

BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

**IN THE MATTER OF THE APPLICATION OF)
OKLAHOMA GAS AND ELECTRIC COMPANY)
FOR AN ORDER OF THE COMMISSION)
AUTHORIZING APPLICANT TO MODIFY ITS)
RATES, CHARGES, AND TARIFFS FOR RETAIL)
ELECTRIC SERVICE IN OKLAHOMA)**

CAUSE NO. PUD 201700496

RESPONSIVE TESTIMONY

OF

SCOTT NORWOOD

ON BEHALF OF

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

AND

OKLAHOMA ENERGY RESULTS

MAY 2, 2018

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RESPONSIVE TESTIMONY OF SCOTT NORWOOD

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1 I. INTRODUCTION

2
3 Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

4 A. My name is Scott Norwood. I am President of Norwood Energy Consulting, L.L.C. My
5 business address is 9408 Bell Mountain Drive, Austin, Texas 78730.

6
7 Q. WHAT IS YOUR OCCUPATION?

8 A. I am an energy consultant specializing in the areas of electric utility regulation, resource
9 planning and energy procurement.

10
11 Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND
12 PROFESSIONAL EXPERIENCE.

13 A. I have over 35 years of experience in the electric utility industry. Since January of 2004 I
14 have served as President and sole proprietor of Norwood Energy Consulting. In this
15 capacity, I have provided electric utility regulatory consulting services to electric
16 consumer and governmental organizations. My consulting practice has been focused
17 primarily on the areas of electric resource planning, power supply system dispatch and
18 operations, transmission planning analyses, and evaluations of electric utility fuel supply
19 and purchased power issues. Before founding Norwood Energy Consulting, I was
20 employed for 18 years as a Principal and Director of the Deregulation Services
21 Department of GDS Associates, Inc., an electric utility consulting firm. From 1984 to
22 1986 I was employed as Manager of Power Plant Engineering for the Staff of the Public
23 Utility Commission of Texas, where I was responsible for analyzing and presenting

1 testimony addressing resource planning, fuel and purchased power cost issues arising
2 from electric utility regulatory filings with the Commission. From 1980 to 1984, I was
3 employed by Austin Energy as a Power Plant Engineer, in which capacity I directed
4 electrical maintenance and design projects at three gas-fired power plants. I received my
5 Bachelor of Science degree in electrical engineering from the University of Texas in
6 December of 1980. Exhibit SN-1 provides a more detailed summary of my background
7 and experience.

8
9 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?**

10 A. I am testifying on behalf of Oklahoma Industrial Energy Consumers (“OIEC”) and
11 Oklahoma Energy Results (“OER”).

12
13 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE OKLAHOMA**
14 **CORPORATION COMMISSION?**

15 A. Yes. I have testified in numerous past base rate and fuel proceedings before the
16 Oklahoma Corporation Commission (“OCC” or “Commission”), including Oklahoma
17 Gas and Electric Company’s (“OG&E”) 2007 application for approval of the Red Rock
18 coal-fired generating station (PUD 200700012); the Company’s 2005 and 2008 base rate
19 cases (PUD 200500151 and PUD 200800398); OG&E’s application for approval of a
20 \$211 million, 120 mile, 345 kV transmission line from Woodward to Oklahoma City to
21 facilitate wind energy imports from western Oklahoma (PUD 200800148); OG&E’s
22 applications for approval of the OU Spirit and Crossroads wind generation projects (PUD
23 200900167 and PUD 201000037); OG&E’s 2006 and 2009 fuel prudence reviews (PUD

1 200700364 and PUD 201000175); the Company's application for approval of a rider to
2 recover Southwest Power Pool ("SPP") transmission charges (PUD 201000146); and
3 OG&E's request for approval of an environmental compliance plan (PUD 201400229). I
4 have also participated on behalf of OIEC in past Commission proceedings involving
5 environmental compliance issues, including Public Service Company of Oklahoma's
6 ("PSO") request for approval of an environmental compliance plan (PUD 201200054) as
7 well as recent public hearings involving environmental compliance proposals presented
8 in the 2014 Integrated Resource Plans ("IRP") filed by OG&E and PSO. Through my
9 participation in these past projects, and similar proceedings in other jurisdictions, I have
10 become very familiar with the operations of power supply resources on OG&E's system
11 and the resource planning issues under review in this case.

