**BEFORE THE**
**CORPORATION COMMISSION OF OKLAHOMA**

| | | |
|---|---|---|
| APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA FOR COMMISSION AUTHORIZATION OF A PLAN AND COST RECOVERY OF ACTIONS OF PSO TO BE IN COMPLIANCE WITH CERTAIN ENVIRONMENTAL RULES PROMULGATED BY THE UNITED STATED ENVIRONMENTAL PROTECTION AGENCY; SUCH ACTIVITIES TO INCLUDE, BUT NOT BE LIMITED TO, CAPITAL EXPENDITURES FOR EQUIPMENT AND FACILITIES; CONSTRUCTION OR PURCHASE OF AN ELECTRIC GENERATING FACILITY OR ENTER INTO A LONG-TERM PURCHASE POWER CONTRACT (AND POSSIBLE EARNING ON THE CONTRACT); CHANGE IN DEPRECIATION RATES AND/OR ESTABLISHMENT AND RECOVERY OF A REGULATORY ASSET; AND FOR SUCH OTHER RELIEF AS THE COMMISSION DEEMS PSO IS ENTITLED. | ) | CAUSE No. PUD 201200054 |

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CORPORATION COMMISSION
OF OKLAHOMA

DIRECT TESTIMONY OF

HOWARD L. GROUND

ON BEHALF OF

PUBLIC SERVICE COMPANY OF OKLAHOMA

SEPTEMBER 26, 2012

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## I. INTRODUCTION AND QUALIFICATIONS

1 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

2 A. My name is Howard L. Ground, and my business address is 1601 Northwest Expressway,
3 Suite 1400, Oklahoma City, Oklahoma 73118.

4 **Q. WHO IS YOUR EMPLOYER, AND IN WHAT CAPACITY ARE YOU**
5 **EMPLOYED?**

6 A. My employer is Public Service Company of Oklahoma (PSO or Company), and I am
7 Manager - State Governmental and Environmental Affairs. PSO is an operating company
8 subsidiary of American Electric Power Company, Inc. (AEP).

9 **Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL AND**
10 **PROFESSIONAL BACKGROUND?**

11 A. I earned a Bachelor of Science degree in Mechanical Engineering Technology from
12 Oklahoma State University in 1980 and a master in Business Administration with Honors
13 from Oklahoma City University in 1992. I have attended Executive Management
14 programs at Penn State University and The Ohio State University.

15 I joined PSO, a wholly owned subsidiary of Central and South West Corporation
16 (CSW), in January 1981 as a performance engineer in the central engineering office. I
17 was transferred a short time later to Riverside Station, a 960 MW gas fired power plant as
18 a Results Engineer with the responsibilities of performance testing, operational and
19 efficiency enhancements, engineering analysis of equipment operations as well as plant
20 upgrades and environmental reporting. I became the supervisor over the engineering
21 department and laboratory at the plant in 1982 and expanded my responsibilities to
22 include all engineering activities as well as federal energy reporting and plant budgeting

1 and administrative responsibilities. In 1989 I transferred into the corporate
2 Environmental department as a senior engineer where I had responsibilities for
3 environmental compliance activities in air, water, and solid waste at all PSO facilities. I
4 became Manager of Environmental and Occupational Health Department in 1992 which
5 also included supervising the corporate laboratory. In that position I was responsible for
6 policy, procedures, training, reporting, compliance planning, regulatory and legislative
7 interface for all environmental and occupational health issues at PSO.
8 I transferred to the CSW corporate environmental office in Dallas as Manager,
9 Air Quality Services in 1998 with the responsibility of policy, procedures, reporting,
10 regulatory compliance strategies, regulatory and legislative liaison and internal consulting
11 services on air quality issues for over 100 CSW generating plants. I was the alternative
12 designated representative (ADR) for CSW power plants where I was responsible for the
13 accounting of all emissions and disposition of emission allowances. I maintained that
14 position and responsibilities until the merger of CSW and AEP in June 2000. I continued
15 to manage the Air Quality Services department after the merger but transferred the ADR
16 responsibility to the Columbus corporate office. I continued in that role until March 2004
17 when I transferred to PSO as the Manager, State Environmental Affairs where I was
18 responsible for environmental legislation and regulatory issues as well as sustainability
19 and wildlife issues. I took on the Governmental Affairs responsibilities along with my
20 Environmental Affairs responsibilities in October 2007 and continue in that role today.

1 **Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGER - STATE**

2 **GOVERNMENTAL AND ENVIRONMENTAL AFFAIRS?**

3 A. I am PSO's primary contact and representative on issues before the state legislature,

4 certain industry and trade associations, and public advocacy groups. I am also the

5 Company's primary representative before the state environmental regulatory agency, the

6 Oklahoma Department of Environmental Quality (ODEQ). I also assist with

7 representation before the United States Environmental Protection Agency (EPA).

8 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY AS A WITNESS BEFORE ANY**

9 **REGULATORY COMMISSION?**

10 A. Yes, I have testified before environmental regulatory councils and commissions in

11 Oklahoma and Texas. I have also submitted Direct Testimony in Texas PUC Docket No.

12 27207, AEP Texas Central Company's Application for approval of environmental

13 cleanup costs.

14 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

15 A. Yes. I am sponsoring the following five exhibits.

16 Exhibit HLG – 1 The Term Sheet for the Settlement Agreement

17 Exhibit HLG – 2 Letter from EPA recognizing comprehensive approach.

18 Exhibit HLG – 3 September 10, 2012, letter from ODEQ Executive Director Steve

19 Thompson to Mr. Stuart Solomon granting one year MATS

20 Extension

21 Exhibit HLG – 4 March 29, 2011, Letter from Secretary Ming and Secretary Sheerer

22 to Mr. Stuart Solomon

1 Exhibit HLG – 5 September 30, 2011, Letter from Attorney General Pruitt to Mr.
2 Stuart Solomon

## II. PURPOSE AND SUMMARY

3 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

4 A. I describe current environmental rules that require the installation of emissions control
5 equipment at PSO's power generating facilities. I will also review potential future
6 environmental requirements that also could impact PSO's generation fleet. Finally, I will
7 describe the principal terms for an agreement with the State of Oklahoma and EPA to
8 resolve pending litigation over the regional haze program requirements for PSO's
9 generating units and the obligations related to that agreement.

10 **Q. WOULD YOU PLEASE SUMMARIZE YOUR TESTIMONY?**

11 A. There are two main current EPA rules requiring PSO to install control equipment to meet
12 emission limits in specific time frames: (1) the Regional Haze Rule (RHR) and (2) the
13 Mercury and Air Toxics Standard (MATS) rule. These rules were finalized on December
14 28, 2011, and February 16, 2012, respectively. These rules will require PSO to make
15 substantial reductions in emissions of sulfur dioxide ($SO_2$), nitrogen oxide ($NO_x$),
16 mercury, acid gases, and particulate matter.

