

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

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CORPORATION COMMISSION
OF OKLAHOMA**

Direct Testimony

of

Donald R. Rowlett

on behalf of

Oklahoma Gas and Electric Company

August 6, 2014

Donald R. Rowlett
Direct Testimony

1 Q. **Please state your name, by whom you are employed, and your business address.**

2 A. My name is Donald R. Rowlett. I am employed by Oklahoma Gas and Electric Company
3 ("OG&E") and my business address is 321 N. Harvey, P.O. Box 321, Oklahoma City,
4 Oklahoma 73101.

5
6 Q. **What position do you hold with OG&E?**

7 A. I hold the position of Managing Director of Regulatory Affairs at OG&E.
8

9 Q. **Please state your educational qualifications and employment history with OG&E.**

10 A. I earned a Bachelor of Science degree in Business with an accounting emphasis (1980)
11 and a Masters in Business Administration (1992), from Oklahoma City University. In
12 1983, I became a Certified Public Accountant. Prior to joining OG&E, I was employed
13 by Arthur Andersen & Co. as a financial consultant and audit manager. During my
14 employment, I performed audits of financial statements in a variety of industries.
15 Additionally, I participated in the preparation of filings with the Securities and Exchange
16 Commission ("SEC") and provided clients with guidance on the financial reporting
17 requirements of the SEC and Generally Accepted Accounting Principles ("GAAP").
18

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

20 A. Yes, including most recently in Cause No. PUD 201300100, OG&E's 2012 Fuel Audit
21 and Prudence Review. In addition to testifying before the Oklahoma Corporation
22 Commission ("OCC" or "Commission"), I have testified on behalf of the Company
23 before the Arkansas Public Service Commission and the Environmental and Public
24 Works Committee in the United States Senate.
25

26 Q. **What is the purpose of your Direct Testimony in this proceeding?**

27 A. The purpose of my testimony is to support the Company's request for relief in this
28 application, including the Commission's approval of the Company's environmental
29 compliance and Mustang plant modernization plans (as detailed below) and Commission

1 authorization of a cost recovery rider. I will discuss how the Company developed its
2 plans for environmental compliance, Mustang modernization and the costs and timing
3 associated with implementation of these plans. I will also discuss the cost recovery
4 process proposed by the Company. Finally, my testimony explains why OG&E believes
5 such plans are reasonable and in the public interest.
6

7 **Q. What relief is OG&E requesting of the Commission in this proceeding?**

8 A. The Company is requesting that the Commission approve: (i) the Company's
9 environmental compliance plan; (ii) the replacement generation for the retiring Mustang
10 generating units; (iii) the proposed rider for recovery of the revenue requirement for
11 OG&E's environmental compliance plan and Mustang plant modernization; (iv)
12 regulatory assets for certain stranded assets and for certain Operation and Maintenance
13 ("O&M") costs; (v) inclusion of air quality control systems ("AQCS") consumables in
14 the fuel adjustment clause ("FAC") and (vi) approval of emission control technology
15 depreciation rates and Mustang plant depreciation rates.
16

17 **Q. What overall objectives does OG&E achieve with its environmental compliance plan
18 and Mustang plant modernization?**

19 A. OG&E approached the development of its environmental compliance plan and the
20 Mustang modernization with a number of objectives in mind. The key objectives are to:
21 • Comply with the currently effective environmental regulations and ensure system
22 reliability by meeting Southwest Power Pool, Inc. ("SPP") capacity requirements;
23 • Maintain fuel diversity without relying on either coal or gas as a predominant fuel
24 source;
25 • Provide the lowest reasonable cost to customers and also continue to empower
26 customers through demand-side management programs; and
27 • Provide the Company with operational and planning flexibility to handle future
28 challenges like additional renewable generation, the growing age of our generation
29 assets, potential environmental regulatory risks and uncertainty around future fuel
30 costs.

1 As I explain in my testimony, OG&E has crafted its environmental compliance and
2 Mustang modernization plans to meet each of these objectives. In meeting these
3 objectives, OG&E believes that its plans are in the public interest because they address
4 critically important environmental and electric supply requirements at the lowest
5 reasonable cost to our customers, and the Company asks that they be approved by this
6 Commission.

7
8 **Q. What is the Company's environmental compliance plan?**

9 **A.** EPA has promulgated two sets of regulations under the federal Clean Air Act (*i.e.*, the
10 Regional Haze rule and the Mercury and Air Toxics Standards ("MATS") rule) that
11 directly affect certain OG&E coal and natural gas-fired generating facilities. These rules
12 require OG&E to take steps to meet new emission limits for nitrogen oxide ("NO_x"),
13 sulfur dioxide ("SO₂"), and mercury. In light of these new emission limits, OG&E
14 undertook a review of the technological options for complying with those emission
15 limits. The options included installation of different kinds of control technology,
16 conversion of coal-fired boilers to natural gas, and retirements. After identifying the
17 technological options for complying with those emission limits, OG&E performed a
18 resource planning analysis to identify the lowest reasonable cost options for complying
19 with the rules. After reviewing and analyzing its options, OG&E developed the
20 following plan to comply with Regional Haze and MATS, address its resource needs, and
21 best position the Company for potential environmental requirements:

