

#### STATE OF OKLAHOMA

### OFFICE OF THE SECRETARY OF ENVIRONMENT

June 14, 2013

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Mr. Ron Curry, Regional Administrator (6RA) U.S. Environmental Protection Agency – Region VI 1445 Ross Avenue, Suite 1200 Dallas, TX 75202-2733

Subject: Oklahoma Regional Haze State Implementation Plan ("SIP") Revision

Including Revisions to Affected Portions of the Interstate Transport SIP for

1997 8-Hour Ozone and 1997 PM<sub>2.5</sub> NAAQS

Dear Mr. Curry:

In a letter to your predecessor dated March 30, 2011, Governor Mary Fallin appointed me as her designee for the purpose of submitting documents to the U.S. Environmental Protection Agency (EPA) for approval and incorporation into the State Implementation Plan ("SIP") for the State of Oklahoma. The Oklahoma Department of Environmental Quality ("DEQ") is given the primary responsibility and authority to prepare and implement the state's air quality management plan under the Oklahoma Statutes.

Accordingly, the State of Oklahoma submits for your review under §§110 and 169A of the federal Clean Air Act and 40 CFR Part 51, a revision of the Oklahoma Regional Haze State Implementation Plan, submitted in February 2010, and the associated evidence as required by 40 CFR 51, Appendix V, 2.1. This revision of the Regional Haze SIP addresses EPA's regional haze regulations, 40 CFR § 51.308, as they relate to the BART determination for American Electric Power/Public Service Company of Oklahoma ("AEP/PSO") Northeastern Power Station Units 3 & 4. Also, this SIP revision includes revisions to affected portions of the Interstate Transport SIP for the 1997 8-hour Ozone and 1997 PM<sub>2.5</sub> NAAQS, submitted in May 2007 (including supplemental information submitted in November 2007), and is intended to replace the related EPA-issued FIP as it relates to the subject facility.

In a letter dated March 20, 2013, parallel processing of this submittal in accordance with the EPA guidance in Janet McCabe's October 31, 2011 Memorandum (Subject: Options and Efficiency Tools for EPA Action on State Implementation Plan Submittals) was requested. DEQ conducted a public hearing regarding the SIP revision on May 20, 2013. While there were minor wording changes to address comments received during the comment period, no substantive changes were made to the proposed SIP revision.

As required by 40 CFR § 51.103(a) and regional guidance, included with this letter are two paper copies and an identical electronic copy (on CD) of the submittal. Electronic access to the submittal is also currently available via a link on the DEQ Regional Haze webpage at:

http://www.deq.state.ok.us/aqdnew/RulesAndPlanning/Regional\_Haze\_rev2013



Mr. Ron Curry U.S. EPA – Region VI June 14, 2013

If you have questions, please contact me or Eddie Terrill, Director of DEQ's Air Quality Division, at (405) 702-4154.

Sincerely

Gary Sherrer

Secretary of Environment

Enclosures

cc: Steve Thompson, Executive Director, Department of Environmental Quality

Eddie Terrill, Director, DEQ Air Quality Division

Guy Donaldson, Section Chief, Air Planning Section, EPA Region VI (6PD-L)

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### Regional Haze Implementation Plan Revision

[Including Revisions to Affected Portions of the Interstate Transport SIP for the 1997 8-hour Ozone and  $1997 PM_{2.5} NAAQS$ ]