17 PSO also faces the prospect of additional costly requirements in the future for its
18 generation fleet, particularly its coal fleet. Over the next five to ten years, PSO will also
19 likely have to address requirements under: (1) the successor to the Cross State Air
20 Pollution Rule (CSAPR), (2) the Coal Combustion Residuals (CCR) Rule, (3) the Clean
21 Water Act (316(b)) Rule, (4) possible carbon dioxide limitations and other greenhouse
22 gas (GHG) regulations, (5) implementation obligations under the One-hour $SO_2$ and NOx

1 Primary National Ambient Air Quality Standards (NAAQS), (6) future revisions of the
2 ozone and particulate matter NAAQS, and (7) a second planning period under the RHR.
3 In particular, the current and future regulations will have a profound impact at the
4 coal-fired Northeastern Units 3 and 4. These units represent approximately one-fourth of
5 PSO's total capacity requirement and an even greater percentage of its base load energy
6 resources. The environmental requirements threaten PSO's ability to continue to operate
7 these plants and meet its customers' electricity needs and assure reliability. Given these
8 current and future environmental obligations, PSO has looked for opportunities to
9 provide some near-term certainty around its air emission obligations for the coal-fired
10 Northeastern Units 3 and 4 under the RHR and MATS rules. To meet this desire, PSO
11 executed a term sheet for a Settlement Agreement (Agreement or Regional Haze
12 Agreement (RHA)) with the EPA, the State of Oklahoma, and the Oklahoma Department
13 of Environmental Quality (ODEQ) to resolve PSO's emission control requirements for
14 Northeastern Units 3 and 4 and to ensure sufficient resources to meet our customer's
15 demands. That term sheet (See Exhibit HLG – 1) stipulates for PSO a reasonable,
16 orderly, and definitive time line to comply with its coal plant emissions limit
17 requirements. The term sheet recognizes PSO's desire for the RHA to be a
18 comprehensive compliance strategy (See Exhibit HLG – 2). The term sheet also provides
19 PSO with greater flexibility in responding to the future requirements of other
20 environmental rules.
21 More specifically, the term sheet prescribes emission limits for
22 compliance and requires that PSO install and operate a Dry Sorbent Injection (DSI)
23 system, an Activated Carbon (ACI) system, and a fabric filter (FF) baghouse, and secure

further NOx emission reductions on one of the Northeastern units by April 16, 2016. Further, this controlled coal-fired unit at Northeastern will be required to retire no later than December 31, 2026, or by December 31, 2025, if power is available from other resources at a lower projected total cost (including consideration of PSO's need to recover its remaining investment in the units). The unit not selected for the environmental controls will be retired on or before April 16, 2016.

## III. OVERVIEW OF CURRENT ENVIRONMENTAL REGULATIONS

**Q. WHAT ARE THE FINAL EPA RULES APPLICABLE TO PSO'S GENERATING FLEET?**

A. The two major final EPA rulemakings that will necessitate the installation of air emissions control equipment are:

(1) the Regional Haze Rule (RHR); and

(2) the Mercury and Air Toxics Standards Rule (MATS).

### A. REGIONAL HAZE RULE

**Q. WOULD YOU PLEASE PROVIDE AN OVERVIEW OF THE REGIONAL HAZE RULE?**

A. The Clean Air Act of 1990 (Title I, Sections 169A and 169B) declared it a national goal to prevent any future, and to remedy any existing, impairment of visibility in 156 mandatory federal Class I areas, the impairment of which results from man made pollution. Class I areas are defined as national parks and wilderness areas that Congress has recognized as significant sites. In 1999, the EPA issued the RHR for the protection of visibility in Class I National Parks and Wilderness Areas.

1 Under the RHR, states are required to set periodic goals for improving visibility in
2 the 156 Federal Class I areas. The RHR applies to 26 industrial sectors that are major
3 sources of $SO_2$, $NO_x$, and traditional, primary particulate matter (PM) emissions, and that
4 were in existence or under construction between 1962 and 1977. Electric generating
5 units (EGUs) are included in the category of major sources governed by the RHR that are
6 required to install Best Available Retrofit Technology (BART) to reduce their visibility
7 impacts.

8 The RHR requires the states to develop regional haze state implementation plans
9 (Regional Haze SIP) that contain enforceable measures and strategies for reducing
10 emission of pollutants associated with visibility impairment. Each SIP must require
11 certain eligible facilities (subject-to-BART sources) to achieve specified emission
12 limitations, known as BART, including $NO_x$, $SO_2$ and PM, emission limits necessary to
13 improve visibility. BART is applicable to EGUs greater than 250 megawatt (MW) that
14 have been determined to have significantly impaired visibility in one or more federal
15 Class I areas.

16 On July 6, 2005, the EPA published the final "Regional Haze Regulations and
17 Guidelines for Best Available Retrofit Technology Determinations." The Federal Clean
18 Air Act and the Regional Haze Rule require certain states, including Oklahoma, to make
19 reasonable progress toward the "prevention of any future, and the remedying of any
20 existing, impairment of visibility" in mandatory Class I Federal areas. Moreover, the
21 Regional Haze Rule requires the State of Oklahoma to develop programs to "address
22 regional haze in each mandatory Class I Federal area located within the State and in each
23 mandatory Class I Federal area located outside the State which may be affected by

emissions from within the State." Air pollutants emitted by BART eligible sources in Oklahoma, which may reasonably be anticipated to cause or contribute to visibility impairment, in any mandatory Class I Federal area are $NO_x$, $SO_2$, PM-10, and PM-2.5. EPA also provided guidance on what level of control is reasonable for certain BART-eligible sources, including EGUs, and published "presumptive BART" emission rates for $SO_2$ and NOx based on the types of cost-effective controls available.

Oklahoma, on February 18, 2010, through the Secretary of Environment, submitted to EPA its regional haze revisions to the Oklahoma State Implementation Plan ("SIP"). After conducting dispersion modeling and properly balancing the five statutory factors[1] relevant to a BART determination, it was determined that six PSO electric generating units may cause or contribute to visibility impairment at a Class I Federal Area and, therefore, are subject to the BART requirement of the Federal Regional Haze Rule. This requirement mandates that these six generating units control the emissions of visibility impairing pollutants.

**Q. HOW DID OKLAHOMA DETERMINE THE APPROPRIATE LEVEL OF $NO_X$ AND $SO_2$ CONTROL FOR THE PSO BART ELIGIBLE SOURCES?**

A. In general, BART is determined for each eligible emissions unit using the following five steps from the BART Guidelines:

(1) identify all available retrofit control technologies;

(2) eliminate technically infeasible options;

(3) evaluate control effectiveness of remaining control technologies;

[1] The five BART factors are: (1) the costs of compliance; (2) the energy and nonair quality environmental impacts of compliance; (3) any existing air pollution control technology in use at the source; (4) the remaining useful life of the source; and (5) the degree of improvement in visibility which may reasonably be anticipated to result from the use of the technology.

(4) evaluate impacts and document the results; and

(5) evaluate visibility impacts.

The BART Guidelines require the consideration of all "control technologies with a practical potential for application to the emissions unit and the regulated pollutant under evaluation." PSO evaluated various retrofit control technologies against the five factor analysis. AEP developed compliance costs associated with implementing the evaluated control systems and estimated both annual operating costs and annualized capital costs associated with retrofit construction. The best control technology that was also cost effective was chosen as BART for Northeastern Units 3 and 4.

**Q. WHAT ARE THE PRESUMPTIVE BART LIMITS FOR PSO'S GENERATING UNITS?**

A. The presumptive limits applicable to PSO's coal units are:

1. 0.15 pounds $NO_x$ per million Btu of heat input (0.23 lb/MMBtu) on a 30-day rolling average; and
2. 0.15 pounds $SO_2$ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average.

There are no presumptive limits for the gas units.

**Q. DID PSO'S ANALYSIS CONFIRM THAT LOW NOX BURNER TECHNOLOGIES ARE COST-EFFECTIVE AND REASONABLE FOR PSO'S UNITS?**

A. Yes. In the BART determination guidelines for $NO_x$, the EPA calculated that for all types of boilers, other than cyclone boilers, combustion control technology (represented

by low $NO_x$ burner technologies (LNB) and separated over-fire air (SOFA) in some cases is generally more cost-effective than post-combustion controls (represented by selective non-catalytic reduction (SNCR) and selective catalytic reduction (SCR)). PSO's analysis confirmed that this is accurate for PSO's generating units.