12 My Exhibit SN-1 provides a list of my past testimony in regulatory proceedings in
13 Oklahoma and other jurisdictions since 2005, including proceedings before state
14 commissions in Alaska, Arkansas, Florida, Georgia, Iowa, Illinois, Kentucky, Louisiana,
15 Michigan, Missouri, New Jersey, Ohio, Texas, Virginia, Washington, and Wisconsin, and
16 before the Federal Energy Regulatory Commission ("FERC").

17
18 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?**

19 A. The purpose of my testimony is to present my findings and recommendations regarding
20 OG&E's request for approval and cost recovery for the Company's investment in seven
21 new gas-fired combustion turbine generating units at the Mustang Generating Station and
22 the proper level of miscellaneous transmission expenses to be included in the Company's
23 new base rates.

1 **Q. HAVE YOU PREPARED ANY EXHIBITS TO SUPPORT YOUR TESTIMONY?**

2 A. Yes. I have prepared 9 exhibits in support of my testimony.

3

4 **II. SUMMARY OF TESTIMONY**

5

6 **Q. PLEASE SUMMARIZE YOUR MAJOR FINDINGS AND**
7 **RECOMMENDATIONS REGARDING ISSUES ADDRESSED BY YOUR**
8 **TESTIMONY.**

9 A. My testimony addresses the reasonableness of OG&E's investment in the Mustang
10 Modernization Project and the level of miscellaneous transmission expenses that the
11 Company has requested in base rates. I have the following recommendations regarding
12 OG&E's request for cost recovery related to these two issues:

13

14 • OG&E has not demonstrated that its decision to retire and replace four existing
15 Mustang gas-fired generating units with seven new gas-fired Mustang CTs was
16 justified by economics, reliability or other factors. Due to the Company's failure
17 to conduct bidding and address other deficiencies in its Mustang Modernization
18 Plan analysis identified by the Commission's Final Order in Cause No. PUD
19 201400229, I recommend that OG&E's request to recover a return ("profit") on
20 the revenue requirement associated with the Mustang Modernization Plan be
21 disallowed. The Company should not benefit from its failure to competitively bid
22 and from its failure to address the other deficiencies determined by the
23 Commission in OG&E's previous Commission proceeding involving Mustang.

1 OIEC witness Mark Garrett addresses the ratemaking adjustment associated with
2 this recommendation in his Responsive Testimony.

3
4 • Due to OG&E's failure to address the nature or reasonableness of
5 miscellaneous transmission expenses (FERC Account 566) in its testimony, I
6 recommend that the level of transmission O&M expense requested by the
7 Company be reduced by \$18.2 million (Total Company), which represents the
8 unexplained increase in these miscellaneous transmission charges from 2016 to
9 the test year.

10
11 **III. MUSTANG MODERNIZATION PROJECT**

12 **Q. WHAT IS THE MUSTANG MODERNIZATION PROJECT?**

13 A. OG&E's Mustang Modernization Project ("MMP") involves the Company's retirement
14 and replacement of four existing gas-fired steam generating units at the Mustang
15 Generating Facility, with seven new gas-fired combustion turbine units ("Mustang CTs")
16 that have a combined nameplate capacity of 462 MW. The Company notes that this
17 project is the primary reason that OG&E is seeking a rate increase in this case.¹

18
19 **Q. WHAT IS THE ESTIMATED TOTAL COST OF THE NEW MUSTANG CTS?**

¹ See page 5 of the Direct Testimony of OG&E witness Rowlett.

1 A. The estimated final construction cost is \$390 million including AFUDC and Ad Valorem
2 taxes.² The Company estimates the Oklahoma jurisdictional revenue requirement for the
3 project to be \$37.9 million.³

4

5 **Q. HAS THE MMP BEEN AN ISSUE IN PAST OG&E REGULATORY**
6 **PROCEEDINGS?**

7 A. Yes. OG&E originally sought Commission pre-approval of the MMP as part of the
8 Company's proposed Environmental Compliance Plan ("ECP") in OCC Cause No. PUD
9 201400229. After considering the Company's application along with evidence presented
10 by the PUD Staff, OIEC and other interested parties, the Commission denied OG&E's
11 request for pre-approval of the MMP and early retirement and replacement of generating
12 units at its Mustang site, along with recovery of related costs through a rider.⁴