### State of Oklahoma

Department of Environmental Quality

June 14, 2013

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#### I. Background

#### A. Regional Haze SIP

Oklahoma submitted its Regional Haze Implementation Plan Revision ("Regional Haze SIP" or "RH SIP") in February 2010. The U.S. Environmental Protection Agency ("EPA") approved core elements of the Regional Haze SIP effective January 27, 2012 (76 Fed.Reg. 81727, Dec. 28, 2011), codified at 40 C.F.R. § 52.1920). In the same action, EPA approved Oklahoma's Best Available Retrofit Technology ("BART") determinations for the majority of emissions units subject to BART, but disapproved the sulfur dioxide ("SO<sub>2</sub>") BART determinations for several emissions units (40 C.F.R. § 52.1928), and issued a Federal Implementation Plan ("FIP") covering those units (40 C.F.R. § 52.1923). As part of this action, EPA also disapproved the State's submitted Regional Haze Long Term Strategy because it relied in part on the BART limits in the disapproved determinations. Specifically, EPA disapproved the SO<sub>2</sub> BART determinations for Units 3 and 4 of the American Electric Power/Public Service Company of Oklahoma ("AEP/PSO") Northeastern Power Station in Rogers County ("Northeastern Units 3 and 4"), including Section VI(E), "Greater Reasonable Progress Alternative Determination" and the associated PSO Regional Haze Agreement, Case No. 10-025. The final action approved the Oklahoma Regional Haze SIP's SO<sub>2</sub>, oxides of nitrogen ("NO<sub>x</sub>"), and particulate matter ("PM") BART determinations for the AEP/PSO Northeastern Unit 2, and the NO<sub>X</sub> and PM BART determination for the AEP/PSO Northeastern Units 3 and 4.

Subsequent to publishing the final FIP, AEP/PSO, DEQ, EPA, and the U.S. Department of Justice entered discussions on alternatives to the FIP requirements that would provide the necessary visibility improvements. Notice of the resulting proposed settlement agreement was published in the Federal Register on November 14, 2012.<sup>1</sup> The final settlement agreement outlines a strategy for AEP/PSO to meet its obligations under the visibility provisions of the Federal Clean Air Act. The final settlement agreement became effective with the signature of a U.S. Department of Justice representative on February 8, 2013.

With this submittal, the State of Oklahoma is revising those portions of its Regional Haze SIP that relate to the  $SO_2$  and  $NO_X$  BART determinations for AEP/PSO's Northeastern Units 3 and 4. This revision of the Regional Haze SIP addresses the requirements of the visibility provisions of the Federal Clean Air Act, 42 U.S.C. § 7491, and EPA's regional haze regulations, 40 C.F.R. § 51.308, as they relate to AEP/PSO's Northeastern Units 3 and 4. Moreover, this revision is intended to obviate the need for and replace the corresponding EPA-issued FIP as it relates to Northeastern Units 3 and 4. Specifically, the revision is intended to result in the removal of all references to Northeastern Units 3 and 4 in 40 C.F.R. §§ 52.1923 and 52.1928.

#### B. Interstate Transport SIP

Oklahoma submitted its <u>Interstate Transport SIP for an Assessment of Oklahoma's Impact on</u>
Downwind Nonattainment for the National Ambient 8-hour Ozone and PM<sub>2.5</sub> Air Quality Standards

<sup>&</sup>lt;sup>1</sup>77 Fed.Reg. 67814 (Nov. 14, 2012). The Settlement Agreement (Appendix I) for Public Service Company of Oklahoma's ("PSO's") Petition for Review was entered into by PSO, the Oklahoma Secretary of the Environment, DEQ, EPA, and the Sierra Club.

("Transport SIP") to EPA in May 2007 (including supplemental information submitted in November 2007). EPA has taken several actions, codified at 40 C.F.R. § 52.1920, to give partial approval/disapproval of the Transport SIP as it addresses various aspects of the required elements of § 110(a)(2)(D) of the Federal Clean Air Act, 42 U.S.C. § 7410(a)(2(D). See 75 Fed.Reg. 72701 (Nov. 26, 2010); 76 Fed.Reg. 81838 (Dec. 29, 2011); and 77 Fed.Reg. 3933 (Jan. 26, 2011). EPA's 2011 action on Oklahoma's Regional Haze SIP also addressed interstate transport of pollutants and visibility protection as follows:

We are partially approving and partially disapproving a portion of a SIP revision we received from the State of Oklahoma on May 10, 2007, as supplemented on December 10, 2007, for the purpose of addressing the 'good neighbor' provisions of the CAA section 110(a)(2)(D)(i) with respect to visibility for the 1997 8-hour ozone NAAQS and the PM<sub>2.5</sub> NAAQS.

. . .

We are finalizing a FIP to address the requirements of section 110(a)(2)(D)(i)(II) with respect to visibility to ensure that emissions from sources in Oklahoma do not interfere with the visibility programs of other states. We find that the controls under this FIP, in combination with the controls required by the portion of the Oklahoma RH submittal that we are approving, will serve to prevent sources in Oklahoma from emitting pollutants in amounts that will interfere with efforts to protect visibility in other states.