**Q. WHAT WILL PSO'S GENERATING UNITS NEED TO INSTALL TO MEET THE $NO_X$ LIMITS OF THE RHR?**

A. PSO will install a combination of low $NO_x$ burners and SOFA combustion modifications on Northeastern Units 2, Southwestern Unit 3, and Comanche Units 1G1 and 1G2. Northeastern Units 3 and 4 had SOFA installed this year.

**Q. DID PSO'S ANALYSIS CONFIRM THAT THE PRESUMPTIVE BART LIMITS FOR $SO_2$ ARE COST-EFFECTIVE AND REASONABLE FOR PSO'S COAL UNITS?**

No, it did not. In the BART determination analysis for $SO_2$, PSO submitted a five-factor analysis which demonstrated that installation of a dry flue gas desulfurization system (DFGD) to achieve a presumptive BART limit of 0.15 lb $SO_2$/MMBtu at Northeastern Units 3 and 4 is not cost-effective, based on the range of values set forth in the RHR. PSO further evaluated the basis of the annual average $SO_2$ rate that was used in the five-factor analysis and determined that the appropriate historical $SO_2$ emission rate is approximately 0.55 lb $SO_2$/MMBtu. This determination was based on an EPA July 5, 2005, guidance document which stated: "The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source. In general, for existing sources subject to BART, you will estimate the anticipated annual emissions based upon actual emissions from a baseline period." The cost-effectiveness calculation for the

installation of a DFGD, based upon the 0.55 lb $SO_2$/MMBtu historic emission rate, is $6,077 per ton, far in excess of the range of cost-effectiveness for $SO_2$ controls that EPA determined was reasonable in its RHR guidance.

**Q. WHAT DID ODEQ DO IN RESPONSE TO PSO'S DETERMINATION THAT INSTALLATION OF A DFGD WAS NOT COST-EFFECTIVE TO ACHIEVE THE PRESUMPTIVE $SO_2$ LIMIT?**

Based on the fact that installation of a DFGD was not cost effective, the ODEQ determined that continued use of low sulfur coal would satisfy the requirements of the RHR. The SIP also established an alternative that would have allowed PSO the flexibility to install scrubbers to remove $SO_2$ on all coal-fired units or achieve equivalent emissions (including the option of switching from coal to natural gas) by 2018 in the event that the EPA disapproved of the low-sulfur coal BART determination. The SIP further provided that these sources could elect to install $SO_2$ scrubbers on half of the coal-fired sources and switch the other half to natural gas (or achieve equivalent reductions) by 2026.

**Q. WHAT IS THE CURRENT STATUS OF THE OKLAHOMA SIP?**

A. The EPA published its proposed partial approval and disapproval of the Oklahoma Regional Haze SIP and Federal Implementation Plan (FIP) for Interstate Transport of Pollution Affecting Visibility and BART Determinations in the Federal Register on March 22, 2011.

PSO supported EPA's partial approval of the $NO_x$ and PM portions of the Oklahoma SIP as submitted. However, PSO disagreed with EPA's proposed partial disapproval of the portions of the Oklahoma SIP that addressed $SO_2$, and the FIP

1 determinations made by EPA for PSO's Northeastern Units 3 and 4. The partial approval
2 and partial disapproval of the Oklahoma SIP and the issuance of the FIP was finalized by
3 the EPA on December 28, 2011, and became effective on January 27, 2012. The FIP
4 gives PSO five years to be in compliance with the requirements.

5 **Q. WHAT ACTIONS HAVE BEEN TAKEN TO CHALLENGE EPA'S**
6 **DISAPPROVAL OF THE OKLAHOMA SIP AND THE ISSUANCE OF THE FIP?**

7 On March 23, 2011, the Oklahoma Attorney General filed a Notice of Intent to sue the
8 EPA over the proposed Regional Haze FIP. The suit was filed on June 1, 2011, in federal
9 district court. On August 2, 2011, PSO filed a motion to intervene in the Attorney
10 General's lawsuit. This suit was dismissed as moot after EPA issued its final rule
11 disapproving the Oklahoma SIP.

12 On February 24, 2012, PSO filed a Petition For Review of the final Regional
13 Haze FIP in the Tenth Circuit Court of Appeals. The State of Oklahoma, EPA, and PSO
14 engaged in settlement discussions after the petition was filed, and have reached
15 agreement on the principal terms of a settlement. The briefing schedule has been
16 extended at the request of the parties while a final agreement is negotiated.

17 Oklahoma Gas & Electric Company (OG&E) filed a separate suit challenging the
18 EPA's $SO_2$ BART determinations for OG&E's coal units. On June 22, 2012, the Tenth
19 Circuit issued a stay of the $SO_2$ requirements for OG&E's units until the court reaches a
20 final decision on the merits of OG&E's appeal. Although the stay may briefly extend the
21 time for OG&E to make further $SO_2$ emission reductions, even if OG&E is ultimately
22 successful on the merits of its suit, OG&E's units will likely have some additional $SO_2$
23 emission reduction obligations under the Regional Haze Rule in 2017-2018. Regardless

of the outcome of OG&E's suit, the certainty provided by the Agreement with the State and EPA will provide benefits for PSO's customers, the Company, and the environment.

**Q. WHAT ARE THE $SO_2$ EMISSION LIMITATIONS FOR NORTHEASTERN UNITS 3 AND 4 IN THE REGIONAL HAZE FIP?**

A. The Regional Haze FIP imposes an emission rate of 0.06 lb $SO_2$/MMBtu on emissions from Northeastern 3 and 4 within five years, which is considerably lower than the presumptive limits of 0.15 lb $SO_2$/MMBtu in the RHR. Northeastern Units 3 and 4 would have to be retrofitted with a DFGD to meet the prescribed $SO_2$ limits.

## B. MATS RULE

**Q. WOULD YOU PLEASE GENERALLY DESCRIBE THE MATS RULE?**

A. The MATS Rule replaces the former Clean Air Mercury Rule (CAMR) which the D.C. Circuit Court of Appeals vacated in 2008. Administrator Jackson signed the final MATS Rule on December 16, 2011, and was published in the *Federal Register* on February 16, 2012. This rule regulates emissions of hazardous air pollutants (HAPs) from coal and oil-fired electric generating units. HAPs regulated by this rule are: (1) mercury; (2) several non-mercury metals such as arsenic, lead, cadmium, and selenium, which are regulated as particulate matter; (3) various acid gases, including hydrochloric acid; and (4) many organic HAPs.

The MATS Rule includes specific and stringent emission rate limits for mercury, particulate matter (as a surrogate for the non-mercury particulate HAPs), and hydrochloric acid or $SO_2$ (as a surrogate for acid gases), or requires emission testing to demonstrate that individual HAP emission rates are met. The rule also creates work practice standards for organic HAPs.

1 **Q. WHAT HAP EMISSION LIMITS MUST NORTHEASTERN UNITS 3 AND 4**
2 **MEET TO COMPLY WITH MATS?**

3 A. The HAP emission limits applicable to Northeastern Units 3 and 4 are shown in the table
4 below.

| HAP | Emission Limit |
|---|---|
| Mercury | 1.2 lb/Tbtu |
| Non-mercury metals* | 0.03 lb/MMBtu Filterable PM |
| Acid Gases** | .002 lb/MMBtu HCl |
| Organic HAP Compounds | Work Practice Standards |

* Antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium

** Hydrogen fluoride (HF), Chlorine ($Cl_2$), hydrogen cyanide (HCN), HCl

5 **Q. WHAT COMPLIANCE TIMELINES ARE INCLUDED IN THE MATS RULE?**

6 A. The Clean Air Act (CAA) includes a three-year compliance period, which results in a
7 compliance deadline of April 16, 2015, for MATS. There is a provision for a one-year
8 extension upon approval of the permitting authority, which would allow until April 16,
9 2016, for certain units, at the discretion of the ODEQ.