- 22 • To meet the SO₂ emission requirements of Regional Haze, OG&E will install dry
23 scrubbers on both coal-fired generating units at the Sooner Power Plant. OG&E will
24 also convert two of the three coal-fired generating units at the Muskogee Power Plant
25 to natural gas and repower those boilers to accommodate that change in boiler fuel.
26 The deadline for meeting these SO₂ emission requirements is January 4, 2019.
- 27 • To meet the NO_x emission requirements of Regional Haze, OG&E will install low
28 NO_x burners with over-fire air systems on the four coal units affected by Regional
29 Haze (Sooner 1 and 2 and Muskogee 4 and 5) and on the three gas units at the
30 Seminole Power Plant affected by Regional Haze. OG&E began installation of low
31 NO_x burner technology in Spring 2013 to meet the deadline of January 27, 2017.

- To meet the mercury emissions requirements of MATS, OG&E will install Activated Carbon Injection (“ACI”) technology on all of its coal-fired generating units by April 2016.

Q. What is the Mustang modernization plan?

A. OG&E is seeking approval to replace the retiring Mustang generating units. The existing Mustang generating units were brought into service in the 1950s and those units are some of the oldest generation units of their type and size currently operating in the United States. All of Mustang’s steam units are well beyond the average life for this type of unit. The Company has decided to replace the capacity of the steam units at the Mustang plant with natural gas-fired combustion turbines (“CTs”) at the existing plant site.

Q. What additional witnesses are presenting testimony to support the Company’s position?

A. Chart 1 below lists each witness and the purpose of his or her testimony in support of the Company’s position.

Chart 1

OG&E Witness List		
Witness	Title	Purpose of Testimony
Donald R. Rowlett	Managing Director Regulatory	Identifies each of the Company witnesses, outlines the relief requested and explains OG&E’s environmental compliance and Mustang modernization plans. Also, discusses how the Company developed its plans, the costs and timing associated with implementation of these plans, and the Company’s proposed cost recovery
Usha M. Turner	Director Environmental	Describes the EPA rules related to this filing requiring compliance and the air permitting process
Leon C. Howell	Director Resource Planning	Describes the 2014 Integrated Resource Planning process that was relied upon to develop OG&E’s environmental compliance plan and generation plan for resource needs
John J. Reed	Concentric	Independent review of the IRP process, assumptions and selected solution
Robert J. Burch	Director, Power Supply Services	Describes the Company’s generation units affected by this filing as well as the environmental control technology selection and generation resources selected for the Mustang site
John J. Spanos	Gannett Fleming Valuation and Rate Consultants	Supports the depreciation study and proposed rates
Sheri D. Richard	Director Revenue Requirements	Describes the costs, revenue requirement, recovery mechanism and customer impacts of the Company’s environmental plan and Mustang modernization

1 **I. OVERVIEW OF THE PRESENT CAUSE**

2

3 **Q. Why is OG&E seeking the relief requested in this cause?**

4 A. After many years of challenging the EPA on the requirements of its Regional Haze rule
5 both administratively and through the courts all the way to the U.S. Supreme Court,
6 OG&E must now take steps to meet the deadline for compliance with both the EPA's
7 Regional Haze rule and MATS rule. The rules now in effect require OG&E to make very
8 complex and important decisions about a large portion of its generating fleet and
9 implement those decisions in short order. These rules touch approximately 4,000 MW
10 (or 63 percent) of OG&E-owned generating capacity and have compliance deadlines
11 within 5 years.

12

13 **Q. Why did OG&E challenge the EPA on the requirements of Regional Haze?**

14 A. While OG&E is committed to the environment and reducing haze-causing emissions in
15 Oklahoma, OG&E believed that there were more cost effective ways to comply with the
16 requirements of Regional Haze than to install costly retrofits on its coal-fired generating
17 units or to convert those units to natural gas. The belief was influenced by the fact that
18 the Regional Haze rule is intended to improve visibility in national parks and wilderness
19 areas in and around Oklahoma. OG&E believes that the State created a plan to address
20 the requirements of the rule that more reasonably balanced the intended benefits and
21 costs. For these reasons, the Company filed administrative and judicial challenges to the
22 EPA's plan. Unfortunately, OG&E's challenges to the EPA's Regional Haze rule ended
23 when the Company's petition for a *Writ of Certiorari* was denied by the U.S. Supreme
24 Court in May 2014. The Company has no choice now other than to comply with the EPA
25 Federal Implementation Plan ("FIP"). However, OG&E's challenges provided benefits
26 to customers regardless of the outcome.