13

14 **Q. WHAT WERE THE KEY ISSUES OF DISPUTE AMONG THE PARTIES IN**
15 **CAUSE NO. PUD 201400229 REGARDING OG&E'S MMP PROPOSAL?**

16 A. The key issues of dispute in Cause No. PUD 201400229 generally involved: 1) the need
17 for retirement of the existing Mustang units, which gave rise to the need for replacement
18 capacity supplied by the MMP; 2) OG&E's claim that there was a need for new quick
19 start generating capacity at the Mustang site to address challenges caused by increasing
20 levels of wind energy and voltage regulation concerns in the Oklahoma City area; and 3)
21 OG&E's failure to conduct competitive bidding to ensure that there were no lower cost

² See page 10 of the Direct Testimony of OG&E witness Rowlett.

³ See page 11 of the Direct Testimony of OG&E witness Rowlett.

⁴ See page 23 of the Commission's Final Order in Cause No. PUD 201400229, dated December 2, 2015.

1 generation or purchased power alternatives to the MMP for replacing the retired Mustang
2 units.

3
4 **Q. WHAT WERE THE PRIMARY FINDINGS UPON WHICH THE COMMISSION**
5 **BASED ITS DECISION TO DENY OG&E'S REQUEST FOR PRE-APPROVAL**
6 **OF THE MMP?**

7 A. The following Findings of Fact from the Final Order in Cause No. 201400229 ("Final
8 Order") appear to have provided the primary basis for the Commission's denial of
9 OG&E's request for pre-approval of the MMP:

- 10 1. Neither the Company's IRP nor testimony demonstrates there is any need for
11 new generation at this time. In addition, OG&E has failed to provide
12 sufficient evidence regarding reasonable alternatives. (Final Order page 18)
- 13
14 2. ...In OG&E's request to retire and replace the Mustang Plant, OG&E failed to
15 seek any competitive solicitations to meet future generation needs. It did not
16 conduct a competitive procurement process for capacity or energy
17 requirements resulting from Mustang unit retirements. (Final Order page 18)
- 18
19 3. ...OG&E failed to provide any substantive data or analysis to support its
20 conclusion that its plan to replace the Mustang Plant is a least cost option for
21 customers. OG&E did not provide any valid engineering study of the
22 Mustang units to support its request to retire the Mustang unit earlier than
23 determined by prior engineering studies conducted on behalf of OG&E and
24 relied upon by OG&E in its 2012 IRP. (Final Order page 18)
- 25
26 13. While OG&E's IRP indicates the CT option provides a slight economic
27 advantage over the other two cases modeled, the IRP does not indicate that
28 capacity is required in the Oklahoma City area or, specifically, at the Mustang
29 site. (Final Order page 19)
- 30
31 15. In evaluating options for obtaining capacity, OG&E considered only self-build
32 options and dismissed the idea of pursuing market options such as existing
33 generators such as Oklahoma Cogeneration (OK Cogen) or PPAs. (Final
34 Order page 20)

- 1
2 16. OG&E failed to demonstrate that the existing Mustang units are at the “very
3 end of their useful lives and need to be retired”. (Final Order page 20)
4
5 18. OG&E accelerated the Burns and McDonnell retirement dates based on
6 OG&E’s claim that increased cycling of the Mustang units associated with
7 dispatch in the SPP IM will cause additional “wear and tear” and create
8 unreliable and unsafe conditions. (Final Order page 20)
9
10 19. OG&E did not conduct any formal study to support its claim regarding
11 additional “wear and tear” for the Mustang units caused by the SPP IM and, in
12 fact, those units have had few starts since the initiation of the SPP IM.
13
14 20. While the Mustang units will require eventual retirement, the exact timing for
15 those retirements is somewhat flexible.
16
17 21. The flexibility in retirement dates allows OG&E the opportunity to solicit
18 market options (RFP) for short-term, intermediate term, and long-term
19 capacity and allow modification of the MMP schedule.
20
21 25. SPP has not conducted an assessment of the need for CTs at the Mustang site
22 or any other specific location in OG&E’s system.
23
24 26. OG&E failed to conduct any formal analysis or study to determine the need
25 for voltage support at the Mustang site.
26
27 29. Absent a competitive procurement process regarding the MMP, OG&E cannot
28 demonstrate that it evaluated all “reasonable alternatives”.
29

30 **Q. ARE THE ABOVE FINDINGS OF FACT STILL APPLICABLE IN DECIDING**
31 **THE REASONABLENESS OF OG&E’S REQUEST FOR APPROVAL OF THE**
32 **MMP IN THIS CASE?**

33 A. Yes. Although OG&E has presented certain new evidence to address the above
34 deficiencies cited by the Commission in rejecting the Company’s request for pre-
35 approval of the MMP in Cause No. PUD 201400229, as discussed later in my testimony,

1 the new information and arguments presented in this case do not invalidate the
2 Commission's earlier findings that were the basis for the earlier denial of the MMP.