76 Fed.Reg. 81757 (Dec. 28, 2011). This SIP revision addresses the requirements of the interstate transport provisions of the Federal Clean Air Act, 42 U.S.C. 7410(a)(2)(D)(i)(II) as they relate to AEP/PSO's Northeastern Units 3 and 4. Moreover, this revision is intended to obviate the need for and replace the corresponding EPA-issued FIP as it relates to Northeastern Units 3 and 4. Specifically, the revision is intended to result in the removal of all references to Northeastern Units 3 and 4 in 40 C.F.R. §§ 52.1923 and 52.1928.

#### II. Revised Best Available Retrofit Technology for AEP/PSO Northeastern Units 3 and 4

#### A. Source Description

AEP/PSO Northeastern Power Station is located in Rogers County, Oklahoma. The station includes one (1) 495 MW gas-fired steam electric generating unit designated as Northeastern Unit 2 and two (2) 490 MW coal-fired steam electric generating units designated as Northeastern Units 3 and 4. Note that EPA approved the BART determination for Northeastern Unit 2 and the portion of the BART determination not related to  $SO_2$  for Northeastern Units 3 and 4. See 76 Fed.Reg. 81727 (Dec. 28, 2011). The facility is currently permitted to operate under DEQ Air Quality Permit No. 2003-410-TVR (M-3), which was issued on March 8, 2012.

#### **B.** Determination of BART Requirements

Oklahoma's original Regional Haze SIP documented how DEQ conducted a case-by-case five-factor BART analysis for each of the BART-subject units. Based on information and cost estimates

provided by the affected facilities at that time, DEQ determined that Dry Flue Gas Desulfurization with Spray Dryer Absorber ("DFGD/SDA") was not cost-effective for SO<sub>2</sub> control for PSO Northeastern Units 3 and 4. The determination also included additional compliance options, including a Greater Reasonable Progress Alternative Determination. In its disapproval, EPA disagreed with DEQ's application of the costing methodologies, and consequently issued a FIP with emission limits that assumed application of DFGD/SDA technology.

On November 20, 2012, AEP/PSO submitted to DEQ the Supplemental BART Determination Information, which proposed a revised BART as part of AEP/PSO's long-term multi-media, multi-pollutant plan. The BART determination for AEP/PSO Northeastern Units 3 and 4 has been revised based on this information. The Revised BART Determination, attached as Appendix II, provides that the facility will install and operate a dry sorbent injection ("DSI") system on one of the units (either Unit 3 or 4) to meet an  $SO_2$  emission standard of 0.40 lb/mmBTU or less by April 16, 2016. This determination relies on voluntary emission reductions provided in the Supplemental BART Determination Information, including retirement of one of the affected units by April 16, 2016.

Table II-1 reflects actual emissions from baseline (2004 – 2006) operations. These emissions were used in the evaluations of cost effectiveness to provide bases for realistic estimates of the emissions controlled (or removed) through the implementation of BART and additional voluntary measures. Table II-2 summarizes the future potential emissons of Units 3 and 4 after application of the BART control technologies, emission limits, and additional voluntary measures. The data in this table reflects future potential emissions rather than projected actual emissions as the estimates are based on full capacity utilization. DEQ entered into an enforceable administrative order with AEP/PSO for Northeastern Units 3 and 4 (attached as Appendix III<sup>2</sup>) requiring the installation and operation of BART, the achievement of the associated BART emission limitations, and specific voluntary measures related to early implementation of reduced  $SO_2$  and  $NO_X$  emission rates, unit retirements and capacity restrictions. The administrative order requires AEP/PSO to obtain necessary permit modifications that will also include a requirement, schedule, and procedures to ensure that the source properly installs, operates, monitors, and maintains any required control equipment. Therefore, the emission rates in this table are enforceable through the First Amended Regional Haze Agreement and will be incorporated into subsequent permits. [For simplicity, the table reflects AEP/PSO's indication that Unit 4 is the likely unit to be shut down in 2016, but there is no requirement as to which of the two units is shut down first.]

