BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF OKLAHOMA GAS AND ELECTRIC COMPANY FOR COMMISSION AUTHORIZATION OF A PLAN TO COMPLY WITH THE FEDERAL CLEAN AIR ACT AND COST RECOVERY; AND FOR APPROVAL OF THE MUSTANG MODERNIZATION AND COST RECOVERY	)))))))	CAUSE NO. PUD 201400229

Direct Testimony

of

Usha-Maria Turner

on behalf of

Oklahoma Gas and Electric Company

August 6, 2014

Q. **Please state your name, your employer, position and business address.**

A. My name is Usha-Maria Turner. I am the Director of Corporate Environmental for Oklahoma Gas and Electric Company ("OG&E" or "Company"). My business address is 321 N. Harvey, Oklahoma City, Oklahoma 73102.

Q. **Briefly summarize your education.**

A. I received a Bachelor of Science in Engineering in 1997 and a Master of Science in Engineering in 1999, both from Texas A&M University.

Q. **Please discuss your professional background.**

A. In 1999, I began my professional career with Texas Utilities in Dallas, Texas, supporting air regulatory compliance for the company's 23,000 megawatts ("MW") of generation facilities. In 2001, I became Manager, Environmental Policy for TXU Electric (the then newly formed owner and operator of Texas Utilities' power generation assets), managing TXU Power's review and analysis of environmental regulations and legislation. In 2006, I became Manager, Environmental Permits Development for TXU Power, managing the development and processing of environmental regulatory authorizations for multiple coal fired generation projects. In 2007, I became Director, Environmental Policy & Reporting at Luminant Power (a wholly-owned subsidiary of Energy Future Holdings which then owned the former TXU Power assets) where I managed a team which was responsible for monitoring and analyzing environmental regulation and legislation and supporting environmental compliance. In this position, I also managed the company's agency interaction with the Texas Commission on Environmental Quality ("TCEQ") on key permitting initiatives and rulemaking efforts. At Luminant, I also directed the preparation and submittal of all environmental regulatory reporting to state and federal agencies and supported the company's operations and legal departments on pending regulatory matters. I began my current position with OG&E in November, 2012.

Q. **What are your responsibilities as Director of Corporate Environmental?**

A. I oversee a group that monitors and analyzes state and federal environmental legislation and regulation to assess the potential impacts to the Company's operations. My department represents the Company's environmental position externally with trade associations and state and federal agencies. Corporate Environmental also oversees policies and procedures that govern OG&E's state and federal environmental compliance practices. In addition, I oversee certain special projects that relate to environmental issues, including advising on and organizing permitting activities related to the Company's generation assets and interfacing with state and federal regulating entities.

Q. **Have you previously testified before this Commission?**

A. No.

Q. **Have you previously filed testimony as a witness before any regulatory agency or Commission?**

A. No, but I have submitted and presented comments before the Texas Commission on Environmental Quality, the Environmental Protection Agency and the Railroad Commission of Texas on behalf of my previous employer and trade associations.

Q. **What is the purpose of your testimony?**

A. My testimony will discuss the current federal and state environmental regulations that are the subject of this application, specifically the Regional Haze Rule ("Regional Haze" or "RHR") and the Mercury and Air Toxics Standards ("MATS") rule. Also, I will discuss other potential environmental regulations and requirements that could impact OG&E. Finally, I will outline the various permits needed to comply with these environmental regulations and to implement OG&E's plan for the Mustang facility modernization.

Q. **How is your testimony organized?**

A. My testimony contains five separate sections: (i) an introduction, (ii) an overview of the Regional Haze and MATS regulatory requirements, (iii) an overview of regulatory risks from potential environmental regulations, (iv) an outline of the permitting process for

implementing OG&E's environmental compliance plan and for the modernization of OG&E's Mustang facility, and (v) a conclusion.

Introduction

Q. **Please provide an overview of OG&E's environmental compliance obligations and the importance of those obligations.**

A. The activities of OG&E are subject to numerous federal and state laws and regulations governing environmental protection relating to air quality, water quality, waste management, wildlife conservation and natural resources. Complying with these laws and regulations has the potential to impact OG&E's business activities in many ways, such as requiring changes in operations and/or the installation and operation of pollution control equipment. Failure to comply with these laws and regulations could result in the assessment of administrative, civil and criminal penalties, the imposition of remedial requirements and the issuance of orders enjoining future plant or unit operations. The Federal Clean Air Act ("CAA") provides for civil penalties as much as $37,500 per day for each violation. As I will discuss below, the federal and state environmental regulations that OG&E must comply with have strict deadlines for compliance. OG&E's units are required to operate in compliance with the established limits, terms and conditions of the applicable rules, once the regulatory deadlines take effect.

