIT trajectory modeling. The NAM model has become the model of choice not just for DAQ but also for EPA and other air quality agencies and RPOs for HYSPLIT trajectory modeling. Furthermore, the DAQ questions MANE-VU's selective use of meteorological years 2002, 2011 and 2015, instead of across consecutive years (e.g., 2011-2015). The DAQ believes that use of more current year emissions and meteorology would significantly improve the contribution assessment for MANE-VU Class I areas.

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[4] National Association of Clean Air Agencies, *PM2.5 Modeling Implementation for Projects Subject to National Ambient Air Quality Demonstration Requirements Pursuant to New Source Review*, Report from NACAA PM2.5 Modeling Implementation Workgroup, January 7, 2011, page 2-4 and Appendix E.

[5] Baker, K. R. and Foley, K. M., "A Nonlinear Regression Model Estimating Single Source Concentrations of Primary and Secondarily Formed PM2.5," July 2011.

[6] Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase I Report—Revised (2010) Natural Resource Report NPS/NRPC/NRR—2010/232, US Forest Service, National Park Service, and U.S. Fish and Wildlife Service, October 2010.

Basis for Determining Reasonable Attribution

The documentation the DAQ reviewed did not explain the technical basis for the visibility impairing thresholds that MANE-VU used to include states in the Inter-RPO Ask. This is important for states such as North Carolina to understand and to have the opportunity to address since MANE-VU is claiming that North Carolina is reasonably attributing to visibility impairment in one or more of MANE-VU's Class I areas. Given the significant uncertainty associated with the Q/d screening tool, the weakness of the back-trajectory analysis, and lack of documentation explaining how MANE-VU arrived at the contribution results shown in Table 2, the DAQ believes it is inappropriate for MANE-VU to use these results to draw any conclusions regarding North Carolina's contribution to visibility impairment in any of the MANE-VU Class I areas. The DAQ requests that MANE-VU provide additional documentation explaining the basis for the thresholds.

IV. Timing of SIP Submittals

We request that MANE-VU states seriously consider delaying submittal of their regional haze state implementation plans (SIPs) from July 2018 to July 2021. As EPA noted in its final regional haze rule,[7] extension of the SIP submittal date to July 2021 "...will allow states to coordinate regional haze planning with other regulatory programs, including but not limited to the Mercury and Air Toxics Standards,[8] the 2010 1-hour SO_2 NAAQS,[9] the 2012 annual $PM_{2.5}$ NAAQS[10] and the Clean Power Plan,[11] with the further expectation that this cross-program coordination would lead to better overall policies and enhanced environmental protection." In addition, EPA has yet to release its final regional haze guidance document which, when released, may contain significant revisions to the draft guidance document released on June 30, 2016 that would affect the process for identifying state(s) as reasonably attributing to visibility impairment in downwind state Class I areas.[12] It is for these reasons that North Carolina is working with the nine other Visibility Improvement - State and Tribal Association of the Southeast (VISTAS) states to complete our regional haze modeling analysis in mid-2019 and regional haze SIP by July 2021. The differing schedules have resulted in seven VISTAS states being asked to assess the MANE-VU analysis without the benefit of the forthcoming VISTAS technical work. Accounting for the emission reduction benefits associated with the federal programs EPA cited in its rule and following the final regional haze guidance issued by EPA will help to ensure that upwind states such as North Carolina are not falsely implicated as contributing to visibility impairment at MANE-VU Class I areas.

In addition, on January 18, 2018, EPA announced its decision to revisit aspects of the 2017 regional haze rule.[13] While the extent of the review is uncertain, the potential exists that EPA could modify certain regional haze provisions prior to the July 2021 SIP submittal deadline that may affect state obligations under the rule. The MANE-VU states should allow time for EPA to complete its revisit to the rule and for the VISTAS analysis to be completed and shared before submitting SIPs incorporating any new emission control presumptions directed at the VISTAS states.