Table II-1: Baseline control technologies and emissions for AEP/PSO Northeastern Units 3 and 4

| Baseline Emissions          |  |                 |                 |  |
|-----------------------------|--|-----------------|-----------------|--|
|                             |  | Unit 3          | Unit 4          |  |
| Design Heat Input to Boiler |  | 4,775 mmBtu/hr  | 4,775 mmBtu/hr  |  |
|                             | Control                                    | Low-Sulfur Coal | Low-Sulfur Coal |  |
| SO <sub>2</sub>             | Emission Rate (lb/mmBtu)                   | 0.9 lb/mmBtu    | 0.9 lb/mmBtu    |  |
|                             | Combined Annual Emission Rate <sup>1</sup> | 31,999 TPY      |                 |  |

<sup>&</sup>lt;sup>2</sup>Appendix III contains the First Amended Regional Haze Agreement, Case No. 10-025, which amends and updates the PSO Regional Haze Agreement, Case No. 10-025, attached as Item 2 in Appendix 6-5 of the original Regional Haze SIP submittal.

|                  | Control                                    | 1 <sup>st</sup> Generation LNB w/ OFA <sup>2</sup> | 1 <sup>st</sup> Generation LNB w/ OFA <sup>2</sup> |  |
|------------------|--|--|--|--|
| $NO_X$           | Emission Rate (lb/mmBtu)                   | 0.40 lb/mmBtu                                      | 0.40 lb/mmBtu                                      |  |
|                  | Combined Annual Emission Rate <sup>1</sup> | 14,222   | 2 TPY  |  |
|                  |  |  |  |  |
|                  | Control                                    | Electrostatic precipitator                         | Electrostatic precipitator                         |  |
| PM <sub>10</sub> | Control Emission Rate (lb/mmBtu)           | Electrostatic precipitator 0.10 lb/mmBtu           | Electrostatic precipitator 0.10 lb/mmBtu           |  |

<sup>&</sup>lt;sup>1</sup>85% Capacity Factor and lb/mmBtu emission rates developed from 2004-2006 annual average operating data.

Table II-2: Implementation of BART control technologies and emission limits for AEP/PSO Northeastern Units 3 and 4

|                   | ninary/BART Control Steps (Prior to  | Jnil 4 Shuldown )  |  |
|-------------------|--|--|--|
| By De             | cember 31, 2013  | Unit 3   | Unit 4   |
|                   | Control  | LNB w/ Separated OFA <sup>2</sup>  | LNB w/ Separated OFA <sup>2</sup>  |
|                   | Emission Rate (lb/mmBtu)   | 0.23 lb/mmBtu  | 0.23 lb/mmBtu  |
| NO.               |  | (30-day rolling average)   | (30-day rolling average)   |
| NO <sub>x</sub>   | Hourly Emission Rate   | 1,098 lb/hr  | 1,098 lb/hr  |
|                   |  | (30-day rolling average)   | (30-day rolling average)   |
|                   | Combined Annual Emission Rate  | 9,620 TPY (12-r  | month rolling)   |
| By Jar            | nuary 31, 2014   | Unit 3   | Unit 4   |
|                   | Control  | Low Sulfur Coal  | Low Sulfur Coal  |
|                   | Emission Rate (lb/mmBtu)   | 0.65 lb/mmBtu <sup>3</sup>   | 0.65 lb/mmBtu  |
| $SO_2$            |  | (30-day rolling average)   | (30-day rolling average)   |
|                   | Hourly Emission Rate   | 3,104 lb/hr  | 3,104 lb/hr  |
|                   |  | (30-day rolling average)   | (30-day rolling average)   |
| By De             | cember 31, 2014  | Unit3  | Unit 4   |
|                   | Control  | Low Sulfur Coal  | Low Sulfur Coal  |
| SO <sub>2</sub>   | Emission Rate (lb/mmBtu)   | 0.60 lb/mmBtu  | 0.60 lb/mmBtu  |
| 302               |  | (12-month rolling average)   | (12-month rolling average)   |
|                   | Combined Annual Emission Rate  | 25,097 TPY (12-month rolling)  |  |
|                   | Control (with Unit 4 Shutdown <sup>1</sup> )                                       |  |  |
| By April 16, 2016 |  |  |  |
| ву Ар             | oril 16, 2016  | Unit   | : 3 <sup>1</sup>   |
| ву Ар             | ril 16, 2016<br>Control  | Unit<br>Dry Sorbent Injection (DSI) wit  |  |
|                   |  |  | h Activated Carbon Injection   |
| SO <sub>2</sub>   | Control  | Dry Sorbent Injection (DSI) wit  | h Activated Carbon Injection<br>ay rolling average)  |
|                   | Control Emission Rate (lb/mmBtu)   | Dry Sorbent Injection (DSI) wit<br>0.4 lb/mmBtu (30-d  | th Activated Carbon Injection ay rolling average) y rolling average)   |
|                   | Control Emission Rate (lb/mmBtu) Hourly Emission Rate                              | Dry Sorbent Injection (DSI) wit<br>0.4 lb/mmBtu (30-d<br>1,910 lb/hr (30-da  | ch Activated Carbon Injection ay rolling average) y rolling average) TPY   |
| SO <sub>2</sub>   | Control Emission Rate (lb/mmBtu) Hourly Emission Rate Annual Emission Rate         | Dry Sorbent Injection (DSI) wit<br>0.4 lb/mmBtu (30-d<br>1,910 lb/hr (30-da<br>8,366                                 | th Activated Carbon Injection ay rolling average) y rolling average) TPY rther Control System Tuning)                      |
|                   | Control Emission Rate (lb/mmBtu) Hourly Emission Rate Annual Emission Rate Control | Dry Sorbent Injection (DSI) wit<br>0.4 lb/mmBtu (30-d<br>1,910 lb/hr (30-da<br>8,366<br>LNB w/ Separated OFA (and Fu | ch Activated Carbon Injection ay rolling average) y rolling average) TPY rther Control System Tuning) day rolling average) |