27

28 **Q. Despite being unsuccessful at the U.S. Supreme Court, was there any benefit to the**
29 **appellate review of the EPA FIP?**

30 A. Yes. OG&E, together with the Oklahoma Attorney General and the OIEC, was
31 successful in arguing and receiving a stay of the EPA FIP. The stay effectively stopped

1 the compliance clock and allowed OG&E to push out the compliance deadline for nearly
2 two years. Without the stay, OG&E would have had to move forward with compliance
3 by entering into procurement contracts and incurring large capital expenditures in an
4 effort to meet the compliance deadline. The stay allowed the Company to fight all the
5 way to the Supreme Court without having to commit capital and incur related
6 expenditures, thereby deferring the impact of such costs on customer bills. The stay also
7 gave the Company more time to install Smart Grid technology. This technology provides
8 customers with a tool for mitigating the impacts of the EPA mandated cost increases.
9 The two year delay also allowed technology to advance, including the circulating dry
10 scrubber technology ultimately selected by the Company, and enabled OG&E to analyze
11 compliance options in light of environmental rules that were proposed or implemented by
12 the EPA during the two-year stay period.

13 One of the more important benefits of the two year delay was that it gave OG&E
14 time to make a decision after the SPP Integrated Marketplace ("IM") was fully developed
15 and implemented. OG&E now has the benefit of utilizing SPP market models to depict
16 future production costs in the SPP IM, which allows a better understanding of how
17 OG&E's units will perform in the context of the SPP IM over time.

18
19 **Q. Why is this compliance decision so complex and important?**

20 **A.** As stated above, Regional Haze and MATS touch 4,000 MW of OG&E-owned
21 generating capacity. This is 63 percent of the generating capacity that OG&E must
22 maintain for reliability. For Regional Haze compliance, OG&E had to decide whether to
23 invest in its four affected coal units by installing required emission control equipment, to
24 retire and replace those assets or to convert those assets to natural gas. Every compliance
25 option that OG&E reviewed involved making assumptions about numerous uncertainties,
26 including future fuel costs, potential environmental regulatory risks, changing demand
27 growth and the need for future generating capacity to meet demand growth, and how
28 OG&E's existing generation units will run in the new SPP IM. As explained by OG&E's
29 other witnesses in this cause, addressing these uncertainties requires complex
30 assumptions about the future and significantly increases the difficulty of the decision-
31 making process. These decisions are critical to the Company and its customers. As

described by OG&E's witnesses, all of the various compliance options are expensive and have a large financial impact on our customers.

Q. How did OG&E approach its decision on how to comply with these rules?

A. OG&E reviewed the emission requirements of the rules and the required compliance timelines. OG&E Witness Usha Turner testifies to the specifics about the emission limits contained in the Regional Haze and MATS rules and the potential regulatory risks associated with continued coal generation.

Next, OG&E considered all technological options for achieving compliance with each requirement in the timeline required by each rule. While the technologies selected for compliance with MATS and the NO_x emission limits of Regional Haze were relatively straightforward because of cost effectiveness or feasibility, OG&E had to make significant decisions in how to comply with the SO₂ emission limits contained in the Regional Haze FIP. OG&E Witness Robert Burch explains the various technological options for complying with the emission limits, how OG&E evaluated these options, and why OG&E selected the chosen technology.

To evaluate how to comply with the Regional Haze FIP, OG&E had to employ IRP economic modeling to study what was the lowest reasonable cost option for compliance. OG&E Witness Leon Howell testifies regarding OG&E's Integrated Resource Planning analysis and how the various compliance options compare under his economic modeling.

Q. What other issues complicated the Company's decision?

A. For reliability, OG&E must maintain a capacity reserve margin to ensure it has enough generation to serve its load plus 12 percent. This means that OG&E does not have the choice of simply retiring the 2,000 MW of coal generation affected by the SO₂ emission requirements of the Regional Haze FIP. Whatever OG&E decided to do, it had to maintain that capacity by either installing scrubbers, converting those units to natural gas (instead of coal), or replacing those units. Scrubbing the coal units is much more capital intensive than converting those units to natural gas, but the use of natural gas as a boiler fuel is more expensive than using coal.

1 In addition, OG&E has some very old generating units in its fleet. As explained
2 by OG&E witness Robert Burch, OG&E's existing Mustang units are at the end of their
3 useful lives and should be retired by 2018. Unfortunately, OG&E needs to replace the
4 Mustang capacity to meet its capacity reserve requirements. Therefore, OG&E had to
5 develop portfolios in the IRP economic modeling process that allow OG&E to (i) comply
6 with MATS and Regional Haze; (ii) push off new incremental generating capacity in
7 furtherance of OG&E's 2020 goal; and (iii) maintain the generating capacity from its coal
8 units and replace the capacity of the retired Mustang units.

9 Finally, there are several potential EPA environmental rules. The requirements
10 and timing of these rules are not certain, but they pose risks for continuing to burn coal at
11 OG&E's facilities. OG&E's actions to address Regional Haze and MATS including the
12 proposed conversion of the two Muskogee units help mitigate the risks of these future
13 regulations.

14
15 **Q. What decision did OG&E ultimately make?**

16 **A.** OG&E decided to convert two of its coal-fired generating units at Muskogee to natural
17 gas and to maintain coal-fired generation at its two Sooner units. OG&E also decided to
18 install necessary NO_x emission controls on certain coal and gas-fired generating units
19 and ACI on all five of its coal-fired generating units. This plan allows OG&E to (i)
20 comply with the current effective rules; (ii) preserve some coal generation for fuel
21 diversity; and (iii) position the company to better handle potential regulatory restrictions
22 on coal generation. Most importantly, OG&E's IRP economic analysis shows that this
23 plan is the lowest reasonable cost to customers. In addition, OG&E has chosen to replace
24 its soon-to-be retired Mustang units with new, quick-starting and flexible combustion
25 turbines to better respond to SPP dispatch signals and the uncertainty associated with
26 intermittent renewable generation, such as wind and solar.