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[7] 82 FR 3116-3118, January 10, 2017.
[8] 77 FR 9304, February 16, 2012.
[9] 75 FR 35520, June 22, 2010.
[10] 78 FR 3086, January 15, 2013.
[11] 80 FR 64662, October 23, 2015. The Clean Power Plan was stayed by the Supreme Court for the duration of litigation. Order in Pending Case, West Virginia v. EPA, No. 15A773 (February 9, 2016). As a result, states have no compliance obligations with respect to the Clean Power Plan at this time.
[12] Draft Guidance on Progress Tracking Metrics, Long-term Strategies, Reasonable Progress Goals and Other Requirements for Regional Haze State Implementation Plans for the Second Implementation Period, June 30, 2016.
[13] EPA's Decision to Revisit Aspects of the 2017 Regional Haze Rule Revisions, https://www.epa.gov/visibility/epas-decision-revisit-aspects-2017-regional-haze-rule-revisions.

In our SIP, North Carolina will rely on VISTAS II regional-scale modeling for 2028 using the Comprehensive Air Quality Model with Extensions (CAMx) model with the Particulate Matter Source Apportionment Technology (PSAT) source apportionment method for assessing source contributions to Class I areas. This work will also be used to determine if North Carolina has a significant anthropogenic emissions source contribution to visibility impairment in each of MANE-VU's Class I areas. By delaying submittal of MANE-VU state regional haze SIPs until July 2021, North Carolina will be able to share more current emissions and modeling data with the MANE-VU states to determine if North Carolina emissions reasonably contribute to visibility impairment in any of the MANE-VU Class I areas.

IV. Summary and Conclusions

In closing, the DAQ welcomes the opportunity to consult with MANE-VU on the quality of data and analytical techniques used to determine reasonable attribution in MANE-VU Class I areas. As previously noted, the DAQ has serious concerns with the information included in the Inter-RPO Ask for North Carolina. First, I request that MANE-VU revise the Inter-RPO Ask to exclude the power boiler at Kraft Paper Corporation that was incorrectly included in the Ask.

Second, the statewide contribution assessment contains significant uncertainty associated with the Q/d screening tool (especially applied to stationary non-point and mobile source emissions) and back-trajectory analysis, and the technical documentation lacks clarity on how MANE-VU arrived at the contribution results shown in Table 2. For these reasons, the DAQ believes it is inappropriate for MANE-VU to use these results to draw any conclusions regarding North Carolina's contribution to visibility impairment in any of the MANE-VU Class I areas. In addition, the DAQ believes that MANE-VU has not demonstrated the need for North Carolina to pursue adoption and implementation of the emissions management measures MANE-VU included in its Inter-RPO Ask.

Finally, North Carolina recommends that MANE-VU take the additional time allowed by EPA to conduct CAMx and PSAT modeling such as VISTAS II is doing to determine if North Carolina reasonably attributes to visibility impairment in MANE-VU's Class I areas. Meanwhile, North Carolina is working with the VISTAS states to complete its CAMx and PSAT modeling and will rely on this modeling to assess its visibility impact on in-state and downwind state Class I areas. North Carolina will share this information with MANE-VU when it becomes available in 2019.

Thank you for the opportunity to comment on the Inter-RPO Ask. I hope that these comments are helpful and I look forward to continuing to work with you and the MANE-VU states to develop reasonable regional haze SIPs.

Sincerely,

Michael Abraczinskas, Director
Division of Air Quality, NCDEQ

MAA/rps

cc: Michael Pjetraj, DAQ
Sushma Masemore, DAQ
Randy Strait, DAQ

Members
Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Penobscot Indian Nation
Rhode Island
St. Regis Mohawk Tribe
Vermont

Nonvoting Members
U.S. Environmental Protection Agency
National Park Service
U.S. Fish and Wildlife Service
U.S. Forest Service

MANE-VU Class I Areas

ACADIA NATIONAL PARK ME

BRIGANTINE WILDERNESS NJ

GREAT GULF WILDERNESS NH

LYE BROOK WILDERNESS VT

MOOSEHORN WILDERNESS ME

PRESIDENTIAL RANGE DRY RIVER WILDERNESS NH

ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Secretary Michael Regan
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Dear Secretary Regan,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

All States, regardless of whether they are home to a Class I area, must prepare a State Implementation Plan (SIP) for Regional Haze by July 31, 2021 to meet the United States Environmental Protection Agency (EPA) rules implementing Section 169A of the Clean Air Act (40 CFR 51.300). This Regional Haze SIP must demonstrate that reasonable progress towards improved visibility at the nearby Class I areas will be made by certain milestone years. The milestone year for the second planning period is 2028. The regulations at 40 CFR 51.308 require States with Class I areas to develop reasonable progress goals in consultation with any State that may reasonably cause or contribute to visibility impairment in the Class I area. The Mid-Atlantic/Northeast Visibility Union (MANE-VU) coordinates regional haze planning activities for the mid-Atlantic and northeast states and tribes. This letter is part of MANE-VU's consultation process for improving visibility.