<sup>&</sup>lt;sup>1</sup>For simplicity, the table reflects AEP/PSO's indication that Unit 4 is the likely unit to be shut down in 2016, but there is no requirement as to which of the two units is shut down first.

<sup>&</sup>lt;sup>2</sup>LNB = Low NOx Burners

OFA = Over-fired Air

<sup>&</sup>lt;sup>2</sup>LNB = Low NOx Burners

OFA = Over-fired Air

<sup>&</sup>lt;sup>3</sup>An alternative operating scenario is provided in paragraph 12 of the First Amended Regional Haze Agreement, Case No. 10-025, that addresses potential disruption of coal supplies during the time period from January 31, 2014 through April 16, 2016.

The application of BART to AEP/PSO Northeastern Units 3 and 4 provides an estimated emission reduction of 24,888 tons of  $SO_2$  per year from the baseline beginning in 2016, based on projection of the historically representative 85% capacity utilization through 2020. Table II-3 shows these BART reductions, as well as estimated  $NO_X$  emission reductions for the same timeframe.

Table II-3: BART-Level emissions reductions from the baseline, AEP/PSO Northeastern Units 3 and 4

|                 | Baseline Emissions<br>(Units 3 and 4 Combined) |        | BART Emissions<br>(Beginning 4/16/2016 - Unit 3 Only) |       | Emission Reductions (Beginning 4/16/2016) |
|-----------------|--|--------|---|-------|---|
|                 | lb/MMBTU                                       | TPY    | lb/MMBTU  | TPY   | TPY                                       |
| SO <sub>2</sub> | 0.9  | 31,999 | 0.4   | 7,111 | 24,888                                    |
| NO <sub>x</sub> | 0.40   | 14,222 | 0.15  | 2,667 | 11,555                                    |

Table II-4 indicates the baseline and anticipated improvement in visibility at mandatory federal Class I areas due to the shutdown of a unit and the installation of  $SO_2$  and  $NO_X$  controls (DSI and LNB w/OFA, respectively) on the remaining unit at AEP/PSO Northeastern, calculated as the 3-year average of the  $98^{th}$  percentile modeled visibility impairment.