Q. **What are the environmental regulations specifically addressed in this filing?**

A. As stated above, the two final environmental regulations that currently necessitate the installation of emissions control equipment at some of OG&E's generating facilities are the MATS rule and the Regional Haze rule. These regulations combined, will require the Company to meet new emission limits for sulfur dioxide ("SO_2"), nitrogen oxide ("NO_X"), mercury, acid gases, and particulate matter ("PM"). These rules affect OG&E's generating units at its Muskogee, Sooner and Seminole facilities. As discussed below, these rules require that OG&E meet the new emission limits by specific deadlines or face enforcement action by federal and/or state authorities.

Q. **Please describe the Company's environmental compliance plan.**

A. OG&E's plan to comply with the MATS and the Regional Haze rule is outlined in Chart 1 below. To comply with the Oklahoma Regional Haze State Implementation Plan ("SIP"), the Company's plan is to install low NO_X burners ("LNB") and over-fired air systems ("OFA") on Seminole Units 1, 2, and 3, Muskogee Units 4 and 5, and Sooner Units 1 and 2. To meet the requirements of the Environmental Protection Agency ("EPA") Federal Implementation Plan ("FIP") relating to SO_2 emission limits, the Company's Plan is to install Dry, Flue Gas Desulfurization systems (commonly called dry "scrubbers") along with baghouse/fabric filter technology, on Sooner Units 1 and 2. While installing that same technology at Muskogee Units 4 and 5 would meet the FIP's SO_2 emission limits, OG&E will convert the boilers at Muskogee Units 4 and 5 from utilizing low sulfur coal to utilizing natural gas exclusively and will meet the SO_2 limits by ceasing the combustion of sulfur-containing coal at these two units. To meet the requirements of MATS, OG&E will install Activated Carbon Injection ("ACI") on all five of its coal-fired generating units, *i.e.* Sooner Units 1 and 2 and Muskogee Units 4, 5, and 6.

Chart 1:
Planned Compliance Actions
with Regional Haze and MATS on affected OG&E units

Units	**MATS Compliance** ***(Compliance Deadline)***	**Regional Haze Rule Compliance** ***(Compliance Deadline)***
Seminole Units 1, 2 & 3	N/A	NO_X: Low NO_X Burners/Over-fire Air (LNB/OFA) *(January 27, 2017)*
Sooner Units 1 and 2	Activated Carbon Injection System (ACI) *(April 16, 2016)*	NO_X: Low NO_X Burners/Over-fire Air (LNB/OFA) *(January 27, 2017)* SO_2: Dry Flue Gas Desulfurization (DFGD) *(January 4, 2019)*
Muskogee Units 4 and 5	Activated Carbon Injection System (ACI) *(April 16, 2016)*	NOx: Low NO_X Burners/Over-fire Air (LNB/OFA) *(January 27, 2017)* SO_2: Conversion to Natural Gas *(January 4, 2019)*
Muskogee Unit 6	Activated Carbon Injection System (ACI) *(April 16, 2016)*	N/A

Q. **Does OG&E need permits to implement its environmental compliance plan?**

A. Yes. I will outline the various permits that OG&E is seeking below. Since the compliance deadlines for MATS and the RHR are fixed and the clock is ticking, OG&E has already begun the permitting processes. Significant construction and installation of emissions control equipment cannot begin until a construction permit for the specific unit at each generation facility is obtained from the Oklahoma Department of Environmental Quality ("ODEQ") with potential review by the EPA.

Q. **What are the environmental benefits of this environmental compliance plan?**

A. This plan significantly reduces the emissions of key pollutants from the OG&E units. LNBs will reduce the NO_X emission rates from the coal units by over 50 percent; scrubbers at Sooner will reduce SO_2 emission rates by about 90 percent and ACI is expected to reduce mercury emission rates by about 80 percent. The gas conversion at the Muskogee units will practically eliminate SO_2 from those two units and is estimated to significantly reduce NOx emissions at those two units. In addition, since the CO_2 emissions rate for natural gas is roughly half the CO_2 emissions rate for coal, the conversion will reduce OG&E's carbon dioxide ("CO_2") emissions overall. The gas conversion will also lessen the ash handling, management and disposal needed for Muskogee.