27
28 **Q. Please explain why OG&E believes that a combination of scrubbing and conversion
29 to natural gas is the appropriate solution for complying with the Regional Haze FIP.**

30 **A.** Since OG&E built its coal plants, the Company has been able to maintain a diverse mix
31 of fuel options for its electric generating needs. Over the years, OG&E's approximately

1 2,500 MW of inexpensive coal-fired generation has allowed the Company to consistently
2 have some of the lowest retail electric rates in the country. It has also provided a hedge
3 against spikes in natural gas prices and allowed OG&E customers to be relatively
4 insulated from those spikes.

5 In a report, released in July 2014 by IHS Energy titled *The Value of US Power*
6 *Supply Diversity*, the authors assessed the value of the portfolio effect and substitution
7 effect imbedded in the nation's current power supply diversity. Quoting from the
8 study—

9 In the past three years, generation supply diversity reduced US power supply cost by
10 \$93 billion per year with the majority of the benefit coming from the portfolio effect.
11 These estimates are conservative because they were made only across the recent past,
12 2010 to 2012. An evaluation over a longer period of history would show increased
13 benefits from managing greater levels of fuel price risk.¹

14 It is because of this value that fuel diversity continues to be one of OG&E's
15 guiding principles as we make important decisions. This is especially important when
16 one considers the volatility of natural gas prices. At the same time, the Company faces
17 risks by continuing to invest in all four Regional Haze-affected coal-fired units. As
18 OG&E Witness Turner explains, there are more regulations that are being proposed and
19 finalized in the near future that could impact coal-fired generating facilities. These
20 regulations could mandate even more costly retrofits or increase the cost of coal
21 generation. With this environmental regulatory risk in mind, OG&E is proposing to
22 mitigate its potential risk by investing in scrubbers at its Sooner facility, and convert
23 Muskogee 4 and 5 to natural gas retaining the converted Muskogee units for capacity
24 margin requirement purposes.

25
26 Q. **What is the economic benefit of the scrubber/conversion plan?**

27 A. OG&E's analysis shows that its scrubber/conversion plan is the lowest cost option in the
28 expected case. OG&E also varied key assumptions to see how the various alternatives
29 reacted to different scenarios and sensitivities. In all scenarios and sensitivities studied

¹ The Value of US Power Supply Diversity, Lawrence J. Markovich, Arron Marks and Leslie Martin, IHS Energy; July 2014, p. 34.

1 by OG&E Witness Howell, the scrubber/conversion approach that OG&E decided to
2 implement was either the best option or the second best option. This means that the
3 scrubber/conversion plan is also the option that best mitigates the various risks
4 considered in the scenarios and sensitivities.
5

6 **Q. What are the environmental benefits of this scrubber/conversion plan?**

7 A. As discussed by OG&E Witness Turner, this plan significantly reduces the emissions of
8 key pollutants from the OG&E units. Low NO_x burners will reduce the NO_x emission
9 rates from the coal units by over 50 percent; scrubbers at Sooner will reduce SO₂
10 emission rates by about 90 percent and ACI is expected to reduce mercury emission rates
11 by about 80 percent. The gas conversion at the Muskogee units will practically eliminate
12 SO₂ from those two units and is estimated to significantly reduce NO_x emissions at those
13 two units. In addition, since the CO₂ emissions rate for natural gas is roughly half the
14 CO₂ emissions rate for coal, the conversion of the Muskogee units will reduce OG&E's
15 CO₂ emissions overall. The gas conversion will also lessen the ash handling,
16 management and disposal needed for Muskogee.
17

18 **Q. Please elaborate on how OG&E is planning to comply with the NO_x emission**
19 **requirements of Regional Haze.**

20 A. In order to comply with the NO_x emissions limits contained in the Regional Haze State
21 Implementation Plan ("Regional Haze SIP"), OG&E has begun installing low NO_x
22 burners with over-fire air at its four Regional Haze affected coal plants (*i.e.*, Sooner units
23 1 and 2 and Muskogee units 4 and 5) and its three Regional Haze affected gas units (*i.e.*,
24 Seminole units 1, 2 and 3). Low NO_x burners were the identified controls contained in
25 the Best Available Retrofit Technology ("BART") determination submitted by OG&E
26 and adopted by the Oklahoma Department of Environmental Quality ("ODEQ") in the
27 Regional Haze SIP, which was approved by the EPA. OG&E Witness Turner testifies to
28 the specifics about the NO_x emission limits contained in the Regional Haze rule and
29 OG&E Witness Burch explains the various technological options for complying with the
30 NO_x limits contained in the Regional Haze rule and why OG&E believes that low NO_x
31 burners with over-fire air is the best option for meeting the limits.