Table II-4: Class I Areas Baseline and Visibility improvement with BART controls

| Contribution to Visibility Impairment for each Class I Area         |  |       |       |       |  |
|---|--|-------|-------|-------|--|
|   | Wichita Mountains Caney Creek Upper Buffalo Hercules Glade |       |       |       |  |
| $(\Delta - dv)$ $(\Delta - dv)$ $(\Delta - dv)$ $(\Delta - dv)$     |  |       |       |       |  |
| Baseline Impairment   | 1.501  | 1.627 | 1.169 | 1.112 |  |
| SO <sub>2</sub> Control   | 0.464  | 0.553 | 0.402 | 0.332 |  |
| (NO <sub>x</sub> Baseline)  |  |       |       |       |  |
| NO <sub>x</sub> and SO <sub>2</sub> Control 0.295 0.294 0.216 0.209 |  |       |       |       |  |
| Percent Improvement   | 80%  | 82%   | 82%   | 81%   |  |
| (Reduction)   |  |       |       |       |  |

# III. Further Reasonable Progress and Amended Long-term Strategy with Emission Reduction

The long-term strategy described in Chapter VII of Oklahoma's original Regional Haze SIP submittal addresses visibility impairment at the Wichita Mountains Class I area, and covers the period through 2018 in fulfillment of 40 C.F.R. § 51.308(d)(3). The long-term strategy includes issuance and enforcement of permits limiting emissions from major and minor sources in Oklahoma, state rules which specifically limit targeted emissions sources and categories, and several other ongoing air pollution control programs.

The emissions limitations and other requirements necessary to implement the BART requirements for AEP/PSO's Northeastern Units 3 and 4 will be incorporated into required DEQ Air

Quality Permit(s), as discussed herein. AEP/PSO's Supplemental BART Determination Information and the First Amended Regional Haze Agreement also provide for further reasonable progress through a schedule of NO<sub>X</sub> emissions reductions earlier than the schedule in the previously-approved portion of the Regional Haze SIP, as listed in Table II-2. In addition, the agreement provides for incremental decreases in capacity utilization between January 1, 2021 and December 31, 2026, when the remaining unit will be shut down, with the corresponding reduced emissions listed in Table III-1.

Table III-1: Further Reductions

| Further Reasonable Progress over Remaining Unit Life – Unit 3 Emissions during Incremental Decrease in Capacity Utilization |           |           |  |  |
|---|-----------|-----------|--|--|
| SO <sub>2</sub> NO <sub>X</sub>   |           |           |  |  |
| January 1, 2021 – 70% Utilization   | 5,856 TPY | 2,196 TPY |  |  |
| January 1, 2023 – 60% Utilization   | 5,019 TPY | 1,882 TPY |  |  |
| January 1, 2025 - 50% Utilization 4,183 TPY 1,569 TPY   |           |           |  |  |
| December 31, 2026 Unit Shutdown   |           |           |  |  |

The First Amended Regional Haze Agreement ultimately provides for Further Reasonable Progress through the reduction of 31,999 tons of  $SO_2$  per year from the baseline following shutdown of the remaining unit after 2026. Table III-2 shows these reductions from the baseline, as well as estimated  $NO_X$  emission reductions, based on the planned incremental decrease in capacity utilization for Unit 3 between 2021 and 2026.

Table III-2: Further Reasonable Progress emissions reductions from the baseline

| Further Reasonable Progress Reductions over Remaining Unit Life |            |            |  |  |  |
|---|------------|------------|--|--|--|
| SO <sub>2</sub> NO <sub>X</sub>                                 |            |            |  |  |  |
| January 1, 2021 – 70% Utilization                               | 26,143 TPY | 12,026 TPY |  |  |  |
| January 1, 2023 – 60% Utilization                               | 26,980 TPY | 12,340 TPY |  |  |  |
| January 1, 2025 - 50% Utilization                               | 27,816 TPY | 12,653 TPY |  |  |  |
| December 31, 2026 (Both Units Shut Down)                        | 31,999 TPY | 14,222 TPY |  |  |  |

As required by subparagraph 26(E) of the First Amended Regional Haze Agreement, AEP/PSO will develop and propose a monitoring program to test various operating profiles and other measures required under subparagraph 26(D) to determine whether increased SO<sub>2</sub> removal efficiencies can be achieved during normal operations. The monitoring program will be developed and proposed during the first year of operation of the required controls. AEP/PSO will submit the monitoring program to EPA and ODEQ for review, and will implement the monitoring program during the second and third years of operation of the DSI system. AEP/PSO will evaluate and report the results of the monitoring program to EPA and ODEQ. If the evaluation demonstrates that the technology is capable of sustainably achieving an emission rate of less than 0.37 lb/MMBtu on a 30-day rolling average basis without: (1) altering the unit's fuel supply; (2) incurring additional capital costs; (3) increasing operating expenses by more than a negligible amount; and/or (4) adversely impacting overall unit operations, the emission rate will be adjusted by 60% of the difference between 0.40 lb/MMBtu and the demonstrated emission rate. If the

demonstrated emission rate is 0.37 lb/MMbtu or greater, no adjustment will be made and the emission rate from the remaining unit will remain at 0.40 lb/MMBtu.