For the purpose of establishing reasonable progress goals for the second Regional Haze SIP, MANE-VU has identified several States, including all MANE-VU member states, that may reasonably contribute to visibility impairment at MANE-VU Class I areas. The list of States identified for inclusion in the consultation process is in the attached Table 1.

MANE-VU is seeking your consultation to exchange information and analyses with regard to visibility issues at MANE-VU Class I areas in Maine, New Jersey, New Hampshire and

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

We invite you to join our upcoming State-to-State consultation meetings. These meetings are intended to comply with the consultation requirements specified in the Clean Air Act (40 CFR Part 51), and are in accordance with the MANE-VU Inter-Regional Planning Organization (RPO) Consultation Framework.

Our goal for these consultation meetings is to exchange information and analyses with regard to visibility issues in MANE-VU Class I areas, and to review the control strategies MANE-VU is pursuing (i.e., the MANE-VU Inter-RPO "Ask"). We invite your state to share your analyses and to provide feedback on comments regarding the MANE-VU Inter-RPO Ask.

MANE-VU states intend to submit Regional Haze SIPs by July 31, 2018. We anticipate that this date may be ahead of your goals and planning schedule but would appreciate your early consultation at this time and we believe it will be advantageous to you by expanding time for your state's planning and implementation.

MANE-VU proposes to host a series of three webinar meetings to allow for information exchange and policy discussion. Additional consultation sessions can be scheduled as needed prior to the policy discussion session.

1. Inter-RPO Consultation #1 - Introduction, overview and initial discussion (Air Director and technical staff)
2. Inter-RPO Consultation #2 – State presentations and discussion of issues (Air Director and technical staff)
3. Inter-RPO Consultation #3 – Review and policy discussion (Commissioner/Secretary and Air Director)

These consultation webinars are intended for the participation of all states and tribal nations located within the state borders of the states included in the table below. We also welcome the participation of the multi-jurisdictional agencies that represent the invited states and tribal nations, as well as representatives from the U.S. Environmental Protection Agency and the Federal Land Manager agencies.

MANE-VU Class 1 Area States (Maine, New Hampshire, New Jersey and Vermont) request consultation with:

Alabama	Illinois	Missouri	Tennessee
Connecticut*	Kentucky	New York*	Texas
Delaware*	Louisiana	North Carolina	Virginia
District of Columbia*	Maryland*	Ohio	West Virginia
Florida	Massachusetts*	Pennsylvania*	
Indiana	Michigan	Rhode Island*	

** MANE-VU State*

Consultation meeting dates, agendas, and discussion materials will be coordinated through the RPO leads and will be circulated prior to each consultation.

On behalf of MANE-VU, I look forward to working with you in an informative and productive consultation process of that yields mutually beneficial results.

Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Michael Abraczinskas

Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

December 29, 2017

David Foerter
Ozone Transport Commission and MANE-VU
444 N. Capital St. NW
Washington DC 20001

RE: MANE-VU Regional Haze Round 2 Ask – Ohio EPA Data Corrections

Dear Mr. Foerter:

The Ohio Environmental Protection Agency (Ohio EPA) is providing information to correct data inaccuracies regarding Ohio sources identified in technical documentation used to develop MANE-VU's August 25, 2017 "Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) States Concerning a Course of Action in Contributing States Located Upwind of MANE-VU Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028)" (herein "MANE-VU Ask"). This letter and accompanying documentation should not be construed to incorporate all of Ohio EPA's comments or concerns regarding the MANE-VU Ask, but rather only responds to MANE-VU's request to provide any updates to Electric Generating Unit (EGU) and non-EGU industrial source data used by MANE-VU in their analysis.

