west virginia department of environmental protection

Appendix F-2

VISTAS State to Non-VISTAS State Consultation

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

west virginia department of environmental protection

Appendix F-2a

VISTAS Letter to AR Office of Air Quality
June 22, 2020

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

Visibility Improvement State and Tribal Association of the Southeast

June 22, 2020

William K. Montgomery, Associate Director
Arkansas Office of Air Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5328

RE: Request for Regional Haze Reasonable Progress Analysis for Arkansas Source Impacting VISTAS Class I Area

Dear Mr. Montgomery:

The Regional Haze Regulation 40 CFR § 51.308(d) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." 40 CFR § 51.308(f) requires states to submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, states must establish a reasonable progress goal that provides for reasonable progress towards achieving natural visibility conditions for each mandatory Class I Federal area (Class I area) within their state. 40 CFR § 51.308(d)(1) requires that reasonable progress goals "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

In establishing reasonable progress goals, states must consider the four factors specified in § 169A of the Federal Clean Air Act and in 40 CFR § 51.308(f)(2)(i). The four factors are: 1) the cost of compliance, 2) the time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected sources. Consideration of these four factors is frequently referenced as the "four-factor analysis."

To assist its member states, the Visibility Improvement State and Tribal Association of the Southeast[1] (VISTAS) and its contractors conducted technical analyses to help states identify

[1] The VISTAS states are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

sources that significantly impact visibility impairment for Class I areas within and outside of the VISTAS region. VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. This AoI analysis involved running the HYSPLIT Trajectory Model to determine the origin of the air parcels affecting visibility within each Class I area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are most likely contributing to the visibility impairment at each Class I area. This information indicated that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from point sources. Next, VISTAS states used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions photochemical model (CAMx Model) to determine visibility impairment due to individual sources. PSAT results showed that in 2028 the majority of visibility impairment at VISTAS Class I areas will continue to be from point source SO_2 and NO_x emissions. Using the PSAT data, VISTAS states identified, for reasonable progress analysis, sources shown to have a sulfate or nitrate impact on one or more Class I areas greater than or equal to 1.00 percent of the total sulfate plus nitrate point source visibility impairment on the 20 percent most impaired days for each Class I area. This analysis has identified the following source in Arkansas that meets this criterion:

- Entergy Arkansas Inc-Independence Plant (05063-1083411)

Information regarding projected 2028 SO_2 and NO_x emissions and visibility impacts on a VISTAS Class I area is shown in the table attached to this letter (Attachment 1).

As required in 40 CFR § 51.308(d)(1)(i)(A), VISTAS, on behalf of North Carolina, requests that Arkansas conduct, or require that the source in question initiate, and share when completed, the results of a reasonable progress analysis for the noted source with VISTAS. This will be helpful to North Carolina as they begin the formal Federal Land Manager consultation process for their individual draft Regional Haze Plan in early 2021. So that North Carolina can include the results of your state's reasonable progress analysis in developing the long-term strategy for the Shining Rock Wilderness Class I area in North Carolina, we request that you submit this information to VISTAS no later than October 30, 2020. If the reasonable progress analysis cannot be completed by this date, please provide, no later than this date, notice of an attainable date for completion of the analysis. If you determine that a four-factor analysis is not warranted for the identified source, please provide the rationale for this determination by the requested date.

In developing projected 2028 emissions for the source, VISTAS utilized ERTAC_16.0 emissions projections with additional input from Arkansas. Please review these projections to verify that they are reasonable. Should you be aware of significantly different emission projections for

2028 for the source or pollutants, please provide revised estimates within thirty (30) days of the date of this letter. North Carolina will review any revised emission estimates, determine if a reasonable progress analysis is not needed to meet their regional haze obligations, and notify you accordingly.

Updated 2028 emission projections, if necessary, the results of your state's reasonable progress analysis for the requested source, and any necessary ongoing communications should be sent via email to vistas@metro4-sesarm.org.