If the SO<sub>2</sub> emission rate for the remaining coal-fired unit (Northeastern Unit 3) is not reduced to 0.30 lb/mmBtu after the implementation of the control requirements set forth in this revision and the incorporated First Amended Regional Haze Agreement, then DEQ commits to obtain and/or identify additional SO<sub>2</sub> reductions within the State of Oklahoma to the extent necessary to achieve the anticipated visibility benefits estimated in the CENRAP Base G 2018 regional haze modeling and attributable to reductions in SO<sub>2</sub> emissions after installation of presumptive controls on AEP/PSO Northeastern Units 3 and 4. Any additional SO<sub>2</sub> emissions reductions obtained and/or identified from the northeast quadrant of the State will be presumed to count toward the mass emission reductions necessary to achieve the anticipated visibility benefits. Emissions reductions obtained outside the northeast quadrant that are technically justified will also be counted. If necessary, additional emission reductions shall be obtained via enforceable emission limits or control equipment requirements made enforceable through administrative orders, permits, and/or rulemaking actions. Any additional SO<sub>2</sub> reductions will be obtained and/or identified and a corresponding SIP revision will be submitted to EPA as expeditiously as practicable, but in no event later than the end of the first full Oklahoma legislative session occurring subsequent to AEP/PSO's submission of the evaluation and report required by Paragraph 1(f) of Attachment A to the Settlement Agreement. Moreover, any additional reductions that are obtained prior to the 2018 Regional Haze SIP revision required by 40 C.F.R. § 51.308(f) but not accounted for in the above referenced modeling will be identified in the 2018 revision.

In calendar year 2021, as required by subparagraph 26(G) of the First Amended Regional Haze Agreement, AEP/PSO will evaluate whether the projected generation from the remaining unit can be replaced at lower or equal total projected cost from natural gas or renewable resources. If power is available from such resources at a lower projected total cost (including consideration of AEP/PSO's need to recover its remaining investment in the remaining unit), then the operating unit will be shut down no later than December 31, 2025.

Additional Federal measures, which affect emissions that impact visibility, have been promulgated, proposed, and/or planned since submission of Oklahoma's original Region Haze SIP submission. These additional measures include the Mercury and Air Toxics Standard ("MATS"), as well as other new or revised NESHAPs and NSPS. In addition, visibility improvements are likely to result from implementation of NAAQS revisions, particularly the 2010 SO<sub>2</sub> NAAQS. Reductions in SO<sub>2</sub> and NO<sub>x</sub> emissions from other states required under the Clean Air Interstate Rule ("CAIR") and its successor program will and must remain a critical part of Oklahoma's long-term visibility strategy. Future reviews of the Regional Haze SIP will likely provide a clearer evaluation of the effects of the Federal measures on visibility in Class I areas that are currently impacted by Oklahoma sources.

#### **IV.** Interstate Transport SIP

Implementation of (1) the revised BART for AEP/PSO Northeastern Units 3 and 4; (2) the First Amended Regional Haze Agreement, Case No. 10-025; and (3) the additional reductions described in Section III, will result in reductions in the amount of Oklahoma emissions that are available for interstate transport. Together, these reductions will address the disapproved portions of the Transport SIP as it relates to AEP/PSO Northeastern Units 3 and 4.

#### V. Review, Consultations, and Comments

#### A. EPA Review with Parallel Processing

The State of Oklahoma submitted the proposed Regional Haze SIP Revision, in electronic and paper form, for EPA review on March 20, 2013, along with a request for parallel processing. At that time, the State also submitted a copy of the draft notice of public hearing and opportunity for comment, prepared in accordance with 40 C.F.R. § 51.102 and "Procedures for Notice of Opportunity for Public Hearing and Comment – Oklahoma SIP Review/Revision Submittals." These state public participation procedures were submitted to EPA for review under 40 CFR § 51.102. In a letter dated August 23, 2012, EPA concurred that they are consistent with the requirements of 40 CFR § 51.102 and associated guidance.