Overview of the Regional Haze and MATS Rules

Q. **Please provide an overview of the Regional Haze Rule**.

A. The RHR requires OG&E to meet strict SO_2 emissions limits by January 4, 2019 and a lower NO_X emissions rate by January 27, 2017, on affected units. The SO_2 emissions levels as prescribed by the FIP are met by the installation of scrubber technology or the elimination of coal combustion. The NO_X emissions levels are met by the installation of LNB/OFA.

Q. **Please discuss the origin and history of the Regional Haze Rule**.

A. In the Clean Air Act, Congress created a program for protecting visibility in certain parks and wilderness areas (Class I areas). This section of the CAA establishes as a goal, the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." Congress instructed EPA to issue rules for States to use in determining the Best Available Retrofit Technology ("BART") to control emissions from certain sources that cause or contribute to visibility impairment (as measured in deciviews) in these 156 protected areas. In 1999, EPA promulgated the original RHR, which was later revised in 2005.

Q. **What does the Regional Haze Rule require and how did Oklahoma propose to comply?**

A. The RHR requires States to submit their BART determinations as State Implementation Plans or "SIP" revisions to EPA for approval. Oklahoma submitted its Regional Haze SIP to EPA on February 17, 2010 ("Oklahoma SIP"). After balancing the five, statutory factors,[1] Oklahoma determined that BART for NOx emissions from the seven OG&E Regional Haze-applicable units was to install LNB to achieve a rate of 0.15 lbs/mmBtu on a rolling, 30-operating day basis at the affected coal units and separate specific NO_X emission rates for each of the three Seminole units. Oklahoma also determined that BART for SO_2 emissions from the four coal-fired, Regional Haze applicable units operated by OG&E resulted in an annual, rolling average emission rate of 0.55 lbs/mmBtu and a 30-day rolling average emission rate 0.65 lbs/mmBtu consistent with the use of low sulfur coal. The Oklahoma SIP also concluded that the installation of four scrubbers would not be cost effective for the OG&E units.[2]

[1] The five BART factors are: (i) the costs of compliance; (ii) the energy and non-air quality environmental impacts of compliance; (iii) any existing pollution control technology in use at the source; (iv) the remaining useful life of the source; and (v) the degree of improvement in visibility that may be expected as a result of such technology.

[2] The Oklahoma SIP also contained BART determinations related to PM emissions at OG&E's Sooner Units 1 and 2 and Muskogee Units 4 and 5. Those BART determinations concluded that OG&E should continue to use the existing electrostatic precipitators at those units to control PM emissions to the levels contained in the SIP. Such a BART determination was approved by the EPA.

Q. **Was the Oklahoma SIP approved by the EPA?**

A. The Oklahoma SIP, as submitted to the EPA, was partially approved by the EPA. On March 22, 2011, EPA published a proposed rule in the Federal Register to approve in part and disapprove in part the submitted Oklahoma SIP. In this proposed rule, while EPA approved the plan for meeting NO_X emission limits with the installation of LNB technology, the EPA rejected the State's BART determination for SO_2. EPA had conducted its own five-factor analysis, determined that the Oklahoma SIP's BART determination for SO_2 was incorrect and formally proposed to replace the SIP BART determination with its own BART determination as a FIP. At the end of the public comment period for the proposed rule, on May 23, 2011, the Oklahoma Attorney General, OG&E, Oklahoma Industrial Energy Consumers ("OIEC") and others separately submitted comments to EPA opposing its proposed action.

Q. **After receiving the comments, did EPA implement the FIP?**

A. Yes. EPA issued the Final Rule with respect to the Oklahoma SIP and its FIP on December 28, 2011. In that rule, EPA took final action in disapproving the State's SO_2 BART determinations for OG&E-affected coal units. EPA simultaneously finalized its FIP for these units in Oklahoma and imposed a rolling, 30-day SO_2 emission limit of 0.06 lbs/mmBtu or about 90 percent lower than the SO_2 limit approved by the State. The emissions limits as laid out in this FIP would require the installation of scrubbers or the cessation of coal combustion at each of OG&E's four affected units.