10 **Q. WHAT ASSURANCE DOES PSO HAVE THAT A ONE YEAR EXTENSION**
11 **WILL BE AVAILABLE?**

12 A. PSO has discussed the extension with the ODEQ and on August 2, 2012, sent a letter
13 requesting the extension. PSO received a letter from the ODEQ dated September 10,
14 2012, granting the one year extension. The letter is provided in Exhibit HLG – 3.

**Q. WHAT ARE THE TECHNOLOGIES THAT WILL BE EMPLOYED TO ACHIEVE THE MATS RULE EMISSIONS LIMITS AT NORTHEASTERN UNITS 3 AND 4?**

A. There are a number of alternative technologies capable of satisfying the MATS limits. PSO has chosen technologies that enable it to comprehensively comply with the requirements of the RHR and MATS, while preserving its flexibility to address future environmental requirements cost-effectively. Northeastern Unit 3 will be equipped with DSI, a FF bag house, and ACI to comply with the emission limits required by the MATS Rule.

## C. CURRENT RULES SUMMARY

**Q. ABSENT THE TERM SHEET FOR THE RHA, WHAT EMISSION CONTROL TECHNOLOGY WOULD HAVE TO BE INSTALLED AT NORTHEASTERN BASED ON THE CURRENT REGULATORY PARADIGM SUMMARIZED ABOVE IN YOUR TESTIMONY?**

A. Northeastern Units 3 and 4 would have to meet much more stringent and costly emission control limits with more efficient emission control technology than those specified in the term sheet. The table below summarizes the environmental controls most likely to have to be installed as a result of the current regulatory framework.

| Rule | Compliance Timeline | Northeastern Units 3&4 Environmental Controls |
|---|---|---|
| Regional Haze Rule | Became effective on January 27, 2012; 5 year compliance deadline | Dry Flue Gas Desulfurization (DFGD)<br>Low $NO_x$ Burners/Over fire Air (LNB/OFA) |
| MATS Rule | April 16, 2015; likely 1 year extension for major retrofits to early 2016 | Dry Sorbent Injection (DSI)<br>Activated Carbon Injection System (ACI)<br>Improved Particulate Controls |

## IV. OVERVIEW OF FUTURE ENVIRONMENTAL REGULATIONS

**Q. DO OTHER ENVIRONMENTAL REGULATIONS EXIST THAT MAY REQUIRE ADDITIONAL ENVIRONMENTAL INVESTMENTS OR OPERATIONAL CHANGES AT NORTHEASTERN UNITS 3 AND 4 IN THE FUTURE?**

A. Yes, the following proposed and emerging federal and state rulemaking requirements could require additional investments or operational changes at Northeastern Station:

1. **Cross State Air Pollution Rule (CSAPR)** – The CSAPR was finalized by the EPA on July 6, 2011, and it serves as the replacement for the former Clean Air Interstate Rule (CAIR). CSAPR, as currently written, affects 28 eastern, southern, and mid-western states, as well as the District of Columbia. This final rule defines state obligations to reduce emissions of $NO_x$ and $SO_2$ that, according to the EPA, significantly contribute to another state's fine particulate (PM 2.5) and ozone nonattainment and maintenance areas. On December 15, 2011, Oklahoma was one of the six additional states included in the final Supplemental Transport Rule which would have required PSO to reduce $NO_x$ emissions during the ozone season (May through September).

   CSAPR was set to take effect beginning on January 1, 2012, but the D.C. Circuit Court of Appeals issued an order staying implementation on December 30, 2011. Initially, the stay did not expressly cover the states included in the Supplemental Transport Rule, so PSO filed a petition for Administrative Reconsideration and Stay of the Supplemental Transport Rule. A petition for judicial review of the Supplemental Transport Rule also was filed. EPA

1 announced on February 6, 2012, that because there is no practical way for covered
2 sources to comply while CSAPR is subject to the D.C. Circuit's stay order, EPA
3 does not expect covered sources to comply with the Supplemental Transport Rule
4 while the D.C. Circuit stay remains in effect. On February 12, 2012, and June 12,
5 2012, the EPA finalized revisions to CSAPR that made technical adjustments to
6 the emissions budgets in certain states and delayed the implementation of
7 restrictions on interstate emissions trading until Phase II of the program. On
8 August 21, 2012, the D.C. Circuit issued an opinion vacating CSAPR, but the
9 final order is being withheld pending requests for rehearing. Until the final
10 judgment is rendered, the stay on CSAPR remains in effect.
11 2. **Coal Combustion Residuals (CCR) Rule** – The EPA published proposed CCR
12 rule in June 2010. The CCR Rule establishes standards for the management and
13 disposal of byproducts of coal combustion in power plants (coal ash, etc.). As
14 proposed, the CCR Rule contained three primary options, including one program
15 to regulate CCRs as hazardous wastes, and two options to regulate CCRs as non-
16 hazardous solid wastes. The CCR rule could, when finalized, require the
17 conversion of wet ash disposal systems to dry landfill systems, the possible
18 relining or closing of ash ponds, as well as the possible construction of waste
19 water treatment facilities. Approximately 40 percent of CCRs are currently
20 beneficially re-used as substitutes for aggregates, abrasives, and other native
21 materials, so regulation of these materials as hazardous wastes could have
22 significant impacts on disposal costs. EPA has announced its intention to

1 undertake a risk assessment of beneficial uses of CCRs, and there is pending
2 litigation that could result in a firm deadline for issuing a final CCR Rule.
3 **3. Clean Water Act "316(b)" Rule** – The EPA published the proposed 316(b) rule
4 on April 20, 2011, which establishes technology standards for the design and
5 operation of cooling water intake structures at existing electric generating
6 facilities to lessen their impacts on aquatic organisms. The proposed rule requires
7 a site-specific study of measures to avoid entrainment with a goal of achieving 90
8 percent of the reductions that could be achieved through the use of a closed-cycle
9 cooling system. A final rule is expected in July of 2013. The implementation
10 schedule for this rule could extend late into this decade due to the site-specific
11 nature of the permitting process.
12 **4. Carbon Dioxide ($CO_2$) and Greenhouse Gas (GHG) Emission Regulation** –
13 For many years, Congress has considered, but failed to enact, comprehensive
14 legislation to address greenhouse gases. EPA issued an endangerment finding and
15 rules regulating GHG emissions from new motor vehicles in 2009, which
16 triggered regulation of GHG emissions from new and modified major stationary
17 sources under the preconstruction permitting program in the Clean Air Act. EPA
18 also issued a Tailoring Rule to phase in regulation of new and modified stationary
19 sources of GHGs under the Clean Air Act. These rules were challenged in the
20 D.C. Circuit Court of Appeals, which issued a decision in June of 2012 upholding
21 EPA's rules. PSO would only be subject to these rules if it modified its existing
22 sources in a way that increased GHG emissions above the thresholds in the
23 Tailoring Rule, or built a new major source of GHG emissions.

On April 13, 2012, EPA proposed New Source Performance Standards (NSPS) for GHG emissions from new fossil-fueled generation, including natural gas combined cycle units. The proposal establishes a $CO_2$ emission limit of 1,000 lb/MWh, a standard EPA believes could be met by most new natural gas combined cycle units. Any new coal plant would need some form of carbon capture technology to meet the proposed limit, although EPA acknowledges that such technology is not currently cost-effective. The proposal does not apply to existing units, or simple cycle natural-gas units. Comments were submitted in June of 2012. The planned modifications under the RHA at Northeastern and PSO's other generating units will not make the new source NSPS for GHG applicable to these units.