Should you have any questions concerning this request, please contact me through September 30, 2020, at 404-361-4000 or hornback@metro4-sesarm.org.

Sincerely,

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

Attachment

Copies: Mike Abraczinskas, North Carolina Division of Air Quality
Michael Vince, Central States Air Resource Agencies

Attachment 1: Projected 2028 SO_2 and NO_x Emissions and VISTAS Class I Area Impacts

Table 1. Entergy Arkansas Inc-Independence Plant (05063-1083411)
Modeled SO_2 = 13,643.5 tpy, Modeled NOx = 4,486.3 tpy

Impacted VISTAS Class I Area	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Shining Rock Wilderness Area	0.129	0.001	12.313	1.04%	0.01%

Appendix F-2b

VISTAS Letter to IN Office of Air Quality
June 22, 2020

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

Visibility Improvement State and Tribal Association of the Southeast

June 22, 2020

Keith Baugues, Assistant Commissioner
Indiana Office of Air Quality
100 North Senate Avenue, IGCN 1003
Indianapolis, Indiana 46204

RE: Request for Regional Haze Reasonable Progress Analyses for Indiana Sources Impacting VISTAS Class I Areas

Dear Mr. Baugues:

The Regional Haze Regulation 40 CFR § 51.308(d) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." 40 CFR § 51.308(f) requires states to submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, states must establish a reasonable progress goal that provides for reasonable progress towards achieving natural visibility conditions for each mandatory Class I Federal area (Class I area) within their state. 40 CFR § 51.308(d)(1) requires that reasonable progress goals "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

In establishing reasonable progress goals, states must consider the four factors specified in § 169A of the Federal Clean Air Act and in 40 CFR § 51.308(f)(2)(i). The four factors are: 1) the cost of compliance, 2) the time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected sources. Consideration of these four factors is frequently referenced as the "four-factor analysis."

To assist its member states, the Visibility Improvement State and Tribal Association of the Southeast[1] (VISTAS) and its contractors conducted technical analyses to help states identify

[1] The VISTAS states are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

sources that significantly impact visibility impairment for Class I areas within and outside of the VISTAS region. VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. This AoI analysis involved running the HYSPLIT Trajectory Model to determine the origin of the air parcels affecting visibility within each Class I area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are most likely contributing to the visibility impairment at each Class I area. This information indicated that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from point sources. Next, VISTAS states used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions photochemical model (CAMx Model) to determine visibility impairment due to individual sources. PSAT results showed that in 2028 the majority of visibility impairment at VISTAS Class I areas will continue to be from point source SO_2 and NO_x emissions. Using the PSAT data, VISTAS states identified, for reasonable progress analysis, sources shown to have a sulfate or nitrate impact on one or more Class I areas greater than or equal to 1.00 percent of the total sulfate plus nitrate point source visibility impairment on the 20 percent most impaired days for each Class I area. This analysis has identified the following sources in Indiana that meet this criterion:

- Indianapolis Power & Light Petersburg (18125-7362411)
- Gibson (18051-7363111)
- Indiana Michigan Power DBA AEP Rockport (18147-8017211)

Information regarding projected 2028 SO_2 and NO_x emissions and visibility impacts on VISTAS Class I areas is shown in the tables attached to this letter (Attachment 1).

As required in 40 CFR § 51.308(d)(1)(i)(A), VISTAS, on behalf of Alabama, Georgia, Kentucky, North Carolina, Tennessee, and West Virginia, requests that Indiana conduct, or require that the sources in question initiate, and share when completed, the results of a reasonable progress analysis for each noted source with VISTAS. This will be helpful to the VISTAS states as they begin the formal Federal Land Manager consultation process for their individual draft Regional Haze Plans in early 2021. So that the VISTAS states can include the results of your state's reasonable progress analyses in developing the long-term strategies for Class I areas in their states, we request that you submit this information to VISTAS no later than October 30, 2020. If any reasonable progress analyses cannot be completed by this date, please provide, no later than this date, notice of an attainable date for completion of the analysis. If you determine that a four-factor analysis is not warranted for one or more of the identified sources, please provide the rationale for this determination by the requested date.