Q. **Did OG&E seek rehearing or judicial review of the EPA's Regional Haze FIP?**

A. Yes. On February 24, 2012, OG&E filed Requests for Reconsideration with EPA and filed Petitions for Review and Stay with the 10th Circuit Court of Appeals, challenging EPA's partial disapproval of the Oklahoma SIP and simultaneous promulgation of the FIP. The State of Oklahoma and the OIEC also submitted a petition with the 10th Circuit. On June 22, 2012, two judges from the 10th Circuit issued the requested stay of the EPA FIP pending OG&E and the State of Oklahoma's appeal of the EPA FIP. This "stay" effectively stopped the clock on the statutory compliance deadline of 60 months from the

FIP's effective date of January 27, 2012. When the clock stopped on the compliance timeline, OG&E had approximately 55 months left to comply with the EPA FIP.

Q. **What was the outcome of the appeal of the FIP?**

A. On July 19, 2013, the 10th Circuit Court of Appeals issued an opinion denying the Petition for Review and affirmed the EPA's issuance of the FIP. Following the denial of the request for *en banc* rehearing, on January 29, 2014, OG&E, the State of Oklahoma and the OIEC filed a petition for a *Writ of Certiorari* at the U.S. Supreme Court which was denied on May 27, 2014, thus lifting the previously imposed stay of the EPA FIP and triggering the balance of the Regional Haze compliance timeline of 55 months.

Q. **How did the stay affect OG&E's Regional Haze compliance timeline?**

A. As stated above, when the clock was stopped by the 10th Circuit Court's stay, issued on June 22, 2012, there were approximately 55 months left to comply with the EPA FIP. After the petition for a *Writ of Certiorari* was denied by the U.S. Supreme Court on May 27, 2014, the 10th Circuit Court's mandate was then issued on May 30, 2014, and such mandate effectively lifted the stay and restarted the 55 month clock. The compliance deadline is now January 4, 2019.

Q. **What progress has OG&E made for compliance with the Regional Haze Rule**?

A. OG&E has already moved forward to comply with the uncontested portion of the Oklahoma SIP. That is, for NO_X emission limits identified in the Oklahoma SIP, OG&E was required to install LNB. This portion of the Oklahoma SIP was approved by the EPA and had a compliance deadline of January 27, 2017. OG&E is installing these LNBs during its regular scheduled maintenance outages and should be completed with the installations by January 2017. To date, OG&E has installed LNBs at Sooner Units 1 and 2 and Muskogee Unit 5.

Q. **What compliance options has OG&E reviewed for meeting the EPA FIP mandated SO_2 emission rate?**

A. OG&E conducted a review of the various control technology options that could possibly achieve compliance with the EPA FIP SO_2 emission rate. OG&E evaluated the pre-combustion technological control options of coal switching, coal washing, and coal processing for reducing SO_2. The company also evaluated post-combustion technologies including various kinds of Dry Flue Gas Desulfurization ("FGD") or ("Dry Scrubbing") and Wet FGD or ("Wet Scrubbing"). OG&E also evaluated and tested Dry Sorbent Injection ("DSI") technology to evaluate whether that technology could meet the FIP SO_2 emission rate. After testing, OG&E concluded that the option of using DSI (as a much less expensive technology than scrubbers) was not possible for meeting the FIP SO_2 limits. OG&E also evaluated converting the coal units to natural gas. OG&E Witness Robert Burch addresses these technological options and how OG&E decided on its chosen technology.

Q. **Please provide an overview of the MATS rule.**

A. On February 16, 2012, regulations governing emissions of certain hazardous air pollutants ("HAPs") from coal and oil-fired electric generating units were published as the final MATS rule. This rule includes numerical standards for PM (as a surrogate for metals), hydrogen chloride ("HCl") and mercury emissions. Compliance with the MATS rule is required within three years after the effective date of the final rule (*i.e.*, April 16, 2015) with the possibility of a one-year extension. The limits set in this rule necessitate the installation of certain emissions control technology at OG&E's coal-fired generating units.