EPA had previously agreed to develop a NSPS program for existing fossil-fired power plants, but currently states it has no plans to issue a proposed rule for existing sources. Given that there are currently no cost-effective post-combustion control technologies available, the standards are anticipated to focus on energy efficiency opportunities, but the substantive requirements of any future EPA proposal, and their applicability to Northeastern Station, are not yet known.

5. **The new one-hour $SO_2$ and $NO_2$ Primary National Ambient Air Quality Standards (NAAQS)** – In 2010 the EPA revised the NAAQS for $SO_2$ and $NO_2$, establishing new one-hour standards that are significantly more stringent than the prior standards. All areas in Oklahoma have been designated "unclassifiable/ attainment" for the one-hour $NO_2$ standard because no monitors measured values in excess of the new standard. EPA proposed to require states to use computer

modeling to determine whether violations of the new 1-hour $SO_2$ standard might occur, but several states, including Oklahoma, have objected to this process. EPA has delayed the designations process to provide further opportunities for engagement on this issue (and others). Designations for whether an area is in attainment with the new $SO_2$ standard are expected from the EPA in mid-2013.

States must submit SIPs to the EPA for areas designated as being in attainment or unclassifiable by June 2013 and must submit SIPs for those areas designated as nonattainment by February 2014. These SIPs must provide details on the $SO_2$ emissions reductions, if any, necessary to either keep an area in attainment or bring an area currently out of attainment back into attainment. States must demonstrate that all areas will be in attainment with the new one-hour $SO_2$ standard no later than August 2017. While it is uncertain at this point whether Northeastern Station will be required by the Oklahoma SIP to reduce $SO_2$ emissions from its current permitted emission limit, it is possible that some level of reductions will be needed to demonstrate attainment of the one-hour standard.

6. **Future revised NAAQS for PM and Ozone** – EPA proposed a revised standard for fine particulate matter on June 26, 2012, that would tighten the annual standard from 15 μg/m3 to 12-13 μg/m3, retain the current 24-hour standard, and establish a new visibility protection standard for urban areas. Comments on the proposed standard are due August 31, 2012, and a final rule is expected to be issued by December 14, 2012. $SO_2$ and $NO_x$ are precursors of fine particulate matter. Until the level of the final standard is known, it is uncertain whether

further emission reductions will be required from PSO's units as a result of this rule.

EPA is also in the process of developing a revised standard for ozone, which is expected to be lower than the current standard. $NO_x$ is an ozone precursor. Until the level of the final standard is known, it is uncertain whether further emission reductions will be required from PSO's units as a result of this rule.

7. **Second planning period under RHR** – The RHR provides for several planning periods prior to the 2064 deadline for achieving the national goal of natural visibility conditions in Class I Federal areas. States are required to develop a SIP for each planning period. The second planning period commences in 2019. It is anticipated that, during the second planning period, additional reductions of emissions affecting visibility may be required, or reductions may be required from additional sources, beyond those regulated in the first planning period.

## V. SETTLEMENT AGREEMENT

**Q. WAS PSO ENCOURAGED TO EXPLORE SETTLEMENT OF ITS CHALLENGE TO THE RH FIP?**

A. Yes. After the proposed RH FIP was issued, the Attorney General invited a group of stakeholders to discuss the proposed FIP, roles of various entities, developing comments on the proposed FIP and potential litigation (See Exhibit HLG – 4). The AG expressed his opinion that the state should also have a parallel path to negotiate a resolution with the EPA.

1 As a follow-up to the March 11th meeting, Secretaries Ming and Sherrer
2 requested, through a letter dated March 29, 2011 (See Exhibit HLG – 5), that PSO
3 participate with state officials and others to develop a "Statewide Plan" to address all of
4 the federal requirements affecting electric generating units with the ODEQ being the
5 coordinator. PSO believed that the state would be able to negotiate a better outcome than
6 the proposed FIP and accepted this invitation.
7 A meeting was held on April 5, 2011, at the ODEQ offices to initiate that process.
8 Secretary Sherrer started that meeting by stating that the Governor, as well as Secretary
9 Ming and himself felt that Oklahoma should make an attempt to negotiate with EPA in
10 good faith to gain a better outcome than the proposed FIP. PSO worked with the ODEQ
11 on a Statewide Plan while also working with the AG's office and the OCC and other
12 major stakeholders to coordinate comments on the proposed FIP as well as participating
13 in the OCC technical conferences on current and potential federal regulations impacting
14 Oklahoma utilities.
15 After the FIP was finalized and PSO filed its petition challenging the FIP, the
16 parties continued their discussions and were ultimately successful in reaching agreement
17 on a term sheet that confirms PSO's comprehensive compliance strategy for the RHR and
18 MATS.
19 **Q. WOULD YOU PLEASE GENERALLY DESCRIBE THE PRINCIPAL TERMS**
20 **OF THE EXECUTED TERM SHEET NEGOTIATED BETWEEN THE EPA, THE**
21 **STATE OF OKLAHOMA, THE ODEQ, AND PSO?**
22 A. The principal terms of the of the executed term sheet (Exhibit HLG – 1) negotiated by the
23 parties specifies the emission rates, timelines, and control equipment necessary to

comprehensively address PSO's compliance obligations under the RHR and the MATS rule at Northeastern Units 3 and 4.

The term sheet stipulates that the Settlement Agreement will result in a revised BART determination for Northeastern Units 3 and 4 that is adopted as a revision to the Oklahoma SIP that includes a RHA entered into by PSO and ODEQ. The RHA requires that by no later than December 31, 2013, PSO will complete installation of low-$NO_x$ combustion technologies and achieve a $NO_x$ emission rate of 0.23 lb/MMBtu on a 30-day rolling average individually at both Northeastern Units 3 and 4. The RHA also requires that beginning on January 31, 2014, PSO will comply with a new $SO_2$ emission rate at Northeastern Units 3 and 4 of 0.65 lb/MMBtu on a 30-day rolling average, and with a new $SO_2$ emission rate of 0.60 lb/MMBtu on a 12-month rolling average at these units. PSO has to maintain these emission rates until controls are installed at either Northeastern Unit 3 or 4, and the uncontrolled unit is retired; both of these actions must occur on or before April 16, 2016.

**Q. ARE THERE ANY EXCEPTIONS TO COMPLYING WITH THE $SO_2$ EMISSION RATES?**

A. Yes. The SIP will include an alternative operating scenario so that if the coal supplies necessary to achieve the emission rates prescribed in the term sheet are not available during any future period when the above $SO_2$ emission rates are in effect, PSO will be subject to equivalent mass emission limitations on a 30-day average basis and a 12-month average basis, along with reporting requirements to both the ODEQ and EPA.

1 **Q. HAS THE FINAL SETTLEMENT AGREEMENT BEEN FINALIZED?**

2 A. At this time, the Settlement Agreement has not been finalized but it is in the final stages
3 of approval based on the executed term sheet. PSO will supplement this filing with a
4 copy of the Settlement Agreement once it is final and executed.

5 **Q. HOW WILL THE TERM SHEET AND SUBSEQUENT RHA BE ENFORCED?**

6 A. The EPA will require that the RHA be enforced through a revised Oklahoma BART SIP
7 for Northeastern Units 3 and 4.

8 **Q. CAN YOU PLEASE GENERALLY DESCRIBE THE APPROVAL PROCESS**
9 **FOR THE REVISED OKLAHOMA SIP?**

10 A. After the Settlement Agreement is executed, PSO will provide a revised BART
11 determination to ODEQ with supporting information for Northeastern Units 3 and 4.
12 ODEQ will then develop and adopt a revised Oklahoma SIP. ODEQ will then submit the
13 revised SIP to the EPA to undergo the standard SIP approval process, which includes
14 public notice and comment.