In developing projected 2028 emissions for these sources, VISTAS utilized ERTAC_16.1 emissions projections with additional input from LADCO. Please review these projections to

verify that they are reasonable. Should you be aware of significantly different emission projections for 2028 for any of the sources or pollutants, please provide revised estimates within thirty (30) days of the date of this letter. The applicable VISTAS states will review any revised emission estimates, determine if reasonable progress analyses are not needed to meet their regional haze obligations, and notify you accordingly.

Updated 2028 emission projections, if necessary, the results of your state's reasonable progress analyses for the requested sources, and any necessary ongoing communications should be sent via email to vistas@metro4-sesarm.org.

Should you have any questions concerning this request, please contact me through September 30, 2020, at 404-361-4000 or hornback@metro4-sesarm.org.

Sincerely,

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

Attachment

Copies: Ron Gore, Alabama Air Division
Karen Hays, Georgia Air Protection Branch
Melissa Duff, Kentucky Division for Air Quality
Mike Abraczinskas, North Carolina Division of Air Quality
Michelle Walker Owenby, Tennessee Division of Air Pollution Control
Laura Crowder, West Virginia Division of Air Quality
Zac Adelman, Lake Michigan Air Directors Consortium

Attachment 1: Projected 2028 SO_2 and NO_x Emissions and VISTAS Class I Area Impacts

Table 1. Indianapolis Power & Light Petersburg (18125-7362411)
Modeled SO_2 = 9,422.1 tpy, Modeled NOx = 5,355.6 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Sipsey Wilderness Area	0.258	0.026	16.370	1.57%	0.16%
Mammoth Cave National Park	0.264	0.068	25.289	1.04%	0.27%

Table 2. Gibson (18051-7363111)
Modeled SO_2 = 12,999.6 tpy, Modeled NOx = 8,620.0 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Sipsey Wilderness Area	0.270	0.029	16.370	1.65%	0.18%
Mammoth Cave National Park	0.411	0.084	25.289	1.63%	0.33%
Shining Rock Wilderness Area	0.151	0.008	12.313	1.23%	0.07%
Linville Gorge Wilderness Area	0.138	0.008	12.884	1.07%	0.07%
Great Smoky Mountains NP	0.146	0.037	13.916	1.05%	0.27%
Cohutta Wilderness Area	0.137	0.002	13.229	1.03%	0.02%
Joyce Kilmer-Slickrock Wilderness	0.139	0.029	13.694	1.02%	0.21%
Otter Creek Wilderness	0.193	0.009	19.077	1.01%	0.05%

Table 3. Indiana Michigan Power DBA AEP Rockport (18147-8017211)
Modeled SO_2 = 10,779.0 tpy, Modeled NOx = 8,475.1 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Sipsey Wilderness Area	0.327	0.050	16.370	1.99%	0.31%
Mammoth Cave National Park	0.426	0.085	25.289	1.68%	0.33%
Cohutta Wilderness Area	0.181	0.005	13.229	1.37%	0.04%
Shining Rock Wilderness Area	0.156	0.012	12.313	1.27%	0.09%
Great Smoky Mountains NP	0.166	0.035	13.916	1.19%	0.25%
Joyce Kilmer-Slickrock Wilderness	0.154	0.030	13.694	1.12%	0.22%
Linville Gorge Wilderness Area	0.142	0.012	12.884	1.10%	0.09%
Otter Creek Wilderness	0.191	0.007	19.077	1.00%	0.04%

west virginia department of environmental protection

Appendix F-2c

VISTAS Letter to MO Air Pollution Control Program June 22, 2020

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

Visibility Improvement State and Tribal Association of the Southeast

June 22, 2020

Darcy A. Bybee, Director
Missouri Air Pollution Control Program
PO Box 176
Jefferson City, Missouri 65102-0176

RE: Request for Regional Haze Reasonable Progress Analysis for Missouri Source Impacting VISTAS Class I Areas