3
4 **Q. PLEASE EXPLAIN WHY EACH OF THE ABOVE FINDINGS FROM OCC**
5 **CAUSE NO. PUD 201400229 REMAINS AS A VALID BASIS FOR DENIAL OF**
6 **OG&E'S APPLICATION FOR APPROVAL OF THE MMP?**

7 A. Finding No. 1 above remains valid because the Company has presented the same
8 2014 IRP that was considered by the Commission in Cause No. PUD 201400229 in
9 reaching the findings that there was no demonstrated need for the new Mustang CTs and
10 that OG&E had failed to consider reasonable alternatives to the project.

11 Finding No. 2 remains valid because OG&E chose not to conduct any competitive
12 solicitations for alternatives to the MMP even after the Commission identified this as a
13 problem when it denied pre-approval of the project.

14 Finding No. 3 remains valid, because as explained later in my testimony, the new
15 engineering study conducted by Black & Veatch ("B&V Study") was limited in scope
16 and highly qualified, and does not support early retirement of the Mustang Units.

17 Finding No. 13 remains valid because OG&E's IRP does not demonstrate that
18 capacity is required at the Mustang site, and the new analysis presented by SPP in this
19 case ("SPP Study") is simply a transmission study which does not demonstrate that
20 generation is needed at the Mustang site to avoid reliability problems in the Oklahoma
21 City area, and does not address whether any such problems could be alleviated through
22 other generation or transmission additions.

1 Finding No. 15 remains valid because OG&E has not taken any actions to further
2 evaluate competitive market alternatives to the MMP such as acquisition of existing
3 generators or PPAs.

4 Finding No. 16 remains valid because, as discussed further in my testimony,
5 OG&E has not provided any new information that demonstrates that the existing Mustang
6 units were at the end of their useful lives and had to be retired.

7 Findings No. 18 and 19 also remain valid because they simply state the facts that
8 OG&E's decision to accelerate the retirement dates recommended in the 2012 Burns and
9 McDonnell analysis ("B&M Study") was based on the Company's claim that increased
10 cycling of the Mustang units associated with dispatch in the SPP IM will cause additional
11 "wear and tear" and create unreliable and unsafe conditions, and that OG&E had not
12 conducted any formal study to support these claims. As discussed later in my testimony,
13 the Company has still not provided any analysis to support these claims, and in fact, the
14 Mustang units did not incur any reliability problems or increased maintenance or capital
15 expenditures, and only a limited increase in cycling, as a result of changes in their
16 dispatch in the SPP IM.

17 Findings Nos. 20 and 21 remain valid since they simply state the facts that the
18 timing of retirements of the Mustang units was somewhat flexible, and that flexibility
19 allowed OG&E the opportunity to solicit market options that could delay the proposed
20 MMP schedule. Although OG&E ultimately proceeded with early retirement of the
21 Mustang units, the Company has not demonstrated that it did not have the flexibility to
22 delay those retirements.

1 As discussed further later in my testimony, Findings Nos. 25 and 26 remain valid
2 because SPP still has not assessed the need for CTs at the Mustang site or any other
3 specific location in OG&E's system, and OG&E has not conducted any formal analysis
4 or study to determine the need for voltage support at the Mustang site.

5 Finally, Finding No. 29 also remains valid since it simply states the fact that,
6 absent a competitive procurement process regarding the MMP, OG&E cannot
7 demonstrate that it evaluated all "reasonable alternatives", and the Company still has not
8 conducted a competitive solicitation process to assess market alternatives to the MMP.