Ohio EPA does wish to submit the following comments, especially pointing out corrections to some of the information in the EGU data and non-EGU data MANE-VU referenced on December 18th, 2017 as part of the 4-factor preliminary work completed by MANE-VU for your Ask. Ohio EPA performed a review of two files provided by MANE-VU: "EGU Data for Four-Factor Analyses - Only CALPUFF Units 170928" (herein "EGU data") and "Industrial_Source_Data_for_Four-Factor_Analyses_20170330" (herein "non-EGU data"). Our comments are limited to the Ohio sources identified in these files. Ohio EPA notes the very short timeframe for this particular opportunity to respond with technical feedback on analyses used to support the MANE-VU Regional Haze consultative process. The third MANE-VU consultation call on December 18, 2017 was the first time Ohio EPA was made aware of MANE-VU's opportunity for providing feedback, and that it should be received by December 31, 2017. This provided only eight business days to respond to this request.

1. Ohio EPA notes that multiple units for Ohio in MANE-VU's EGU data do not contain up-to-date information. Ohio EPA is including the EGU data spreadsheet with this letter which contains updated information in column M (State Staff Operation Notes), column AM (State Staff SO2 Control Notes) and column BG (State Staff NOx Control Notes), all contained in the tab labeled "EGU Data – UPDATE." The following information is contained within:
    a. Walter C. Beckjord Generating Station units 1 and 2 permanently shutdown on October 1, 2014.
    b. Miami Fort Generating Station Units 5-1 and 5-2 permanently shutdown on December 31, 2007; Unit 6 permanently shutdown on June 1, 2015.
    c. Avon Lake Power Plant Unit 12 has not been retired and Ohio EPA is not aware of any plans to retire. However, this facility was recently subject to U.S. EPA's Data Requirements Rule and the following federally enforceable sulfur dioxide (SO2) emissions limits were imposed effective November 23, 2016:
        i. Sulfur dioxide (SO_2) emissions from all SO_2-emitting sources at the facility (i.e., emissions units B010, B012, B013, B015, and B016, combined) shall not exceed 9,600 lbs/hr (1-hour average basis).
        ii. SO_2 emissions from emissions units B010 and B012, combined, shall not exceed 1.59 lb/mmBtu (as a rolling, 30-day average).
    d. Eastlake Units 1, 2, 3, and 4 permanently shutdown on April 16, 2015.
    e. Eastlake Unit 6 has a 469 MMBtu/hr max heat input limit.
    f. W.H. Sammis Units 1, 2, 3 and 4 – First Energy has indicated plans to permanently retire this facility in May 2020. Ohio EPA does not incorporate planned shutdowns into ERTAC data unless it is enforceable, or the company has indicated it is definitive. In this case, the company has indicated it is definitive.
    g. Muskingum River Power Plant Units 1, 2, 3, 4 and 5 permanently shutdown on May 31, 2015.

2. Ohio EPA notes that multiple units for Ohio in MANE-VU's non-EGU data do not contain up-to-date information. Ohio EPA is including the non-EGU data spreadsheet with this letter which contains updated information in column I of the "TOP 50 UPDATE" tab, column J of the "Morton Salt UPDATE" tab, column J of the "Kraton UPDATE" tab, column J of the "P H Glatfelter UPDATE" tab, and column J of the "MedCtr UPDATE" tab. It should be noted that of the 11 facilities MANE-VU identified, 10 have either permanently shutdown the significant sources or converted to natural gas and/or taken restrictions to be limited use boilers.

While Ohio EPA understands MANE-VU's intent is only to update these sources as a part of their remedy analyses, Ohio EPA believes it is imperative that the correct data should have been used to develop MANE-VU's contribution analyses and develop the Ask since the modeling overestimates Ohio's contribution. As can be seen, significant discrepancies exist in the data used by MANE-VU regarding the actual operating status of Ohio's sources used to develop the MANE-VU Ask.

Lastly, Ohio EPA wishes to express support for the content of the letter sent to MANE-VU by LADCO on December 20, 2017 regarding this same technical feedback request. We look forward to continuing dialogue and ensuring accurate information is reflected in our analyses as we progress towards preparing our Round 2 Regional Haze State Implementation Plans. If you have any further questions, please feel free to contact Jennifer Van Vlerah at Jennifer.vanvlerah@epa.ohio.gov or 614-644-3696.