Dear Ms. Bybee:

The Regional Haze Regulation 40 CFR § 51.308(d) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." 40 CFR § 51.308(f) requires states to submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, states must establish a reasonable progress goal that provides for reasonable progress towards achieving natural visibility conditions for each mandatory Class I Federal area (Class I area) within their state. 40 CFR § 51.308(d)(1) requires that reasonable progress goals "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

In establishing reasonable progress goals, states must consider the four factors specified in § 169A of the Federal Clean Air Act and in 40 CFR § 51.308(f)(2)(i). The four factors are: 1) the cost of compliance, 2) the time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected sources. Consideration of these four factors is frequently referenced as the "four-factor analysis."

To assist its member states, the Visibility Improvement State and Tribal Association of the Southeast[1] (VISTAS) and its contractors conducted technical analyses to help states identify

[1] The VISTAS states are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

sources that significantly impact visibility impairment for Class I areas within and outside of the VISTAS region. VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. This AoI analysis involved running the HYSPLIT Trajectory Model to determine the origin of the air parcels affecting visibility within each Class I area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are most likely contributing to the visibility impairment at each Class I area. This information indicated that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from point sources. Next, VISTAS states used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions photochemical model (CAMx Model) to determine visibility impairment due to individual sources. PSAT results showed that in 2028 the majority of visibility impairment at VISTAS Class I areas will continue to be from point source SO_2 and NO_x emissions. Using the PSAT data, VISTAS states identified, for reasonable progress analysis, sources shown to have a sulfate or nitrate impact on one or more Class I areas greater than or equal to 1.00 percent of the total sulfate plus nitrate point source visibility impairment on the 20 percent most impaired days for each Class I area. This analysis has identified the following source in Missouri that meets this criterion:

- New Madrid Power Plant-Marston (29143-5363811)

Information regarding projected 2028 SO_2 and NO_x emissions and visibility impacts on VISTAS Class I areas is shown in the table attached to this letter (Attachment 1).

As required in 40 CFR § 51.308(d)(1)(i)(A), VISTAS, on behalf of Alabama, Kentucky, and North Carolina, requests that Missouri conduct, or require that the source in question initiate, and share when completed, the results of a reasonable progress analysis for the noted source with VISTAS. This will be helpful to the VISTAS states as they begin the formal Federal Land Manager consultation process for their individual draft Regional Haze Plans in early 2021. So that the VISTAS states can include the results of your state's reasonable progress analysis in developing the long-term strategies for Class I areas in their states, we request that you submit this information to VISTAS no later than October 30, 2020. If the reasonable progress analysis cannot be completed by this date, please provide, no later than this date, notice of an attainable date for completion of the analysis. If you determine that a four-factor analysis is not warranted for the identified source, please provide the rationale for this determination by the requested date.

In developing projected 2028 emissions for the source, VISTAS utilized ERTAC_16.0 emissions projections and granted Missouri an opportunity for updates in February 2020. VISTAS is now giving another opportunity for review these projections to verify that they are reasonable.

Should you be aware of significantly different emission projections for 2028 for the source or pollutants, please provide revised estimates within thirty (30) days of the date of this letter. The applicable VISTAS states will review any revised emission estimates, determine if a reasonable progress analysis is not needed to meet their regional haze obligations, and notify you accordingly.

Updated 2028 emission projections, if necessary, the results of your state's reasonable progress analysis for the requested source, and any necessary ongoing communications should be sent via email to vistas@metro4-sesarm.org.

Should you have any questions concerning this request, please contact me through September 30, 2020, at 404-361-4000 or hornback@metro4-sesarm.org.