9
10 **Q. PLEASE DESCRIBE THE NEW INFORMATION PROVIDED BY OG&E IN**
11 **THIS CASE TO ADDRESS DEFICIENCIES OF THE MMP IDENTIFIED BY**
12 **THE COMMISSION IN CAUSE NO. PUD 201400229?**

13 A. The Company has provided two new analyses to address the deficiencies cited by the
14 Commission in its denial of OG&E's request for pre-approval of the MMP in Cause No.
15 PUD 201400229. The first analysis is a new independent review of OG&E's 2014
16 decision to retire Mustang Units 1 through 4, which was conducted for the Company by
17 the engineering firm Black & Veatch ("B&V Study").⁵ The second new analysis is a
18 transmission study conducted by SPP at OG&E's request to address the potential
19 reliability and voltage control benefits that generation at the Mustang Plant provides to
20 customers in the Oklahoma City area ("SPP Study").⁶

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⁵ See direct testimony of Phillip Webster of B&V on behalf of OG&E.

⁶ See direct testimony of Lanny Nickell of SPP on behalf of OG&E.

B&V STUDY

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Q. DOES THE B&V STUDY INVALIDATE THE COMMISSION’S FINDING IN CAUSE NO PUD 201400229 THAT OG&E’S DECISION TO RETIRE THE MUSTANG UNITS EARLIER THAN ORGINALLY PLANNED WAS JUSTIFIED?

A. No. The B&V Study was limited in scope and did not include a detailed condition assessment of the Mustang Units or a comprehensive economic analysis of OG&E’s decision to retire the Mustang units earlier than previously planned. The conclusions in the B&V Study report are qualified based on the study limitations. For example, the economic analysis upon which B&V concluded that OG&E’s decision to retire the Mustang units was prudent, notes the following limitations:

The options considered in this analysis were selected to show potential alternatives. It was not meant to be an exhaustive analysis of options nor does it purport to represent an optimized approach. The intent was merely to demonstrate that retiring the existing units and replacing them with CTs was more cost effective option than performing the projects identified by Burns & McDonnell (B&M) on the existing units. The analysis supports the assertion that retirement of the units was a prudent decision.

Q. DO YOU AGREE WITH THE ABOVE ASSERTION THAT B&V’S ANALYSIS DEMONSTRATES THAT OG&E’S DECISION TO RETIRE THE MUSTANG UNITS EARLIER THAN PLANNED WAS PRUDENT?

A. No. B&V’s conclusion is based solely on an unrealistic scenario that assumes OG&E would spend nearly \$100 million to improve the Mustang units when the units only had a

1 short period of remaining life and were forecasted to operate at very low capacity factors
2 during these remaining years. In fact, B&V recognized that OG&E had implemented
3 none of the capital investments recommended by the 2012 B&M Study for Mustang
4 Units 1 and 2, and few of the recommended investments for Mustang Units 3 and 4 had
5 been implemented. The B&V Study offered the following explanation as to why OG&E
6 had generally not implemented any of the capital investments recommended by the B&M
7 Study⁷:

8 Considering the low net capacity factors expected during this period (driven by
9 the market pricing), avoiding the capital expenditures noted in Table 2-1 would
10 appear to have been a prudent decision. Recovery of those costs in that short time
11 frame with so little expected utilization would never have allowed for recovery of
12 the costs. The alternative, even in light of a potential failure would have been to
13 purchase energy in the Southwest Power Pool (SPP) at market prices. Actual
14 capacity factors experienced in this time period were 3 percent, 2 percent, and 5
15 percent for the 2012 to 2014 periods, respectively.

16
17 As such, B&V's conclusion that it was prudent for OG&E to retire the Mustang Units
18 was based on no condition assessment of the units, and a financial analysis of a limited
19 number of scenarios which were not optimized, and which compared the retirement
20 decision to an unrealistic alternate scenario including nearly \$100 million of assumed
21 capital additions that did not occur.

22
23 **Q. WERE THERE ANY OTHER SIGNIFICANT FLAWS WITH B&V'S**
24 **ANALYSIS?**

25 A. Yes. The B&V Study assumed that, because of joining SPP in 2014 (and the initiation of
26 the SPP IM), the Mustang Units would have experienced a high number of starts and

⁷ See page 2-2 of the B&V Study Report attached as Exhibit PLW-2 to the direct testimony of OG&E witness Webster.

1 therefore increased wear and equipment failures.⁸ As shown in Table 1 below, actual
 2 operating data for the Mustang Units does not confirm this assumption, and in fact shows
 3 that the Mustang Units had relatively few starts and relatively high reliability after
 4 operations in the SPP IM commenced in early 2014.