15 **Q. EARLIER YOU MENTIONED INSTALLING CONTROLS AT ONE OF**
16 **NORTHEASTERN'S COAL-FIRED UNITS. WOULD YOU PLEASE**
17 **ELABORATE ON THIS PROVISION OF THE TERM SHEET?**

18 A. Yes. The term sheet requires that PSO install and operate a DSI system, an ACI system,
19 and a FF, along with further $NO_x$ emission reductions at the selected unit by April 16,
20 2016. After installation of these controls, PSO will achieve a 0.15 lb/MMBtu emission
21 rate for $NO_X$ and a 0.40 lb/MMBtu emission rate for $SO_2$, both on a 30-day rolling
22 average basis.

1 **Q. YOU ALSO MENTIONED RETIRING THE UNCONTROLLED UNIT. WHEN**
2 **DOES THAT HAVE TO OCCUR?**
3 A. PSO will need to retire the uncontrolled coal-fired Northeastern unit by April 16, 2016.
4 **Q. DOES THE TERM SHEET REQUIRE MONITORING OF THE EMISSION**
5 **RATES?**
6 A. Yes. During the first year of operation of the environmental emission controls, PSO will
7 develop and propose a monitoring program to test various operating profiles and other
8 measures, to determine whether increased $SO_2$ removal efficiencies can be achieved
9 during normal operations. PSO will submit the monitoring program to EPA and ODEQ
10 for review and implement it during the second and third years of operation of the DSI
11 system.
12 **Q. HOW WILL THESE RESULTS OF THE EMISSION RATE MONITORING BE**
13 **USED?**
14 A. PSO will evaluate and report the results of the monitoring program to EPA and ODEQ.
15 If that evaluation shows that the installed technology is capable of sustaining an emission
16 rate of less than 0.37 lb $SO_2$/MMBtu on a 30-day rolling average without altering the
17 unit's fuel supply, incurring additional capital costs, increasing operating expenses by
18 more than a negligible amount, and/or adversely impacting overall unit operations,
19 ODEQ will propose to revise the emission rate in the RHA by 60 percent of the
20 difference between 0.40 lb $SO_2$/MMBtu and the demonstrated emission rate. If the
21 demonstrated emission rate is 0.37 lb $SO_2$/MMBtu or greater, no adjustment will be made
22 to the RHA, and the emission rate for $SO_2$ from the operating Northeastern coal-fired
23 generating unit in the RHA will remain 0.40 lb $SO_2$/MMBtu.

1 **Q. DOES THE TERM SHEET RESTRICT THE OPERATION OF THE**
2 **REMAINING NORTHEASTERN UNIT?**
3 A. Yes. Each year, beginning in calendar year 2021, the annual capacity factor for the
4 remaining operating unit at Northeastern (calculated annually based on the percentage of
5 megawatt-hours on a rated capacity of 470 MW times 8,760 hours) will be reduced to no
6 more than 70 percent in calendar years 2021 and 2022; no more than 60 percent in
7 calendar years 2023 and 2024, and no more than 50 percent in calendar years 2025 and
8 2026. Although the Agreement establishes annual capacity factors, it does permit full
9 operations during the summer period as long as annual capacity factors are not exceeded.
10 **Q. DOES THE TERM SHEET RELIEVE PSO OF COMPLYING WITH OTHER**
11 **RULES AND REGULATIONS?**
12 A. No.
13 **Q. WHAT ULTIMATELY BECOMES OF THE UNIT AT NORTHEASTERN THAT**
14 **IS CONTROLLED?**
15 A. The term sheet stipulates that PSO retire the remaining operating and controlled coal-
16 fired generating unit at Northeastern Station no later than December 31, 2026. However,
17 beginning in calendar year 2021, PSO will be required to evaluate whether the projected
18 generation from that unit can be replaced at lower or equal total projected costs from
19 natural gas or renewable resources. Pursuant to the RHA, PSO will provide a copy of the
20 evaluation to EPA and ODEQ. If power is available from such resources at a lower
21 projected total cost (including consideration of PSO's need to recover its remaining
22 investment in the units), then the operating unit will retire no later than December 31,
23 2025.

1 **VI. CONCLUSION**

2 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

3 A. Yes, it does.

# Term Sheet
# Between the U.S. Environmental Protection Agency, Public Service Company of Oklahoma, and the State of Oklahoma

The Term Sheet represents a tentative agreement on certain core terms and does not have any binding effect. The core terms of this Term Sheet will only become binding if incorporated into a Settlement Agreement in Public Service Company of Oklahoma (PSO) v. U.S. Environmental Protection Agency (EPA), et al., No. 12-9524, that has all the required terms, receives all the necessary EPA and Department of Justice approvals, and complies with Section 113(g) of the Clean Air Act.

1. PSO will submit to Oklahoma Department of Environmental Quality (ODEQ), and ODEQ will develop and adopt after public notice and hearing, and the Secretary of Environment for the State of Oklahoma will submit to the EPA, a revised Best Achievable Retrofit Technology (BART) determination with supporting administrative and technical information and visibility modeling for PSO's Northeastern Units 3 and 4 that includes the following elements:

   a) ODEQ's SIP revision will include a Regional Haze Agreement (RHA) entered into by ODEQ and PSO to effectuate the BART determination.

   b) The RHA will require that by no later than December 31, 2013, PSO will complete installation of low NOx combustion technologies and achieve a nitrogen oxide ("NOx") emission rate of 0.23 lb/MMBtu on a 30-day rolling average at each of the two coal-fired generating units at PSO's Northeastern Station (Units 3 and 4).

   c) The RHA will require that beginning on January 31, 2014, PSO will comply with a new sulfur dioxide ("$SO_2$") emission rate at Northeastern Units 3 and 4 of 0.65 lb/MMBtu on a 30-day rolling average, and beginning on December 31, 2014, PSO will comply with a new $SO_2$ emission rate of 0.60 lb/MMBtu on a 12-month rolling average at Northeastern Units 3 and 4. PSO will maintain those emission rates until controls are installed at one unit as provided in subparagraph e), and the other unit is retired as provided in subparagraph d). The RHA will include an alternative operating scenario that addresses potential disruption of coal supplies during the time period between January 31, 2014 through April 16, 2016.

   d) The RHA will require that PSO seek all necessary regulatory approvals, and will retire one of the coal-fired generating units at Northeastern Station by April 16, 2016.

   e) The RHA will require that PSO seek all necessary regulatory approvals, and install and operate a dry-sorbent injection system, activated carbon injection system, and a fabric filter baghouse, and secure further NOx emission reductions by April 16, 2016 on the coal-fired generating unit at Northeastern Station that will continue to operate. On and after May 16, 2016, PSO will achieve a 0.15 lb/MMBtu emission rate for NOx on a 30-

day rolling average basis, and a 0.40 lb/MMBtu emission rate for $SO_2$ on a 30-day rolling average basis.