#### B. Federal Land Manager Consultation

As part of the development of this implementation plan revision, DEQ consulted with the designated Federal Land Manager (FLM) staff personnel in accordance with the provisions of 40 C.F.R. § 51.308(i)(2). DEQ provided an opportunity to federal land managers for consultation in person and at least 60 days before holding any public hearing on this implementation plan revision. This consultation gave the federal land managers the opportunity to discuss their assessment of:

- Impairment of visibility at the Wichita Mountains and at other Class I areas;
- Recommendations on the development of reasonable progress goals; and
- Recommendations on strategies to address visibility impairment.

On March 20, 2013, simultaneous with submittal of the request to EPA for parallel processing, DEQ notified the federal land manager staff of this proposed Regional Haze SIP Revision, and provided them with electronic access to the revision and related documents. DEQ also provided the federal land manager staff with notice of the public hearing scheduled for May 20, 2013. Comments received from the FLMs have been considered and posted on the DEQ Regional Haze webpage. The FLM Contact List and comments, are included in Appendix V. Responses to the FLM comments are included in the Summary of Comments and Responses document in Appendix VII.

#### C. Consultation with States

Oklahoma conducted an extensive consultation process with states with Class I Areas whose visibility are potentially affected by Oklahoma emissions during the original Regional Haze SIP

development and submittal process. On March 20, 2013, simultaneous with submittal of the request to EPA for parallel processing, DEQ notified the appropriate clean air agency staff for bordering/potentially affected states (Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, New Mexico, and Texas) of this proposed Regional Haze SIP Revision, and provided them with electronic access to the revision and related documents. DEQ will also notified the state agency staff of the public hearing scheduled for May 20, 2013. No comments were received from the state agency staff. The State Contact List is included in Appendix V.

#### D. Public Comment Period and Hearing

DEQ provided notice of a public hearing and opportunity to comment on the proposed Regional Haze SIP Revision at least 30 days in advance of the scheduled public hearing, as required by 40 C.F.R. § 51.102. DEQ held a public hearing regarding the implementation plan revision on May 20, 2013 at the DEQ offices in Oklahoma City, Oklahoma. Notice was posted on the DEQ Regional Haze webpage beginning on April 19, 2013. Notice was also published in the Tulsa World on April 18, 2013, and in the Oklahoman and the Lawton Constitution on April 19, 2013 (i.e., in at least one newspaper of general circulation at least 30 days before the hearing), and was provided via e-mail to those persons who have expressed an interest in SIP revisions and have supplied their e-mail addresses and via regular mail to those persons who have expressed an interest in SIP revisions and have supplied their mailing addresses.

The notice included information on the availability of the proposed Regional Haze SIP Revision for public inspection at 707 N. Robinson Ave, Oklahoma City, OK, and through the DEQ Regional Haze webpage: <a href="http://www.deq.state.ok.us/aqdnew/RulesAndPlanning/Regional Haze">http://www.deq.state.ok.us/aqdnew/RulesAndPlanning/Regional Haze</a>

Both written and oral comments were received by DEQ from the public. Electronic copies of the written comments have been posted on the DEQ Regional Haze web site, along with a copy of the hearing transcript. Copies of written comments received are included in Appendix V, and DEQ's Summary of Comments and Responses document is included in Appendix VII. Appendix IV contains copies of the notice and notice certification, and Appendix VI contains copies of the hearing transcript, sign-in sheet(s) and hearing certification.

# Appendices

# Appendix I

## AEP/PSO Settlement Agreement

## Appendix II

### Revised BART Determination,

including

Supplemental BART Determination Information submitted by AEP/PSO

### Appendix III

PSO Regional Haze Agreement,

DEQ Case No. 10-025

(February 10, 2010),

as amended by the

First Amended Regional Haze Agreement,

*DEQ Case No. 10-025* 

(March 26, 2013)

# Appendix IV

# Notice of Public Hearing and Opportunity to Comment

# Appendix V

### Comments Received

# Appendix VI

# Hearing Transcript, Sign-in Sheets, and Hearing Certification

# Appendix VII

# Summary of Comments and Responses – FLM and Public Comments

# Appendix VIII

### Other Submittal Documents