6 Table 1

7 Mustang Units 1, 2, 3 and 4 Annual Starts and Equivalent Availability

Year	Mustang 1		Mustang 2		Mustang 3		Mustang 4	
	Starts	EAF	Starts	EAF	Starts	EAF	Starts	EAF
2014	33	82.2%	41	79.8%	16	91.9%	24	76.9%
2015	27	95.2%	23	91.5%	22	97.8%	24	82.7%
2016					26	88.2%	40	92.6%
2017	-	-	-	-	<u>12</u>	<u>83.1%</u>	<u>10</u>	<u>79.8%</u>
Average	30	88.7%	32	85.7%	19	90.3%	25	83.0%

8 Source: OG&E's response to OIEC 4-14.

9

10 **Q. DID OG&E HAVE THE ABILITY TO LIMIT THE NUMBER OF STARTS AND**
 11 **CYCLING OF THE MUSTANG UNITS IN THE SPP IM?**

12 A. Yes. OG&E admits it also could have designated the Mustang Units as available for
 13 “Reliability Only” operations, which would have limited their operations while
 14 maintaining the units status for supplying system capacity reserve requirements;
 15 however, the Company chose not to do this.⁹ Therefore, even to the extent that increased
 16 cycling of the Mustang Units in the SPP IM may have become a legitimate operating
 17 concern (which does not appear to be the case), OG&E could take actions to mitigate

⁸ See page 2-6 of the B&V Study Report attached as Exhibit PLW-2 to the direct testimony of OG&E witness Webster.

⁹ See Exhibit SN-2, OG&E's response to OIEC 13-16.

1 those concerns and therefore prevent the high number of starts and cycling that B&V's
2 analysis assumed would result in unreliable operations. This alternative of continuing to
3 operate the Mustang Units until the dates specified in the 2012 B&M Study in a restricted
4 mode, and without extensive capital additions, was not evaluated by the B&V Study. If
5 OG&E had pursued this alternative, the lives of Mustang Units 3 and 4 could have been
6 extended until the Company evaluated competitive alternatives to the MMP, including
7 potential extension of the Oklahoma Cogen and AES contracts, which were scheduled to
8 expire in 2019 and 2023, respectively.

9
10 **Q. ARE OG&E'S CONCERNS REGARDING THE INCREASED RISK OF**
11 **CATASTROPHIC FAILURES AND EMPLOYEE INJURIES DUE TO AGING**
12 **OF THE MUSTANG UNITS SUPPORTED BY ANY FORMAL ANALYSIS OF**
13 **PAST OPERATIONS OF THE UNITS?**

14 A. No.¹⁰ In fact, historical operating data for the Mustang units and other OG&E
15 generating resources does not indicate a high incidence of catastrophic failures or
16 employee injuries due to forced outages. For example, since 2001 (the earliest date for
17 which the Company has maintained operating records) there has been only five incidents
18 that could be classified as catastrophic failures on OG&E's system, and none of those
19 incidents involved the Mustang units. Moreover, there were no reported injuries due to
20 forced outages of the Mustang units since 2000.¹¹ These historical operating records
21 undermine OG&E's unsupported claims that the Mustang units were unsafe and at high
22 risk of catastrophic failure.

¹⁰ See Exhibit SN-3, OG&E's response to OIEC 4-1.

¹¹ See Exhibit SN-4, OG&E's response to OIEC 4-18.

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**Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING OG&E'S
DECISION TO RETIRE MUSTANG UNITS 3 AND 4 EARLIER THAN
RECOMMENDED BY THE 2012 B&M STUDY?**

A. OG&E has not provided evidence that justifies the decision to retire Mustang Units 3 and 4 in 2017, years before the end of their service lives. The Commission has already determined that this decision was unjustified. The Company's unjustified decision to retire the Mustang units early shortened the time that otherwise would have been available for OG&E to evaluate other potentially lower cost alternatives, and significantly contributed to the rate increase proposed by OG&E in this case.