f) The RHA will require that during the first year of operation of the controls required under the RHA, PSO will develop and propose a monitoring program to test various operating profiles and other measures, to determine whether increased $SO_2$ removal efficiencies can be achieved during normal operations. Pursuant to the terms of the RHA, 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. PSO will evaluate and report the results of the monitoring program to EPA and ODEQ, and if that evaluation demonstrates that the technology is capable of sustainably achieving an emission rate of less than 0.37 lbs/MMBtu on a 30-day rolling average basis without (i) altering the unit's fuel supply, (ii) incurring additional capital costs, (iii) increasing operating expenses by more than a negligible amount, and/or (iv) adversely impacting overall unit operations, ODEQ will propose to revise the emission rate in the RHA by 60 percent of the difference between 0.40 and the demonstrated emission rate. ODEQ will work with PSO to maximize the emission reductions resulting from the implementation of this agreement and the enforceable mechanism outlined in paragraph 3 below will only be implemented by ODEQ in the event that an emission rate of 0.30 lbs/MMbtu is determined to be unachievable under the criteria described above. Upon adoption after notice and opportunity for hearing, the ODEQ will submit the revised RH SIP revision to EPA for approval. If the demonstrated emission rate is 0.37 lbs/MMbtu or greater, no adjustment will be made to the RHA, and the emission rate limitation for $SO_2$ at the operating Northeastern coal-fired generating unit in the RHA will remain 0.40 lbs/MMBtu.

g) The RHA will require that beginning in calendar year 2021, the Annual Capacity Factor (calculated for each calendar year as a percentage of MWH based on a rated capacity of 470 MW times 8760 hours) for the operating coal-fired generating unit at Northeastern Station will be reduced as follows:
   i. to no more than 70 percent in calendar years 2021 and 2022;
   ii. to no more than 60 percent in calendar years 2023 and 2024; and
   iii. to no more than 50 percent in calendar years 2025 and 2026.

h) The RHA will require that no later than December 31, 2026, PSO will retire the remaining operating coal-fired generating unit at Northeastern Station. However, in calendar year 2021, the RHA will require PSO to evaluate whether the projected generation from that unit can be replaced at lower or equal total projected costs from natural gas or renewable resources. Pursuant to the RHA, PSO will provide a copy of the evaluation to EPA and ODEQ. If power is available from such resources at a lower projected total cost (including consideration of PSO's need to recover its remaining investment in the units), then the operating unit will retire no later than December 31, 2025.

2. Nothing in the RHA shall relieve PSO from its obligations to comply with all applicable federal, state, and local laws and regulations, including laws, regulations, and compliance

deadlines that become applicable after the date of entry of the RHA. Such laws and regulations include, but are not limited to, the Cross-State Air Pollution Rule and the Mercury and Air Toxics Standards (MATS). Nothing in the revised BART determination for PSO's Northeastern Units 3 and 4 should be construed to provide any relief from the emissions limits or deadlines specified in such regulations, including, but not limited to, deadlines for the installation of pollution controls required by any such regulations.

3. ODEQ also will develop and propose as part of the revised BART determination for PSO, a revision to the Visibility Interstate Transport SIP. This proposed SIP revision will provide an enforceable mechanism that addresses $SO_2$ reductions from sources other than those operated by PSO, to the extent necessary to achieve the anticipated visibility benefits from the 2018 regional modeling. This proposed SIP revision will be implemented if the $SO_2$ emission rate for the controlled unit at Northeastern is not reduced to 0.30 lbs/MMBtu or less as a result of the subparagraph f) provision in paragraph 1.

4. Separately from the RH SIP process, EPA and PSO will enter into an agreement under which PSO will report biannually to EPA (beginning in 2017 for the period 2015-2016, and every second year thereafter through the end of 2025 or 2026, whenever the last Northeastern unit is retired) on the energy produced by PSO's units and the sources of energy secured under PSO's long-term purchased power contracts. The initial report will include similar information for calendar years 2013-2014. Requests for proposals (RFPs) for long-term purchase power contracts issued between 2013 and the date the reporting obligation ends will specifically seek bids for energy supplied by natural gas and renewable resources. The biannual reports will include copies of any RFPs issued during the reporting period, and a summary of the capacity or energy secured through any long-term power purchase agreements executed during the reporting period, including the unit(s) providing the purchased power, the amount of capacity or energy secured under the agreement, and the term of each agreement.

5. An EPA letter to ODEQ and PSO dated July 18, 2012 expresses EPA's support of PSO's comprehensive strategy, and notes that the use of the technologies described in the RHA, when properly designed and operated, would be expected to achieve the emission limitations prescribed by the MATS rule issued February 16, 2012 ("MATS letter"). If approved by the appropriate EPA and DOJ officials, the parties will enter into a Settlement Agreement in the matter referenced above, which will refer to the MATS letter in a "whereas" or "recital" clause and the MATS letter will be attached to the Settlement Agreement.

Signature Page for Term Sheet Between the U.S. Environmental Protection Agency, Public Service Company of Oklahoma, and the State of Oklahoma in the matter of *Public Service Company of Oklahoma v. U.S. Environmental Protection Agency, et al.*, No. 12-9524

FOR THE PUBLIC SERVICE COMPANY OF OKLAHOMA:

Dated: 7/19/12

J. Stuart Solomon
President
Public Service Company of Oklahoma

Signature Page for Term Sheet Between the U.S. Environmental Protection Agency, Public Service Company of Oklahoma, and the State of Oklahoma in the matter of *Public Service Company of Oklahoma v. U.S. Environmental Protection Agency, et al.*, No. 12-9524

FOR THE STATE OF OKLAHOMA:

Dated: 7-18-12

Gary Sherrer
Secretary of Environment
State of Oklahoma

Signature Page for Term Sheet Between the U.S. Environmental Protection Agency, Public Service Company of Oklahoma, and the State of Oklahoma in the matter of *Public Service Company of Oklahoma v. U.S. Environmental Protection Agency, et al.*, No. 12-9524

FOR THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY:

Dated: 7-18-12

Steven A. Thompson
Executive Director
Oklahoma Department of Environmental Quality

Signature Page for Term Sheet Between the U.S. Environmental Protection Agency, Public Service Company of Oklahoma, and the State of Oklahoma in the matter of *Public Service Company of Oklahoma v. U.S. Environmental Protection Agency, et al.*, No. 12-9524

FOR THE U.S ENVIRONMENTAL PROTECTION AGENCY:

Dated: 7/19/22

Samuel Coleman, P.E.
Acting Regional Administrator
U.S. Environmental Protection Agency, Region 6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 18 2012

OFFICE OF
AIR AND RADIATION

Mr. Stuart Solomon, President
Public Service Company of Oklahoma
212 East 6th Street
Tulsa, OK 74119

Mr. Steve Thompson, Executive Director
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

Dear Mr. Solomon and Mr. Thompson:

I want to express my thanks to both of you and the others who participated in the discussion on Thursday, July 12, 2012 regarding the remaining issues in Public Service Company of Oklahoma's (PSO) forward-looking and comprehensive approach to achieving emission reductions in Oklahoma. I know I speak not only for the EPA Office of Air and Radiation, but also for Sam Coleman and his team in EPA Region 6, in expressing my appreciation for all the hard work and commitment it has taken you to reach this accord.

EPA is pleased with the final agreement made by the State of Oklahoma and PSO to develop its plan for reducing emissions to meet state and federal requirements at the two coal-fired generating units at its Northeastern Station in Oologah, Oklahoma. While this agreement is focused on complying with the visibility requirements of the Clean Air Act, the control technology described in the agreement is also intended to achieve compliance with the Mercury and Air Toxics Standard (MATS). EPA supports such a comprehensive approach. Furthermore the types of controls that PSO plans to install (a combination of Dry Sorbent Injection (DSI) and subbituminous coal to meet the acid gas limits, activated carbon injection and a baghouse to meet the mercury limits, and a baghouse to meet the PM limits) are the types of controls that, when well designed and operated, EPA would expect to be able to meet the MATS limits.

EPA has every confidence that this technology, when properly installed and operated, will provide a means for PSO to meet both the visibility requirements of the Clean Air Act and the MATS requirements. This is exactly the type of agreement that will provide for a cost-effective approach to meet both the visibility requirements of the Clean Air Act and ultimately the MATS rule. EPA is committed to work closely with ODEQ in the development of the proposed SIP revision for a revised BART determination for the PSO plant based on the plan outlined in this agreement.