Sincerely,

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

Attachment

Copies: Ron Gore, Alabama Air Division
Melissa Duff, Kentucky Division for Air Quality
Mike Abraczinskas, North Carolina Division of Air Quality
Michael Vince, Central States Air Resource Agencies

Attachment 1: Projected 2028 SO_2 and NO_x Emissions and VISTAS Class I Area Impacts

Table 1. New Madrid Power Plant-Marston (29143-5363811)
Modeled SO_2 = 11,158.3 tpy, Modeled NOx = 4,054 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Sipsey Wilderness Area	0.220	0.012	16.370	1.34%	0.07%
Shining Rock Wilderness Area	0.158	0.001	12.313	1.28%	0.01%
Mammoth Cave National Park	0.289	0.022	25.289	1.14%	0.09%
Linville Gorge Wilderness Area	0.134	0.000	12.884	1.04%	0.00%

west virginia department of environmental protection

Appendix F-2d

VISTAS Letter to OH Division of Air Pollution Control June 22, 2020

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

Visibility Improvement State and Tribal Association of the Southeast

June 22, 2020

Robert F. Hodanbosi, Chief
Ohio Division of Air Pollution Control
122 South Front Street
Columbus, Ohio 43215-3425

RE: Request for Regional Haze Reasonable Progress Analyses for Ohio Sources Impacting VISTAS Class I Areas

Dear Mr. Hodanbosi:

The Regional Haze Regulation 40 CFR § 51.308(d) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." 40 CFR § 51.308(f) requires states to submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, states must establish a reasonable progress goal that provides for reasonable progress towards achieving natural visibility conditions for each mandatory Class I Federal area (Class I area) within their state. 40 CFR § 51.308(d)(1) requires that reasonable progress goals "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

In establishing reasonable progress goals, states must consider the four factors specified in § 169A of the Federal Clean Air Act and in 40 CFR § 51.308(f)(2)(i). The four factors are: 1) the cost of compliance, 2) the time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected sources. Consideration of these four factors is frequently referenced as the "four-factor analysis."

To assist its member states, the Visibility Improvement State and Tribal Association of the Southeast[1] (VISTAS) and its contractors conducted technical analyses to help states identify

[1] The VISTAS states are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

sources that significantly impact visibility impairment for Class I areas within and outside of the VISTAS region. VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. This AoI analysis involved running the HYSPLIT Trajectory Model to determine the origin of the air parcels affecting visibility within each Class I area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are most likely contributing to the visibility impairment at each Class I area. This information indicated that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from point sources. Next, VISTAS states used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions photochemical model (CAMx Model) to determine visibility impairment due to individual sources. PSAT results showed that in 2028 the majority of visibility impairment at VISTAS Class I areas will continue to be from point source SO_2 and NO_x emissions. Using the PSAT data, VISTAS states identified, for reasonable progress analysis, sources shown to have a sulfate or nitrate impact on one or more Class I areas greater than or equal to 1.00 percent of the total sulfate plus nitrate point source visibility impairment on the 20 percent most impaired days for each Class I area. This analysis has identified the following sources in Ohio that meet this criterion:

- Ohio Valley Electric Corp., Kyger Creek Station (39053-7983011)
- Cardinal Power Plant - Cardinal Operating Company (39081-8115711)
- General James M. Gavin Power Plant (39053-8148511)
- Duke Energy Ohio, Wm. H. Zimmer Station (39025-8294311)

Information regarding projected 2028 SO_2 and NO_x emissions and visibility impacts on VISTAS Class I areas is shown in the tables attached to this letter (Attachment 1).

As required in 40 CFR § 51.308(d)(1)(i)(A), VISTAS, on behalf of Alabama, Georgia, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia, requests that Ohio conduct, or require that the sources in question initiate, and share when completed, the results of a reasonable progress analysis for each noted source with VISTAS. This will be helpful to the VISTAS states as they begin the formal Federal Land Manager consultation process for their individual draft Regional Haze Plans in early 2021. So that the VISTAS states can include the results of your state's reasonable progress analyses in developing the long-term strategies for Class I areas in their states, we request that you submit this information to VISTAS no later than October 30, 2020. If any reasonable progress analyses cannot be completed by this date, please provide, no later than this date, notice of an attainable date for completion of the analysis. If you determine that a four-factor analysis is not warranted for one or more of the identified sources, please provide the rationale for this determination by the requested date.