1 Q. **How is OG&E planning to meet the mercury limits contained in the MATS rule?**

2 A. The MATS rule requires OG&E to reduce its mercury emissions from all five of its coal-
3 fired generating units (*i.e.*, Sooner units 1 and 2 and Muskogee units 4, 5 and 6) by April
4 2016. OG&E has selected Activated Carbon Injection (“ACI”) technology as the control
5 technology needed to comply with those mercury emission limits. OG&E Witness
6 Turner testifies to the specifics about the mercury emission limits contained in the MATS
7 rule and OG&E Witness Burch explains the various technological options for complying
8 with the mercury limits and why OG&E believes that ACI is the best option for meeting
9 the limits.

10
11 Q. **Why is OG&E installing low NO_x burners and ACI on Muskogee 4 and 5 if those
12 units will be converted to natural gas?**

13 A. The Company will continue to run the Muskogee coal units for the benefit of our
14 customers until January 2019. However, OG&E is installing low NO_x burners at
15 Muskogee 4 and 5 because the compliance deadline for meeting the NO_x emission limits
16 contained in the Regional Haze SIP is January 27, 2017. Low NO_x burners will still be
17 needed to control NO_x after the Muskogee units are converted to natural gas. OG&E
18 Witness Howell testifies why it is more economical to install ACI on the Muskogee 4 and
19 5 coal units even though those units will be converted to natural gas approximately three
20 years later.

21
22 Q. **Did OG&E consider wind resources as a solution to Regional Haze and MATS?**

23 A. Yes. However, as explained by OG&E Witness Howell, wind generation does not serve
24 as an effective resource to address the replacement capacity needs in OG&E’s
25 environmental compliance plan. Wind energy has a very low capacity value under SPP
26 rules. SPP only allows OG&E to count approximately 5% of the nameplate capacity
27 towards its planning capacity margin requirements. If OG&E retires one 500 MW coal
28 unit, we would need to install approximately 10,000 MW of nameplate wind capacity to
29 satisfy the SPP planning capacity margin requirements.

30 OG&E is still very interested in wind. With 841 MW of wind generation in its
31 portfolio, OG&E has always been a strong advocate for wind energy. In fact, OG&E

1 helped open up the northwest part of the state to greater wind development by proposing
2 and constructing OG&E's Windspeed transmission line. As discussed below, OG&E's
3 Mustang modernization plan will complement wind energy and provide OG&E with a
4 more flexible fleet that can handle additional wind generation in the future. OG&E is
5 also always looking at wind energy as a way to create customer savings. Nevertheless, as
6 noted by OG&E Witness Howell, OG&E believes that it should wait before considering
7 adding more wind to its portfolio. OG&E is still trying to understand (i) how wind
8 affects SPP market prices and vice versa; and (ii) whether additional transmission will
9 remedy congestion issues near wind energy-rich areas in the SPP that have been
10 experiencing SPP market price volatility. As included in the 2014 IRP Update Action
11 Plan, OG&E will issue a request for information in the Spring of 2015 to gain market
12 intelligence for additional wind energy.

13
14 **Q. Please outline the required compliance deadline for Regional Haze, as well as, the**
15 **timing of permitting and installation of the various Regional Haze compliance**
16 **components of the environmental plan.**

17 **A.** As explained by OG&E Witness Turner, the Regional Haze rule has separate deadlines
18 for the NO_x and SO₂ emission limits contained in the Regional Haze SIP and Regional
19 Haze FIP, respectively. The NO_x emission limit requiring the installation of low NO_x
20 burners with over-fire air must be met by January 27, 2017. The SO₂ emission limit
21 contained in the Regional Haze FIP must be met by January 4, 2019. OG&E has already
22 received permits for the low NO_x burners with over-fire air for Sooner units 1 and 2 and
23 Muskogee units 4 and 5 and has completed installation on 3 coal units (Sooner units 1 &
24 2 and Muskogee unit 5). OG&E plans to install the remaining low NO_x burners with
25 over-fire air on the remaining units between Fall 2014 and January 2017. OG&E filed
26 permits for the scrubber installations in June 2014. OG&E will seek permits for the
27 conversion of Muskogee 4 and 5 in time to perform the conversions by the end of 2018.

1 Q. **Please outline the required compliance deadline for MATS, as well as, the timing of**
2 **permitting and installation of the MATS compliance components.**

3 A. As stated above, to comply with MATS, the Company plans to install ACI systems on its
4 five coal-fired units (Sooner units 1 and 2 and Muskogee units 4, 5 and 6). The MATS
5 compliance deadline was established as April 2015 with the provision for a one year
6 extension. As discussed by OG&E Witness Turner, the Company requested a one year
7 extension from the ODEQ and was granted the extension for both Sooner and Muskogee
8 units. OG&E's MATS compliance deadline is now April 16, 2016. OG&E submitted
9 permit applications for the installation of ACI systems on Muskogee and Sooner in June
10 2014. The procurement process for the ACI equipment has begun and OG&E plans to
11 complete installation prior to the compliance deadline.