Sincerely,

Robert Hodanbosi

Robert Hodanbosi
Chief, Ohio EPA Division of Air Pollution Control

Cc: Jennifer Van Vlerah, SIP Manager, Ohio EPA Division of Air Pollution Control

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Director Craig Butler
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
Columbus, OH 43216-1049

Dear Director Butler,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

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** MANE-VU State*

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On behalf of MANE-VU, I look forward to working with you in an informative and productive consultation process of that yields mutually beneficial results.

Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Bob Hodanbosi

Joseph Jakuta

From: Mark A. Reynolds <Mark.A.Reynolds@tn.gov>
Sent: Friday, December 22, 2017 2:49 PM
To: Joseph Jakuta
Cc: Paul LaRock; James Johnston; 'hornback@metro4-sesarm.org'
Subject: MANU-VU "ask" consultation
Attachments: EGU_CAMD_Combined_Final.xlsm

Follow Up Flag: Follow Up
Flag Status: Flagged

Mr. Jakuta,

I work for the Tennessee Department of Environment and Conservation in the Air Pollution Control Division (TDEC-APC). I am the technical lead for the Regional Haze SIP for the second implementation period. I have participated in the MANE-VU consultation calls on October 20, December 1, and December 18 of this year. I also spoke to Jeff Underhill at the Regional Haze workshop in Denver. After reviewing the MANE-VU technical documents, it appears that MANE-VU evaluated the following facilities in Tennessee: TVA Cumberland, TVA Gallatin, TVA John Sevier, TVA Johnsonville, TVA Kingston, Cargill Corn Milling, PCA, and Eastman. It is my understanding that MANE-VU used emission data from 2011 and 2015 as part of their analysis.

On the December 1 call, I provided some information about Electric Generating Units (EGU's) in Tennessee. All of the EGU's in Tennessee are owned by the Tennessee Valley Authority (TVA). During the call, I stated that the TVA entered into a court settlement in 2011 for previous violations of the Clean Air Act. This settlement required shut downs, new controls, and a switch from coal to natural gas at certain facilities. On the call, I also stated that some of these changes have taken place, some are on-going, and some will take place in the near future.

During one of the consultation calls, MANE-VU asked other states to provide any additional emission data to MANE-VU by the end of December. TDEC-APC is providing some additional information on EGU emissions in the attached Microsoft Excel file. In addition to EGU emissions in the attached file, we have provided some information on the Cargill Corn Milling facility since it has switched from coal to natural gas and is essentially shut down.

TDEC-APC is committed to participating in the consultation process, and I look forward to participating in the MANE-VU consultation call on January 12, 2018. Please let me know if I can provide any more information.

Thanks,

Mark A. Reynolds, P.E. | TDEC Environmental Consultant 3
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Ave., Nashville, TN 37243
p. 615-532-0559
mark.a.reynolds@tn.gov
tn.gov/environment

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Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Commissioner Bob Martineau
Tennesse Department of Environment and Conservation
312 Rosa L. Parks Ave.
Tennesse Tower - 2nd flr.
Nashville, TN 37243

Dear Commissioner Martineau,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Michelle Walker Owenby

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ROOSEVELT CAMPOBELLO INTERNATIONAL PARK ME/NB, CANADA

Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Chairman Bryan Shaw
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg F
Austin, TX 78753

Dear Chairman Shaw,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

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** MANE-VU State*

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Steve Hagle

Joseph Jakuta

From: McLeod, Doris (DEQ) <Doris.McLeod@deq.virginia.gov>
Sent: Thursday, January 18, 2018 3:01 PM
To: Joseph Jakuta
Cc: Ballou, Thomas (DEQ); John Hornback; Narasimhan, Kotur (DEQ)
Subject: VA updates to industrial emissions
Attachments: Industrial_Source_Data_for_Four-Factor_Analyses_20170330-DAM_01-18-2018.xlsx

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Joseph,

I don't know if you can consider any of these updates to the industrial point source data, but I thought I'd send it to you regardless. The Radford Army Ammunition Plant tab is probably most interesting—they will be permanently retiring their coal fired boilers in the 2018 or 2019 timeframe. They are in the midst of constructing new NG/DO units, and the retirement of the coal units is a requirement of their permit.