Q. **What are the HAPs at issue in the MATS rule and the emission limits for those HAPS?**

A. The applicable limits for the MATS rule are listed below in Chart 2.

Chart 2:

HAP	Emission Limit
Mercury	1.2 lb/Tbtu Rolling 12-month limit
Non-mercury metals As measured by particulate matter	0.03 lb/MMBtu Filterable PM Rolling 30-day limit
Acid Gases As measured by HCl	0.002 lb/MMBtu HCl Rolling 12-month limit

Q. **How does OG&E plan to comply with the MATS requirements?**

A. OG&E has evaluated compliance with these limits against current operations at its five coal-fired generation units. OG&E complies with the MATS emission limits for PM and HCl and therefore concluded that no additional controls are necessary. For meeting the mercury limits contained in the MATS rule, OG&E has determined that installation and use of ACI on its five coal-fired generating units will bring OG&E into compliance with the mercury emissions limits contained in the rule. OG&E Witness Burch discusses the evaluation of those technologies.

OG&E will also begin using Continuous Emissions Monitoring Systems ("CEMS") to monitor compliance with mercury and PM. These systems are in addition to the existing installed systems that monitor for NO_X, SO_2, and CO_2.

Q. **Please discuss the compliance timelines that are included in the MATS rule.**

A. The CAA requires compliance with the MATS rule within three years from the effective date of the final rule, which results in a compliance deadline of April 16, 2015. As previously discussed, there is a provision in this rule for a one-year extension upon approval of the permitting authority (*i.e.* ODEQ), which would allow until April 16, 2016, for certain units to comply.

Q. **Has OG&E requested a one-year extension under this provision?**

A. Yes. In separate letters dated August 21, 2013 for Muskogee and Sooner generating stations to the ODEQ, OG&E outlined a plan for compliance with MATS for all units and requested a one-year extension to reasonably meet the MATS requirements. OG&E received a letter from the ODEQ dated November 8, 2013 stating that the agency has determined an extension of the compliance date is warranted for all units at the Company's Muskogee and Sooner generating stations and granting the one year extension until April 16, 2016.

Overview of Potential Environmental Regulations

Q. **Are there other potential environmental regulations that could impact coal generation?**

A. Yes. The current trend in environmental regulation is to attempt to place more restrictions and limitations on coal generation; there are emerging rules, proposed or being developed, that could significantly impact OG&E's coal generation. OG&E's plan to convert two of its existing coal units to natural gas not only meets the current requirements of Regional Haze and MATS rules also better positions the Company toward mitigating the potential future risks for coal generation.

Q. **Can you please elaborate on some of these emerging rules associated with continued use of coal?**

A. Yes. On June 18, 2014, the EPA published a proposed rule for reducing CO_2 emissions from existing power plants. This proposed rule would require the State of Oklahoma to propose a plan to significantly reduce CO_2 emissions rate in the state by 2030 compared to 2012. OG&E is still reviewing the details of this important proposal. According to the EPA, the rule is anticipated to be finalized by June 1, 2015 and the Oklahoma state plan for meeting the required CO_2 reductions could be required to be submitted for approval by June 2016.

Q. **What are the risks associated with this rule?**

A. EPA's pending rule regarding the control of CO_2 emissions from existing units could impact OG&E's current fleet of coal and gas units. The magnitude of that impact depends on the emissions targets, timelines and compliance options that EPA finalizes and that Oklahoma adopts in its state plan. OG&E's environmental compliance plan to fuel switch to natural gas at its Muskogee 4 and 5 units helps meet RHR and MATS requirements, but it also has the advantage of better positioning the Company and the State of Oklahoma to meet the CO_2 emission targets if they are ultimately required.

Q. **What are some of the other potential rules whose requirements could be mitigated by OG&E's environmental compliance plan?**

A. On August 8, 2011, the EPA published the Cross State Air Pollution Rule ("CSAPR") to replace the former Clean Air Interstate Rule ("CAIR") that was remanded by a federal court as a result of legal challenges. The final rule would have required 27 states (not including Oklahoma) to reduce power plant emissions that contribute to ozone and PM pollution in other states. On December 27, 2011, the EPA published a supplemental rule, which would make five additional states, including Oklahoma, subject to CSAPR for NO_X emissions during the ozone-season from May 1 through September 30. Both rules are being challenged in court by numerous states and utilities. Until the outcome of the court process is known, the CSAPR requirements remained stayed for the State of Oklahoma and the level of reduction that could be required from OG&E's units and the associated compliance timeline is unknown.

However, the low-NO_X combustion equipment being installed, as well as OG&E's decision to convert two Muskogee base load coal units to natural gas units, will significantly reduce the annual amount of NO_X emissions and help mitigate risks associated with any future CSAPR compliance requirements.