12
13 Q. **Please describe OG&E's Mustang modernization plan.**

14 A. As explained by OG&E Witness Burch, the existing Mustang units should be retired for a
15 number of reasons. OG&E must replace those units when they retire in order to comply
16 with SPP's planning capacity requirements. Therefore, OG&E is seeking approval of
17 replacement generation to take advantage of its Mustang site and the soon to be retired
18 Mustang generating units. As explained by OG&E Witness Burch, the Company will
19 install approximately 400 MW of new, modern combustion turbines ("CTs"). These new
20 CTs have significant benefits and advantages over older steam gas units.

21
22 Q. **Do the new Mustang Units provide operational advantages?**

23 A. Yes. Since OG&E is planning on installing quick-starting combustion turbines at
24 Mustang, OG&E will be able to react with greater speed to the signals of the SPP IM.
25 Whereas the old Mustang units would take at least 10 hours to bring on-line during a cold
26 start, the new combustion turbines will only take around 10 minutes to reach base load.
27 This would allow OG&E to create economic benefits for customers due to the ability to
28 respond quicker than other units in the SPP IM resulting in increased sales which are
29 credited back to customers through the Fuel Adjustment Clause ("FAC"). In addition,
30 with the growing amount of intermittent wind generation on the OG&E system and the
31 SPP footprint, these efficient and quick-starting combustion turbines can react quicker to

1 changes in wind patterns and will complement the growing wind generation in the region.
2 As the amount of wind generation grows, this type of agile gas generation will be
3 advantageous to reliable operations in the SPP. OG&E Witness Burch also describes
4 how the new Mustang units are more reliable, more efficient, and have lower emission
5 rates.

6
7 **Q. Are there any other benefits of the new Mustang units?**

8 A. Yes. Since converting Muskogee Units 4 and 5 would result in higher variable
9 production costs, those units will operate less in the SPP IM. By replacing the Mustang
10 units with efficient, lower heat rate combustion turbines, OG&E will have units with
11 lower fuel and operating costs that are more likely to be dispatched in the SPP IM than
12 the converted Muskogee units. OG&E believes that the increased dispatch of the new,
13 efficient Mustang units (and the associated revenues from such increased dispatch) will
14 partially offset the reduction in sales from the converted coal units being moved down the
15 generation “stack” and dispatched less in the SPP IM.

16
17 **Q. Why is the Mustang site ideal for location of the new CTs?**

18 A. By replacing the existing units with new combustion turbines, OG&E can take advantage
19 of existing infrastructure at the Mustang site such as secure property, existing roads,
20 facilities to support maintenance and operation, water supply/water rights, and fuel
21 supply facilities, as well as existing transmission infrastructure. The Mustang location
22 also allows the Company to obtain permits for the new Mustang generation using
23 emission netting discussed by OG&E Witness Turner. This avoids the significant
24 expense and need to acquire and develop a completely new site and infrastructure.

25 Finally, this plan for Mustang allows OG&E to maintain generation near its
26 largest load center. Such generation close to Oklahoma City can be online quickly when
27 needed in the event of a problem on the SPP transmission system or if needed for voltage
28 support. Moreover, it will allow the site to continue to provide much-needed ad valorem
29 tax revenue to local government and schools. Additionally, the Mustang site is currently
30 staffed with a highly skilled/trained workforce.

1 Q. **Why is the 2018 timing important for the Mustang replacements?**

2 A. OG&E has identified the end of 2017 as the date to complete retirement of the existing
3 Mustang units. As explained by OG&E Witness Burch, because the existing Mustang
4 units are among the oldest units in their class in the United States, those Mustang units
5 are much more likely to experience a problem that would cause OG&E to invest millions
6 in these short-lived units just to meet capacity margin requirements. Moreover, with the
7 demands of the SPP IM, OG&E is concerned that the dispatch instructions of the SPP
8 may lead to even more stress on these assets, leading to a greater likelihood that OG&E
9 will be called to invest heavily in those units merely to bridge the capacity margin gap.
10 Replacing the Mustang units in 2018 allows OG&E to retire those older units in 2017 and
11 still meet the SPP capacity requirements.

12
13 Q. **Are there any permitting reasons for replacing the Mustang units in 2018?**

14 A. Yes. If OG&E employs the emissions netting analysis discussed in OG&E Witness
15 Turner's testimony, it could replace the existing Mustang units with almost as much net
16 generating capacity as there is now. OG&E is increasingly losing its ability to maximize
17 the amount of generation at the Mustang site through netting. If the emissions to "net"
18 against reach too low a level, the amount of MWs of replacement generation that OG&E
19 can locate at the Mustang site is impacted. As described by Witness Burch, OG&E must
20 begin preparing the ODEQ permit application no later than December 2014 in order to
21 site the new CTs needed by the Company.

22
23 Q. **Did OG&E conduct a competitive solicitation for replacing the existing Mustang
24 units in 2018?**

25 A. No. As explained by OG&E Witness Burch, there are many reasons why OG&E should
26 preserve the Mustang site. First, the site is in close proximity to Oklahoma's largest load
27 center, which means that OG&E can maintain adequate amounts of local generation for
28 reliability in the case of a disruption of the regional transmission grid. Preserving local
29 generation at the Mustang site also means a reduction in line losses and greater options
30 for supporting voltage control at OG&E's largest load center. Second, as explained
31 above, the Mustang site already has the infrastructure and workforce to support new

generation. The cost of the Mustang property on the Company's book is approximately \$102,000. If a similar sized site near Oklahoma City could be purchased and in the unlikely event that it could be permitted, the cost of the land would be dramatically higher. A site located inside OG&E's largest load center with the infrastructure existing at Mustang cannot be replicated. As explained by OG&E Witness Turner, OG&E currently has the ability to obtain permits at the Mustang site by coupling retirements of the existing units with the siting of the new units. In addition, OG&E was unable to identify any combustion turbines available for purchase in the SPP.