Thanks,

Doris McLeod, Air Quality Planner
Doris.McLeod@deq.virginia.gov
804-698-4197
804-698-4319 (fax)
Air Division, VDEQ
1111 E. Main Street, Suite 2200
P.O. Box 1105
Richmond, VA 23219

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Mid-Atlantic/Northeast Visibility Union

MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Director David Paylor
Virginia Department of Environmental Quality
P.O. Box 10009
Richmond, VA 23240-0009

Dear Director Paylor,

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Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: Mike Dowd

January 27, 2018

David Foerter
Ozone Transport Commission
444 N Capitol St NW Ste 322
Washington DC 20001-1529

RE: MANE-VU Regional Haze Consultation

Dear Mr. Foerter:

This correspondence is being sent to you on behalf of the state air pollution control agencies in Alabama, Florida, Kentucky, North Carolina, Tennessee, Virginia, and West Virginia (the seven VISTAS states). Comments are offered herein in response to the following documents:

- *Selection of States for MANE-VU Regional Haze Consultation (2018) – 9/5/2017*
- *Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) States Concerning a Course of Action in Contributing States Located Upwind of MANE-VU Toward Assuring Reasonable Progress for the Second Regional Haze Implementation Period (2018-2028)*

As you know, the MANE-VU states have made available the documents above and have held four consultation calls with the seven VISTAS states and other states. Thank you for sharing your thoughts during these calls and especially for taking time to explain the technical assessment in detail.

At this time, it is not possible for the seven VISTAS states to provide a detailed technical response to the MANE-VU requests. However, this letter provides some initial thoughts and concerns for your consideration.

Timing.

The MANE-VU states have indicated their intent to file their regional haze SIPs by the original July 2018 deadline that EPA has more recently adjusted to July 31, 2021. The ten VISTAS states are working toward completion of their regional haze technical analysis in mid-2019 with the intention of submitting regional haze SIPs by July 2021. The differing schedules have resulted in the seven VISTAS states being asked to assess the MANE-VU analysis without the benefit of the forthcoming VISTAS technical work.

On January 18, 2018, EPA announced its decision to revisit aspects of the 2017 Regional Haze Rule Revisions.[1] While the extent of the new review is uncertain, the potential exists that EPA could modify certain existing regional haze provisions prior to the SIP submittal deadline; hence possibly affecting state obligations under the rule.

The MANE-VU states should allow time for EPA to complete its revisit to the rule and for the VISTAS analysis to be completed and shared before submitting SIPs incorporating any new emission control presumptions directed at the VISTAS states.

Technical Analysis – Inventories, Modeling, and Evaluation.

The MANE-VU states' analysis used emission inventories that are inconsistent with the recent EPA regional haze modeling platform. These inventories do not fully reflect emission reductions expected from southeastern EGUs by 2028 and perhaps from other sources as well. Modeling results derived from use of the outdated emissions inventory may not allow conclusive determinations of impacts, if any, from VISTAS states on Class I areas in the MANE-VU region. Additionally, the analyses may not meet EPA's SIP approval criteria.

In many cases, the sources of the alleged contributions to downwind receptors are located thousands of miles away from the MANE-VU Class I areas. The MANE-VU states used the CALPUFF model and the Q/d screening approach to identify contributions that they allege are significant. CALPUFF should not be used for transport distances greater than 300 km since there are serious conceptual concerns with the use of puff dispersion models for very long-range transport which can result in overestimations of surface concentrations by a factor of three to four.[2]

The preamble to the recent Revisions to the Guideline on Air Quality Models that modified appendix W of 40 CFR part 51 states, in part, "the EPA has fully documented the past and current concerns related to the regulatory use of the CALPUFF modeling system and believes that these concerns, including the well documented scientific and technical issues with the modeling system, support the EPA's decision to remove it as a preferred model in appendix A of the *Guideline*."[3]

[1] https://www.epa.gov/visibility/epas-decision-revisit-aspects-2017-regional-haze-rule-revisions
[2] *Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long Range Transport Impacts* (December 1998)
[3] *Federal Register,* Vol. 82, No. 10, Tuesday, January 17, 2017, Page 5195

The reliability of the Q/d screening approach diminishes over distance and especially beyond 300 km. If the MANE-VU states wish to evaluate emission impacts more than 300 km downwind from sources, a scientifically reliable approach is essential such as the CAMx model with the PSAT source apportionment method.