Q. **What is another regulation related to emissions standards that could be mitigated by OG&E's environmental compliance plan?**

A. In 2008, EPA lowered the National Ambient Air Quality Standard ("NAAQS") for Ozone and could propose a further lowering in the coming years. In addition, the EPA revised

the NAAQS for SO_2 and NO_2 in 2010 establishing new one-hour standards that are more stringent than the prior standards. If any areas of Oklahoma were to be designated as not attaining the NAAQS for a particular pollutant, OG&E would be part of any plan to help the state achieve attainment with the NAAQS.

Again, OG&E's plan to convert two base load coal units to natural gas units at Muskogee will help mitigate risks associated with future NAAQS compliance. The converted Muskogee units will have little to no SO_2 emissions and will result in a significant reduction in ozone-causing NO_X emissions from that facility. Also, the modernization of the Mustang facility will involve the retirement of older, less efficient gas units and the use of modern, efficient combustion turbines with lower NO_X emissions rates.

Q. **What other EPA rule may be mitigated by OG&E's environmental compliance plan?**

A. In June 2010, the EPA published a proposed rule entitled the Coal Combustion Residuals ("CCR") rule. This proposed CCR rule establishes standards for the management and disposal of byproducts of coal combustion in power plants (coal ash, etc.). Regulation of these materials as hazardous wastes could have significant impacts on the cost of disposal as well as the cost of managing these materials onsite. OG&E's environmental compliance plan mitigates the risk associated with this rule, as it significantly reduces the amount of coal combustion residuals being generated by converting two 500 MW coal units to natural gas.

Permitting Requirements

Q. **What environmental permit requests will be required to implement the Company's environmental compliance plan?**

A. Air quality permits are required to meet the Regional Haze and MATS mandates previously outlined, including some currently being processed and some already issued. Due to tight compliance deadlines, engineering, procurement, permitting and installation of control equipment at certain facilities has already begun.

Q. **Please describe the general process for obtaining an air quality permit.**

A. An air permit application is first prepared and submitted to the ODEQ. An application generally includes the description of the facility process and the change to the process that is subject to the authorization request as well as a description and evaluation of the choice of the retrofit control technology selected. Applicable emission points have to be identified and emissions rates proposed for the emissions being authorized, relative to the type of facility and the affected process as well as any changes to an existing emission point and emissions limit or requirements. The application may also include other emission information, plot-plans, process flow diagrams, a description of applicable regulation requirements, and emission limit determinations and/or calculations. Preparation of the application requires that the Company have a confidence in the capability of the technology to comply with the rule.

A permit application is then reviewed by the air permitting staff of the ODEQ for completeness. During this time, the ODEQ can make requests for further information from the applicant. If ODEQ determines that an application meets all applicable state and federal requirements, it will then issue a draft permit. A draft permit could then be subjected to a public input process, depending on the type of permit at issue. Tier II and Tier III permits require a public input process. This input could include review and input by the EPA and general public input and participation, through comment period(s), public meetings and administrative hearings. Following the public input process and any changes made to the draft permit as a result of that process, a final permit is issued. Except for certain site preparation activities, on-site installation of new equipment cannot commence until the permit is issued.

Q. **How many air permits are required to implement the environmental compliance plan?**

A. Seven permits are required to implement the environmental compliance plan.

Q. **What specific air permits address compliance with the Regional Haze SIP?**

A. The Company has already obtained from ODEQ two air permits for the installation of LNB burners for Muskogee units 4 and 5 and Sooner units 1 and 2. The Company is currently in the process of obtaining a separate permit for the Seminole units.

Q. **What specific air permits have or will be filed for the installation of scrubbers on the Sooner units to comply with the Regional Haze FIP?**

A. In June 2014, OG&E filed a permit application for the installation of dry circulating scrubber systems on the Sooner units. The installation of the scrubber systems will result in the reduction of SO_2 emissions. In addition, the installation of the scrubber systems has the ancillary benefit of reducing PM emissions at the facility.

Q. **What specific air permits will be filed for the conversion of Muskogee Units 4 and 5 to natural gas to comply with the Regional Haze FIP?**

A. One permit application for the conversions of the Muskogee units from low-sulfur coal to natural gas will be filed with the ODEQ in a manner that supports compliance with the Regional Haze FIP. This conversion is also addressed by OG&E Witness Burch.