In developing projected 2028 emissions for these sources, VISTAS utilized ERTAC_16.1 emissions projections with additional input from LADCO. Please review these projections to verify that they are reasonable. Should you be aware of significantly different emission projections for 2028 for any of the sources or pollutants, please provide revised estimates within thirty (30) days of the date of this letter. The applicable VISTAS states will review any revised emission estimates, determine if reasonable progress analyses are not needed to meet their regional haze obligations, and notify you accordingly.

Updated 2028 emission projections, if necessary, the results of your state's reasonable progress analyses for the requested sources, and any necessary ongoing communications should be sent via email to vistas@metro4-sesarm.org.

Should you have any questions concerning this request, please contact me through September 30, 2020, at 404-361-4000 or hornback@metro4-sesarm.org.

Sincerely,

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

Attachment

Copies: Ron Gore, Alabama Air Division
Karen Hays, Georgia Air Protection Branch
Mike Abraczinskas, North Carolina Division of Air Quality
Rhonda Thompson, South Carolina Bureau of Air Quality
Michelle Walker Owenby, Tennessee Division of Air Pollution Control
Mike Dowd, Virginia Air and Renewable Energy Division
Laura Crowder, West Virginia Division of Air Quality
Zac Adelman, Lake Michigan Air Directors Consortium

Attachment 1: Projected 2028 SO_2 and NO_x Emissions and VISTAS Class I Area Impacts

Table 1. Ohio Valley Electric Corp., Kyger Creek Station (39053-7983011)
Modeled SO_2 = 4,278.0 tpy, Modeled NOx = 6,267.3 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Otter Creek Wilderness	0.242	0.004	19.077	1.27%	0.02%
Dolly Sods Wilderness	0.229	0.003	19.349	1.18%	0.02%
James River Face Wilderness	0.170	0.006	14.404	1.18%	0.04%
Shenandoah NP	0.155	0.009	15.375	1.01%	0.06%

Table 2. Cardinal Power Plant - Cardinal Operating Company (39081-8115711)
Modeled SO_2 = 9,891.9 tpy, Modeled NOx = 4,044.8 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Shenandoah NP	0.692	0.018	15.375	4.50%	0.12%
Dolly Sods Wilderness	0.778	0.007	19.349	4.02%	0.03%
Otter Creek Wilderness	0.727	0.008	19.077	3.81%	0.04%
James River Face Wilderness	0.520	0.008	14.404	3.61%	0.06%
Swanquarter Wilderness Area	0.203	0.007	10.894	1.86%	0.06%

Table 3. General James M. Gavin Power Plant (39053-8148511)
Modeled SO_2 = 21,838.6 tpy, Modeled NOx = 7,982.6 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Otter Creek Wilderness	1.001	0.011	19.077	5.25%	0.06%
Dolly Sods Wilderness	0.945	0.009	19.349	4.88%	0.05%
James River Face Wilderness	0.582	0.016	14.404	4.04%	0.11%
Shenandoah NP	0.576	0.022	15.375	3.75%	0.14%
Great Smoky Mountains NP	0.520	0.003	13.916	3.73%	0.02%
Linville Gorge Wilderness Area	0.446	0.002	12.884	3.46%	0.02%
Joyce Kilmer-Slickrock Wilderness	0.473	0.002	13.694	3.45%	0.01%
Cohutta Wilderness Area	0.322	0.009	13.229	2.44%	0.07%
Shining Rock Wilderness Area	0.297	0.001	12.313	2.41%	0.01%
Cape Romain Wilderness	0.305	0.005	14.028	2.17%	0.04%
Swanquarter Wilderness Area	0.219	0.005	10.894	2.01%	0.05%
Sipsey Wilderness Area	0.327	0.021	16.370	1.99%	0.13%
Wolf Island Wilderness	0.224	0.003	12.957	1.73%	0.02%
Okefenokee Wilderness Area	0.203	0.002	13.400	1.51%	0.01%