II. THE COST RECOVERY PROCESS

Q. What is the estimated revenue requirement associated with the environmental compliance plan and Mustang plant modernization?

A. Chart 2 in OG&E Witness Richard's testimony shows the revenue requirement calculation results using the Company's estimated costs related to the environmental compliance plan and Mustang plant modernization:

Chart 2
Revenue Requirement Summary
(\$ Millions)

Line No.	Description	2015	2016	2017	2018	2019
1	Average Capital Investment	\$ 117.8	\$ 276.0	\$ 504.4	\$ 862.7	\$ 1,087.1
2	Return	13.8	32.3	59.1	101.1	127.4
3	O&M Expense	-	0.8	0.9	10.9	23.6
4	Depreciation	1.1	5.5	6.1	24.3	47.3
5	Property Tax	0.5	1.9	3.6	6.4	10.6
6	Regulatory Asset Amortization	-	-	-	-	5.9
7	Annual Revenue Requirement	\$ 15.4	\$ 40.5	\$ 69.6	\$ 142.7	\$ 214.7
8	OK Annual Revenue Requirement	\$ 13.8	\$ 36.3	\$ 62.3	\$ 127.7	\$ 192.2

Chart may not add down due to rounding

Q. How is OG&E proposing to recover its revenue requirement?

A. The Company proposes recovering its revenue requirement through a new rider called the Environmental and Generation Plan Rider ("EGP Rider"). OG&E's proposed rider includes Construction Work in Progress ("CWIP") regulatory treatment. CWIP treatment

1 will allow OG&E to begin recovering financing cost on capital expenditures as they are
2 incurred. More importantly, this will smooth out the cost impact on customer bills by
3 gradually phasing in the revenue requirement. This approach mitigates the dramatic
4 spike in rates that would occur if rates are not adjusted until after projects are completed
5 and assets are placed in service. As discussed by OG&E Witness Richard, CWIP
6 treatment will lead to a gradual increase of between 0.7% and 3.3% a year under the
7 Company's proposed EGP rider. However, using traditional allowance for funds used
8 during construction ("AFUDC") regulatory treatment, a residential customer would
9 experience an increase of over 5.4% in 2019. In addition, when you consider the increase
10 in variable O&M, fuel costs, and other FAC rider impacts, the total increase in a
11 residential customer's bill would be nearly 8.9% in 2019 under the AFUDC method.
12

13 **Q. Does the Company prefer either method?**

14 **A.** The customer impact of CWIP treatment or accrual of AFUDC over the life of the assets
15 is the same when measured on a net present value basis. The Company supports CWIP
16 treatment as it smooths out the cost impact which minimizes the rate shock to customers.
17 Both CWIP treatment and AFUDC are accepted regulatory treatment.
18

19 **Q. Does OG&E seek any other relief with regard to cost recovery?**

20 **A.** Yes. In addition to approval of the rider, OG&E requests approval of regulatory assets
21 for certain stranded assets and for certain Operation and Maintenance ("O&M") costs,
22 emission control technology depreciation rates and Mustang plant depreciation rates.
23 Also, OG&E seeks approval for including certain fuel-related costs through the FAC.
24 Those fuel-related costs are for products "consumed" in environmental control
25 technology for reducing air emissions. Such products include limestone, powder
26 activated carbon, and ammonia. OG&E Witness Richard discusses each of these requests
27 in greater detail with the exception of depreciation rates, which is addressed by Witness
28 John Spanos.

1 Q. **How will the revenue requirement be allocated to Oklahoma jurisdictional retail**
2 **customers in the EGP rider?**

3 A. As reflected on line 8 in Chart 2 above, the revenue requirement from line 7 is allocated
4 to the Oklahoma jurisdictional retail customer classes based on the production demand
5 methodology agreed to in the Company's last general rate case. This methodology is
6 commonly used for allocation of production assets and has been approved in previous
7 Commission orders.
8

9 Q. **Using the production demand allocation methodology, what is the customer bill**
10 **impact when combining the estimated revenue requirement calculation and**
11 **estimated Fuel Adjustment Clause costs?**

12 A. Chart 3 below shows the estimated bills by class for the EGP rider and FAC for 2015
13 through 2019:

Chart 3
EGP Rider and FAC Billing Impact
(\$/month)