Q. **What specific air permits have or will be filed for the installation of ACI on OG&E's five coal-fired generating units to comply with MATS?**

A. Two permit applications for the installation of ACI systems on the Muskogee and Sooner units were filed with the ODEQ in June 2014. The installation of these systems will result in the reduction of mercury emissions in compliance with the MATS requirements. These permit applications do not seek an increase in any pollutants and are anticipated to be processed as Tier I applications.

Q. **Are there permitting requirements for OG&E's plan to modernize its Mustang facility?**

A. Yes. OG&E must obtain a construction permit for the new Mustang units. OG&E can combine the retirements of the old units with the construction of the new units and obtain a permit without a "net" increase in emissions. Under this permitting option, OG&E can

obtain a permit for new combustion turbines by replacing the emissions associated with the old units with the emissions of the new units. This emission "netting" allows OG&E to maximize the Mustang site for newer, more efficient generation.

Q. **Please explain this emission "netting" process in greater detail.**

A. The Clean Air Act provides a way for a facility to replace existing units on-site with new more efficient units at the same site by 'netting' the old and new emissions. Thus, the replacement of the current Mustang units with new units will require an emission netting analysis to allow the Company to offset the emissions from the new Mustang generating units by eliminating the emissions from the old units without resulting in a significant net increase in overall emissions for the facility. This emission netting analysis begins when the permit application is accepted by the ODEQ and an emission baseline period of five years (60 months) prior to that date is established. In this five year period, the applicant determines the highest 24-consecutive month period of emissions from each existing unit for each pollutant that is to be netted to establish the actual emissions to net against the new generating units. This creates the optimal baseline for each pollutant.

In the next step to the netting process, the increase in new emissions must be "contemporaneous" with the retirement of the existing emissions which means that the retirement of the existing generation must occur within 3 years prior to the start-up of the new generation.

Q. **Has OG&E identified the best five year period for obtaining an air permit at Mustang?**

A. Yes. OG&E has identified the period between 2010 and 2014. With the advent of the SPP Integrated Marketplace, OG&E does not expect that the existing Mustang units will operate at the same levels going forward. As OG&E Witness Howell explains, this is because the SPP will dispatch units across the SPP footprint and legacy gas units like Mustang Units 1-4 will be dispatched after more efficient and less costly units. OG&E projects that its emissions from the Mustang units will decrease as those units are operated less in the SPP Integrated Marketplace, thereby decreasing the potential emissions baseline from any 24-consecutive months. As explained by OG&E Witness Burch, if

OG&E waits until after July 2015 to file a complete permit application based on the retirement of the old units and installation of the new units, OG&E will lose the benefit of the optimal 24-month period resulting in a lower emissions baseline and ultimately less MWs of new generation that may be permitted at the site.

Q. **What issues does OG&E face if the Company elected to permit an undeveloped site?**

A. Developing new generation at an undeveloped (greenfield) site typically takes longer as multiple environmental authorizations are needed and shorter permit processing options like netting are not available. This could include receiving authorizations from ODEQ, Oklahoma Water Resources Board, U.S. Army Corp of Engineers, U.S. Fish and Wildlife Service and others. Also, permitting incremental new generation at greenfield sites and existing sites has become increasingly more difficult with evermore stringent regulatory requirements, in particular NAAQS.

In addition, for the reasons described by Witness Burch, locating the replacement units on the Mustang site provides numerous operational benefits when compared to locating on a greenfield site.

Conclusion

Q. **Does the environmental compliance plan allow OG&E to comply with the MATS and the Regional Haze Rule?**

A. Yes. OG&E has identified a compliance plan that meets those requirements.

Q. **Does the environmental compliance plan better position OG&E to comply with potential environmental requirements?**

A. Yes. The Company's decision to scrub two coal units and convert two coal units complies with current regulatory requirements of RHR and MATS, but also better positions the Company for potential additional environmental requirements.

Q. **Do you believe that OG&E should move forward with the permitting of the new Mustang units?**

A. Yes. The emission permitting process for greenfield generation sites and additions to existing sites has become increasingly more complex and difficult. OG&E has the opportunity to use the emission netting process to preserve the valuable Mustang site.

Q. **Does this conclude your testimony?**

A. Yes, it does.