Table 4. Duke Energy Ohio, Wm. H. Zimmer Station (39025-8294311)
Modeled SO_2 = 10,346.3 tpy, Modeled NOx = 5,864.1 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Otter Creek Wilderness	0.302	0.012	19.077	1.58%	0.06%
Dolly Sods Wilderness	0.288	0.010	19.349	1.49%	0.05%
Cohutta Wilderness Area	0.173	0.005	13.229	1.31%	0.04%
Shining Rock Wilderness Area	0.129	0.002	12.313	1.05%	0.01%
Joyce Kilmer-Slickrock Wilderness	0.137	0.002	13.694	1.00%	0.01%

west virginia department of environmental protection

Appendix F-2e

VISTAS Letter to PA Bureau of Air Quality
June 22, 2020

West Virginia Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Promoting a healthy environment

Visibility Improvement State and Tribal Association of the Southeast

June 22, 2020

Virendra Trivedi, Acting Director
Pennsylvania Bureau of Air Quality
PO Box 8468
Harrisburg, Pennsylvania 17105-8468

RE: Request for Regional Haze Reasonable Progress Analyses for Pennsylvania Sources Impacting VISTAS Class I Areas

Dear Mr. Trivedi:

The Regional Haze Regulation 40 CFR § 51.308(d) requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." 40 CFR § 51.308(f) requires states to submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, states must establish a reasonable progress goal that provides for reasonable progress towards achieving natural visibility conditions for each mandatory Class I Federal area (Class I area) within their state. 40 CFR § 51.308(d)(1) requires that reasonable progress goals "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

In establishing reasonable progress goals, states must consider the four factors specified in § 169A of the Federal Clean Air Act and in 40 CFR § 51.308(f)(2)(i). The four factors are: 1) the cost of compliance, 2) the time necessary for compliance, 3) the energy and non-air quality environmental impacts of compliance, and 4) the remaining useful life of any potentially affected sources. Consideration of these four factors is frequently referenced as the "four-factor analysis."

To assist its member states, the Visibility Improvement State and Tribal Association of the Southeast[1] (VISTAS) and its contractors conducted technical analyses to help states identify

[1] The VISTAS states are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

sources that significantly impact visibility impairment for Class I areas within and outside of the VISTAS region. VISTAS initially used an Area of Influence (AoI) analysis to identify the areas and sources most likely contributing to poor visibility in Class I areas. This AoI analysis involved running the HYSPLIT Trajectory Model to determine the origin of the air parcels affecting visibility within each Class I area. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that are most likely contributing to the visibility impairment at each Class I area. This information indicated that the pollutants and sector with the largest impact on visibility impairment were sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from point sources. Next, VISTAS states used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the Comprehensive Air Quality Model with extensions photochemical model (CAMx Model) to determine visibility impairment due to individual sources. PSAT results showed that in 2028 the majority of visibility impairment at VISTAS Class I areas will continue to be from point source SO_2 and NO_x emissions. Using the PSAT data, VISTAS states identified, for reasonable progress analysis, sources shown to have a sulfate or nitrate impact on one or more Class I areas greater than or equal to 1.00 percent of the total sulfate plus nitrate point source visibility impairment on the 20 percent most impaired days for each Class I area. This analysis has identified the following sources in Pennsylvania that meet this criterion:

- NRG Wholesale Gen/Seward Gen Sta (42063-3005111)
- Homer City Gen LP/Center TWP (42063-3005211)
- Genon NE Mgmt Co/Keystone Sta (42005-3866111)

Information regarding projected 2028 SO_2 and NO_x emissions and visibility impacts on VISTAS Class I areas is shown in the tables attached to this letter (Attachment 1).