In response to our stated concerns about inaccuracies in the MANE-VU analysis during the December 18, 2018 technical call, the MANE-VU states suggested that the seven VISTAS states could reassess contributions using their own information to correct the MANE-VU analysis. The VISTAS states intend to conduct a thorough technical review of emission impacts during their forthcoming analysis. However, it is incumbent on the MANE-VU states to correct the errors inherent in their own analysis and reassess the states with which consultation is necessary.

The MANE-VU "ask" includes year-round use of effective control technologies on EGUs; a four-factor analysis on sources with potential for visibility impacts of 3.0 Mm^{-1} or greater at any MANE-VU Class I area; establishment of an ultra-low sulfur fuel oil standard; updated permits, enforceable agreements, and/or rules to lock in lower emission rates for EGUs and other large emission sources that have recently reduced emissions or are scheduled to do so; and efforts to decrease energy demand through use of energy efficiency and increased use of combined heat and power and other clean distributed generation technologies. This "ask" fails to recognize fully the improved controls, fuel switches, retirements, and energy demand reductions that have already been achieved in the Southeast. Further, the MANE-VU states suggest that the Southeast adopt control measures that would produce little if any visibility improvement at MANE-VU Class I areas. The MANE-VU states should refine their analyses and establish a sound basis for any actions requested of the seven VISTAS states and incorporated such expectations in MANE-VU SIPs.

<u>Permanent and Enforceable.</u>

Regional haze SIPs (including the reasonable progress goals that are set for each Class I area) should only include emission reductions that are permanent, quantifiable, and enforceable. Therefore, the MANE-VU states should only include in their regional haze SIPs emission control presumptions for the seven VISTAS states that are clearly necessary and effective and have been made permanent and enforceable via state rulemaking or permit revisions. To include emission controls that are not permanent and enforceable in MANE-VU states' SIPs would be inconsistent with the Clean Air Act and the Regional Haze Rule and could result in adverse comments from the seven VISTAS states during the MANE-VU regional haze SIP public comment period.

The VISTAS states will be initiating technical work in the spring of 2018. When that work is completed, we will provide the MANE-VU states with a summary of our analysis. Early results may be available as early as late 2018 and certainly by the spring of 2019.

Please note that this letter is not intended to cover every issue that may be of concern to the seven VISTAS states. Any or all states represented by this letter may submit state-specific comments to you.

Thank you for your consideration of these concerns. We welcome further conversations at appropriate times as our collective work progresses.

Sincerely,

John E. Hornback

John E. Hornback
Executive Director
Metro 4/SESARM/VISTAS

Copies: VISTAS States Air Pollution Control
Agency Directors

Joseph Jakuta

From: Crowder, Laura M <Laura.M.Crowder@wv.gov>
Sent: Friday, December 29, 2017 12:35 PM
To: Joseph Jakuta
Cc: David Foerter; John Hornback (hornback@metro4-sesarm.org); Durham, William F; Keller, Alanna J; Fewell, David R
Subject: WV Technical Comments on MANE-VU emissions inventory data
Attachments: Industrial_Source_Data_for_Four-Factor_Analyses_201703301 WV revised.xlsx; EGU Data for Four-Factor Analyses - Only CALPUFF Units 1709281 WV.XLSX; Bayer Inactive.pdf; MANE-VU Industrial Narrative.pdf; Longview 061-00134_PERM_R14-0024F.pdf; Harrison 033-00015_PERM_13-2988B.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Joseph,

Attached are West Virginia's comments on the MANE-VU spreadsheets:

EGU Data for Four-Factor-Analyses – Only CALPUFF Units 1709283.xlsx
Industrial_Source_Data_for_Four-Factor_Analyses_201703304.xlsx

I have attached 2 spreadsheets, with only the WV specific data retained, and comments added to a WV Read Me worksheet in each.

For the EGUs, I included additional worksheet pages for 2 plants with pertinent permit conditions. I also attached pdf copies of the pertinent permits.

For the industrial sources comments are included in a new WV Comments column. I also attached a pdf summary of the comments.

We also intend to submit comments regarding the MANE-VU Ask at a later date.

If you have any questions you may call me at the number below.