Class	Average Monthly Bill	Average Monthly kWh	2015	2016	2017	2018	2019	Total
Residential	\$ 108.51	1,100	\$ 0.80	\$ 2.74	\$ 1.63	\$ 3.88	\$ 7.26	\$ 16.30
General Service	\$ 185.61	1,800	\$ 1.33	\$ 4.59	\$ 2.73	\$ 6.49	\$ 12.16	\$ 27.31
Power & Light	\$ 2,982.53	43,000	\$ 21.22	\$ 90.95	\$ 45.81	\$ 106.89	\$ 240.24	\$ 505.10
Large Power & Light	\$ 209,584.22	4,100,000	\$ 1,526.34	\$ 7,683.36	\$ 3,446.16	\$ 7,923.95	\$ 20,265.32	\$ 40,845.12

14 Q. **How has the Company attempted to minimize the impact on customers' bills?**

15 A. As explained above, OG&E fought the EPA over several years when it believed a more
16 cost effective solution made sense. This fight resulted in a judicial stay that delayed the
17 impact on customers for two years. When OG&E was unsuccessful at the Supreme
18 Court, it completed a process to identify the compliance option that not only was the
19 lowest reasonable cost, but also would best position the Company and its customers to
20 handle future risks (like increasing fuel costs, potential environmental regulations, and
21 SPP market prices). OG&E is also conducting competitive bidding for the equipment
22 and installation involved in the both the environmental compliance plan and the Mustang
23 modernization. Finally, OG&E is proposing a cost recovery process to ease customers
24 into these higher rates.

III. CONCLUSION

Q. **How would you characterize the present cause?**

A. OG&E has diligently pursued its remedies under the law with the intent not to be in the position it is currently in. OG&E believed strongly in its fight at the U.S. Supreme Court and its position that the State of Oklahoma should have been able to craft a more cost-effective approach to complying with Regional Haze. Losing that legal battle required OG&E to make some very hard choices regarding its four affected coal-fired generating units. When OG&E approached those choices, it tried to stick to a set of objectives in deciding what was best for the Company and its customers. OG&E Witness Howell explains in his testimony how the Company's environmental compliance plan (and the accompanying Mustang modernization) meets those set of objectives:

- (1) **Reliability:** OG&E will remain in compliance with SPP capacity margin requirements throughout the forecast period; in addition, replacing the capacity of the retired Mustang units with CTs at the same location helps maintain reliability in the Oklahoma City load center;
- (2) **Compliance with Existing Environmental Rules:** the proposed environmental compliance plan complies with the MATS and Regional Haze requirements;
- (3) **Expected Cost to Customers:** the Scrub/Convert performs well under almost all cases, including the sensitivity and market price scenario cases;
- (4) **Fuel Diversity:** the Scrub/Convert preserves OG&E's fuel diversity as compared to alternative environmental compliance plans that expose the Company to dependence on either natural gas or coal as the predominant fuel;
- (5) **Operational Flexibility:** the quick start CTs on the Mustang Plant site provide operational flexibility to respond to intermittent wind and solar generation, fluctuating load due to distributive generation and reliability issues that may arise;
- (6) **Portfolio Age:** we are retiring our oldest units and replacing the capacity that they have provided with new CTs;

1 (7) **Demand-Side Resources:** OG&E's commitment to demand-side resources will
2 continue under the proposed IRP action plan;

3 (8) **Exposure to Fuel and Emissions Prices:** the Scrub/Convert environmental
4 compliance plan strikes an appropriate balance between exposure to natural gas
5 prices and exposure to coal and CO₂ prices; and

6 (9) **Exposure to Potential Environmental Regulation:** while it can be extremely
7 difficult to plan for potential environmental regulation, OG&E's pursuit of the 2020
8 goal and commitment to wind energy have helped provide a hedge against potential
9 environmental regulation; the Scrub/Convert will continue this progress in a
10 responsible way. In addition, the new Mustang CTs will have lower emission rates
11 for NO_x, CO, particulate matter, volatile organic compounds and CO₂.

12 When OG&E's plans are viewed through these objectives, OG&E believes that its
13 environmental compliance plan and Mustang modernization are in the public interest and
14 should be approved by the Commission.
15

16 Q. **Why is the timing of the relief sought in this cause important?**

17 A. Following the Supreme Court decision in May 2014 to not consider OG&E's challenge to
18 the FIP, the Company moved as quickly as it could to complete the IRP update process
19 and then promptly file this cause. We certainly appreciate and honor the Commission's
20 responsibility to carefully and diligently analyze our requests in this cause.
21 Unfortunately, the timing of the Supreme Court's decision and the deadlines imposed by
22 the EPA leave us no choice but to request a Commission decision in this cause by
23 February 6, 2015.

24 As explained in the testimony of OG&E Witness Burch, the environmental
25 compliance plan consists of multiple projects that must be carefully engineered, planned
26 and executed in order to adhere to the various regulatory timelines. These projects
27 involve permitting, contracting, equipment and parts manufacturing, and construction and
28 installation. All of these steps must be undertaken in a schedule that allows OG&E to
29 meet the deadlines discussed above.

1 In addition, OG&E must move expeditiously to permit and construct the new
2 Mustang CTs in order to have those units available by the Summer of 2018. OG&E
3 Witness Burch explains that the Company needs to move forward with contracting in
4 early 2015 so it can proceed with the process of developing those new Mustang units.

5
6 Q. **Does that conclude your testimony?**

7 A. Yes.