As required in 40 CFR § 51.308(d)(1)(i)(A), VISTAS, on behalf of Georgia, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia, requests that Pennsylvania conduct, or require that the sources in question initiate, and share when completed, the results of a reasonable progress analysis for each noted source with VISTAS. This will be helpful to the VISTAS states as they begin the formal Federal Land Manager consultation process for their individual draft Regional Haze Plans in early 2021. So that the VISTAS states can include the results of your state's reasonable progress analyses in developing the long-term strategies for Class I areas in their states, we request that you submit this information to VISTAS no later than October 30, 2020. If any reasonable progress analyses cannot be completed by this date, please provide, no later than this date, notice of an attainable date for completion of the analysis. If you determine that a four-factor analysis is not warranted for one or more of the identified sources, please provide the rationale for this determination by the requested date.

In developing projected 2028 emissions for these sources, VISTAS utilized ERTAC_16.0 emissions projections and sought additional input from Pennsylvania in February 2020. Please

review these projections to verify that they are reasonable. Should you be aware of significantly different emission projections for 2028 for any of the sources or pollutants, please provide revised estimates within thirty (30) days of the date of this letter. The applicable VISTAS states will review any revised emission estimates, determine if reasonable progress analyses are not needed to meet their regional haze obligations, and notify you accordingly.

Updated 2028 emission projections, if necessary, the results of your state's reasonable progress analyses for the requested sources, and any necessary ongoing communications should be sent via email to vistas@metro4-sesarm.org.

Should you have any questions concerning this request, please contact me through September 30, 2020, at 404-361-4000 or hornback@metro4-sesarm.org.

Sincerely,

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

Attachment

Copies: Karen Hays, Georgia Air Protection Branch
Mike Abraczinskas, North Carolina Division of Air Quality
Rhonda Thompson, South Carolina Bureau of Air Quality
Michelle Walker Owenby, Tennessee Division of Air Pollution Control
Mike Dowd, Virginia Air and Renewable Energy Division
Laura Crowder, West Virginia Division of Air Quality
Marc Cone, Mid-Atlantic Regional Air Management Association
Paul Miller, Northeast States for Coordinated Air Use Management

Attachment 1: Projected 2028 SO_2 and NO_x Emissions and VISTAS Class I Area Impacts

Table 1. NRG Wholesale Gen/Seward Gen Sta (42063-3005111)
Modeled SO_2 = 6,813.9 tpy, Modeled NOx = 1,632.9 tpy

Impacted VISTAS Class I Area	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Shenandoah NP	0.172	0.003	15.375	1.12%	0.02%

Table 2. Homer City Gen LP/Center TWP (42063-3005211)
Modeled SO_2 = 9,274.9 tpy, Modeled NOx = 4,962.3 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Shenandoah NP	0.274	0.010	15.375	1.78%	0.06%
Swanquarter Wilderness Area	0.151	0.008	10.894	1.38%	0.07%

Table 3. Genon NE Mgmt Co/Keystone Sta (42005-3866111)
Modeled SO_2 = 21,066.4 tpy, Modeled NOx = 5,086.3 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Shenandoah NP	0.740	0.009	15.375	4.81%	0.06%
Swanquarter Wilderness Area	0.375	0.009	10.894	3.44%	0.09%
Cape Romain Wilderness	0.320	0.002	14.028	2.28%	0.01%
Linville Gorge Wilderness Area	0.235	0.000	12.884	1.82%	0.00%
James River Face Wilderness	0.217	0.005	14.404	1.51%	0.04%
Dolly Sods Wilderness	0.246	0.001	19.349	1.27%	0.00%
Shining Rock Wilderness Area	0.151	0.000	12.313	1.23%	0.00%
Great Smoky Mountains NP	0.166	0.001	13.916	1.19%	0.01%
Wolf Island Wilderness	0.149	0.002	12.957	1.15%	0.01%
Joyce Kilmer-Slickrock Wilderness	0.154	0.000	13.694	1.12%	0.00%
Cohutta Wilderness Area	0.137	0.002	13.229	1.04%	0.01%
Okefenokee Wilderness Area	0.137	0.002	13.400	1.02%	0.01%
Otter Creek Wilderness	0.190	0.001	19.077	1.00%	0.00%