Laura

Laura Mae Crowder
WV Division of Air Quality
Deputy Director/Assistant Director of Planning
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Charleston, WV 25304
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Mid-Atlantic/Northeast Visibility Union
MANE-VU

Reducing Regional Haze for Improved Visibility and Health

October 16, 2017

Cabinet Secretary Austin Caperton
West Virginia Department of Environmental Protection
601 - 57th Street SE
Charleston, WV 25304

Dear Cabinet Secretary Caperton,

The mid-Atlantic and northeast region is home to seven national parks or wilderness areas designated as Class I areas under Section 169A of the federal Clean Air Act. These areas are among 156 Class I areas located throughout the United States. States with Class I areas are required to maintain and improve visibility in these areas to achieve natural background conditions by the year 2064. Existing visibility impairment in these Class I areas, also called regional haze, is caused by many sources located over a wide region.

All States, regardless of whether they are home to a Class I area, must prepare a State Implementation Plan (SIP) for Regional Haze by July 31, 2021 to meet the United States Environmental Protection Agency (EPA) rules implementing Section 169A of the Clean Air Act (40 CFR 51.300). This Regional Haze SIP must demonstrate that reasonable progress towards improved visibility at the nearby Class I areas will be made by certain milestone years. The milestone year for the second planning period is 2028. The regulations at 40 CFR 51.308 require States with Class I areas to develop reasonable progress goals in consultation with any State that may reasonably cause or contribute to visibility impairment in the Class I area. The Mid-Atlantic/Northeast Visibility Union (MANE-VU) coordinates regional haze planning activities for the mid-Atlantic and northeast states and tribes. This letter is part of MANE-VU's consultation process for improving visibility.

For the purpose of establishing reasonable progress goals for the second Regional Haze SIP, MANE-VU has identified several States, including all MANE-VU member states, that may reasonably contribute to visibility impairment at MANE-VU Class I areas. The list of States identified for inclusion in the consultation process is in the attached Table 1.

MANE-VU is seeking your consultation to exchange information and analyses with regard to visibility issues at MANE-VU Class I areas in Maine, New Jersey, New Hampshire and

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Vermont, and to review the implementation process and development of a coordinated emissions management strategy.

We invite you to join our upcoming State-to-State consultation meetings. These meetings are intended to comply with the consultation requirements specified in the Clean Air Act (40 CFR Part 51), and are in accordance with the MANE-VU Inter-Regional Planning Organization (RPO) Consultation Framework.

Our goal for these consultation meetings is to exchange information and analyses with regard to visibility issues in MANE-VU Class I areas, and to review the control strategies MANE-VU is pursuing (i.e., the MANE-VU Inter-RPO "Ask"). We invite your state to share your analyses and to provide feedback on comments regarding the MANE-VU Inter-RPO Ask.

MANE-VU states intend to submit Regional Haze SIPs by July 31, 2018. We anticipate that this date may be ahead of your goals and planning schedule but would appreciate your early consultation at this time and we believe it will be advantageous to you by expanding time for your state's planning and implementation.

MANE-VU proposes to host a series of three webinar meetings to allow for information exchange and policy discussion. Additional consultation sessions can be scheduled as needed prior to the policy discussion session.

1. Inter-RPO Consultation #1 - Introduction, overview and initial discussion (Air Director and technical staff)
2. Inter-RPO Consultation #2 – State presentations and discussion of issues (Air Director and technical staff)
3. Inter-RPO Consultation #3 – Review and policy discussion (Commissioner/Secretary and Air Director)

These consultation webinars are intended for the participation of all states and tribal nations located within the state borders of the states included in the table below. We also welcome the participation of the multi-jurisdictional agencies that represent the invited states and tribal nations, as well as representatives from the U.S. Environmental Protection Agency and the Federal Land Manager agencies.

MANE-VU Class 1 Area States (Maine, New Hampshire, New Jersey and Vermont) request consultation with:

Alabama	Illinois	Missouri	Tennessee
Connecticut*	Kentucky	New York*	Texas
Delaware*	Louisiana	North Carolina	Virginia
District of Columbia*	Maryland*	Ohio	West Virginia
Florida	Massachusetts*	Pennsylvania*	
Indiana	Michigan	Rhode Island*	

** MANE-VU State*

Consultation meeting dates, agendas, and discussion materials will be coordinated through the RPO leads and will be circulated prior to each consultation.

On behalf of MANE-VU, I look forward to working with you in an informative and productive consultation process of that yields mutually beneficial results.

Sincerely,

Dave Foerter, Executive Director
MANE-VU/OTC

Cc: William Durham