I look forward to the continued success of our organizations in the implementation of this important agreement.

Sincerely yours,

Gina McCarthy
Assistant Administrator

STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

September 10, 2012

**CERTIFIED MAIL, RETURN RECEIPT REQUESTED**

Stuart Solomon
President and Chief Operating Officer
Public Service Company of Oklahoma
212 East Sixth Street
Tulsa, Oklahoma 74119

**Re: Response to PSO Request of One (1) year Extension of MATS Compliance Date for Northeastern Power Station Units 3 and 4**

Dear Mr. Solomon:

The purpose of this letter is to respond to Public Service Company of Oklahoma's ("PSO") request dated August 2, 2012, for a one (1) year extension of the compliance deadlines set forth in the U.S. EPA's Mercury Air Toxics Standard ("MATS Rule"), 77 Fed.Reg. 9304 (Feb. 16, 2012), for Units 3 and 4 at PSO's Northeastern Power Station. The MATS Rule was published on February 16, 2012, and became effective on April 16, 2012.

The compliance deadline for regulations promulgated pursuant to § 112(d) of the federal Clean Air Act is no later than three (3) years after the effective date of the standard. *See also* 42 U.S.C. § 7412(i)(3)(A). Accordingly, the compliance deadline for the MATS Rule is April 16, 2015.

The federal Clean Air Act and U.S. EPA's implementing regulations allow the Oklahoma Department of Environmental Quality ("ODEQ"), as the State agency with an approved permitting program, to "grant[] an extension permitting an existing source up to 1 additional year to comply with standards . . . if such additional period is necessary for the installation of controls." *See* 42 U.S.C. § 7412(i)(3)(B*); see also* 40 C.F.R. § 63.6(i)(4)(i)(A).

PSO has indicated that the requested extension is necessary in order to install the emission control equipment discussed below on one coal-fired unit, as well as to replace generation from the unit being shut down and avoid a generating capacity reserve deficiency under Southwest Power Pool criteria.

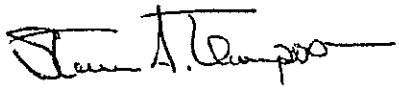
U.S. EPA's implementing regulations require a request for extension to include: a description of the controls to be installed to comply with the standard; and a compliance schedule. *See* 40 C.F.R. § 63.6(i)(6)(i). In addition, the compliance schedule is required to include the date by which installation of the emission control equipment will commence and the date by which final

compliance is achieved. *See id.* PSO's request identifies the applicable control equipment to include: Dry-Sorbent Injection; Activated Carbon Injection; and a pulse-jet fabric filter baghouse. Moreover, it appears from Attachment A to PSO's request that construction will commence by June 1, 2014, and final compliance with the MATS Rule will be achieved by April 16, 2016.

ODEQ agrees that the circumstances under which PSO's request is based are consistent with the range of circumstances justifying an extension described in the preamble to the MATS Rule. *See* 77 Fed.Reg. 9410-12 (Feb. 16, 2012). Based on the information provided in PSO's request, the agency has determined that an extension of the compliance date is warranted. Consequently, the request is granted and the MATS compliance deadline for Units 3 and 4 at PSO's Northeastern Power Station is extended until April 16, 2016.

As part of the extension process provided in EPA's regulations, "[t]he owner or operator of an affected source who has requested an extension of compliance under this paragraph . . . [is required to] apply to have the source's title V permit revised to incorporate the conditions of the extension of compliance." 40 C.F.R. § 63.6(i)(4)(i)(A). Once an administratively complete application for permit modification is received, ODEQ may take the necessary steps to incorporate the extension into PSO's permit. Thank you for your request and the information provided. If you have any questions or concerns, please do not hesitate to contact me at (405) 702-7100.

Sincerely,



Steven A. Thompson
Executive Director
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

cc: Samuel Coleman, P.E.
Acting Regional Administrator
United States Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Secretary Gary Sherrer
Oklahoma Secretary of Environment
3800 Classen Boulevard
Oklahoma City, Oklahoma 73118

Eddie Terrill
Director, Air Quality Division
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

March 29, 2011

Stuart Soloman
AES-PSO
212 East 6th Street
Tulsa, OK 74119

Dear Mr. Soloman:

As you are aware, federal pollution control requirements are rapidly converging, affecting all electric generating units operating within the state. Some of you are already affected by the Regional Haze rule, while everyone is likely subject to either the utility toxics rule, commonly called the Utility MACT, or Utility NSPS, which were announced by EPA in proposed form on March 15. These rules are in addition to the requirements associated with the lowering of the National Ambient Air Quality Standards for both SO2 and NO2 in 2010.

State policy leaders met on Friday, March 11, 2011, regarding the possibility of developing a statewide plan addressing all of the federal requirements affecting electric generating units within Oklahoma. Ideally, any such plan would include all electric generating units within the state, including those regulated by the Corporation Commission. It is our belief that this approach will provide greater environmental benefits and regulatory/financial certainty for both the utilities and the citizens of Oklahoma.

By this letter, we are encouraging your company to participate in the process, which will be coordinated by the Department of Environmental Quality. Participation in the process will not commit your company to do anything. We are hopeful that the collective development of a coordinated plan will be beneficial to your company.

It is anticipated that actual work on this plan will begin sometime in April, after we know more about the requirements contained in the Utility MACT and NSPS proposals. Should your company desire to participate or if you have any questions as you make your decision, please contact either Steve Thompson, DEQ Executive Director, at 405-702-7161 or steve.thompson@deq.ok.gov, or Eddie Terrill, DEQ Air Quality Division Director, at 405-702-4155 or eddie.terrill@deq.ok.gov.

Sincerely,

Gary L. Sherrer
Secretary of Environment

C. Michael Ming
Secretary of Energy

E. SCOTT PRUITT
ATTORNEY GENERAL OF OKLAHOMA

September 30, 2011

Mr. Stuart Solomon
President and CEO
Public Service Company of Oklahoma
212 East 6th Street
Tulsa, Oklahoma 74119

Dear Mr. Solomon:

As you know, on June 1, 2011 I filed suit against the Environmental Protection Agency (EPA) in the Western District of Oklahoma over the Regional Haze Rule.

This suit alleges the EPA failed to follow the required approval process by rejecting Oklahoma's State Implementation Plan (SIP) and proposing its own Federal Implementation Plan (FIP). The purpose of this litigation was threefold: to preserve Oklahoma's rights under the Clean Air Act; to protect the interests of Oklahoma ratepayers from a costly EPA proposal; and to preserve Oklahoma's broader right to set its own energy policy. The EPA responded to our suit by filing a Motion to Dismiss. That motion has been fully briefed by the parties and is now in the hands of Judge Friot.

While I am confident in the claims and arguments we have raised in the District Court, it was my expressed hope at the beginning of this process the stakeholders most impacted by the proposed FIP would use the time during the pendency of this litigation to develop a revised SIP that could be presented to EPA for consideration.

This approach would allow the State of Oklahoma and the interested parties within our state to retain control of this process going forward. I understand this process involves a multitude of divergent interests. It may be difficult to develop a common proposal that sufficiently reflects all of these interests. That being said, I would appreciate an update from you on the status of progress made and discussions held in these matters, whether they were among the stakeholders themselves or between the stakeholders and the EPA. This information would be useful to me as I plan our litigation strategy going forward.

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Please contact Sheila Harder at (405) 522-4396 in my office to schedule a time to meet at your earliest possible convenience.

Sincerely,

E. Scott Pruitt
Attorney General

cc: Mr. Bud Ground
Manager of State Government and
Environmental Affairs
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