SPP STUDY

**Q. DOES THE SPP STUDY PRESENTED IN OG&E WITNESS NICKELL'S
DIRECT TESTIMONY DEMONSTRATE THAT THE MMP IS JUSTIFIED TO
ENSURE RELIABLE SERVICE TO CUSTOMERS IN THE OKLAHOMA CITY
AREA?**

A. No. As an initial matter, SPP administers the SPP energy markets and bulk transmission planning function, but has no authority (other than to review interconnection requests) over the electric utility siting, timing or planning decisions regarding major generation projects, such as the MMP. Given SPP's limited authority over projects such as the MMP, it is surprising that OG&E requested an SPP representative to file testimony in support of the MMP in this case. Nevertheless, the SPP Study is simply a transmission

1 study with limited scope that does not directly address the need for OG&E to locate
2 generation at the Mustang Site, or the economic or reliability advantages of the Mustang
3 Plant location over other potential sites. As such, this analysis has very limited value in
4 terms of demonstrating whether the MMP is required or represents the lowest reasonable
5 cost alternative for addressing reliability, voltage control or other operational issues.
6

7 **Q. DOES THE SPP STUDY QUANTIFY THE IMPACT OF THE MMP IN TERMS**
8 **OF REDUCING CUSTOMER OUTAGE TIME IN THE OKLAHOMA CITY**
9 **AREA?**

10 A. No. SPP indicates that it does not maintain customer outage information¹²; however, any
11 benefit in terms of reduced outage time to customers provided by the MMP (or other
12 generating resource options) would likely be extremely small. In fact, OG&E admits
13 that it has experienced no customer outages on its entire system over the last 18 years due
14 to generator supply outage events, so it is not clear how the MMP would improve service
15 to customers in the Oklahoma City area.¹³
16

17 **Q. DO YOU HAVE OTHER CONCERNS REGARDING THE SPP STUDY?**

18 A. Yes. I requested that SPP provide data for transmission outages that were assumed to
19 occur in their analysis of potential reliability problems in the Oklahoma City area, along
20 with actual outage hours for those lines that have been experienced in the past, to assess
21 the magnitude of the alleged reliability problems and the reasonableness of the study
22 assumptions and results. I assumed that this information would be summarized in the

¹² See Exhibit SN-5, OG&E's response to OIEC 13-8.

¹³ See Exhibit SN-6, OG&E's response to OIEC 4-4.

1 SPP Study Report; however, it was not included in the Report and the Company did not
2 provide these assumptions in response to discovery. In light of the Company's failure to
3 readily provide information on these critical assumptions, I have little confidence in the
4 study results or the basic premise that there is a reliability problem in the Oklahoma City
5 area that must be fixed by the MMP.

6
7 **OTHER DEFICIENCIES IN OG&E'S MMP ANALYSIS**

8
9 **Q. HAS OG&E PROVIDED NEW INFORMATION TO RESPOND TO OTHER**
10 **DEFICIENCIES WITH ITS MMP ANALYSIS IDENTIFIED IN THE**
11 **COMMISSION'S ORDER IN CAUSE NO. PUD 201400229?**

12 A. No. There is no apparent reason why OG&E could not have delayed the retirement of the
13 Mustang units a few years to allow time to conduct competitive bidding and additional
14 IRP analyses to address the numerous deficiencies noted by the Commission in rejecting
15 the Company's request for approval of the MMP in Cause No. PUD 201400229. OG&E
16 could have compiled actual transmission outage statistics to demonstrate the magnitude
17 of the claimed reliability problems in the Oklahoma City area, and to quantify the direct
18 benefits of new generation at the Mustang Plant when compared to other potential sites.
19 The Company also could have evaluated potential transmission solutions to the reliability
20 concerns in the Oklahoma City area, and it could have evaluated the level of available
21 excess capacity in the SPP as a potential short-term alternative to the MMP. However,
22 rather than take the time to explore alternatives to the MMP, the Company instead

1 proceeded with the MMP and offered essentially the same analysis and evidence which
2 the Commission previously found to be inadequate to support the MMP project.

3
4 **Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATION**
5 **REGARDING OG&E'S REQUEST FOR APPROVAL OF THE MMP?**

6 A. OG&E has again failed to demonstrate that the MMP was needed, the lowest reasonable
7 cost option, or required to support renewable generation or to ensure reliability in the
8 Oklahoma City area. The Commission has traditionally applied the “lowest reasonable
9 cost” standard as a primary factor in deciding the prudence of major utility investments,
10 such as the MMP. After the Commission’s denial of OG&E’s application for pre-
11 approval of the MMP in Cause No. PUD 201400229, at minimum, OG&E should have
12 known that the need to further address alternatives to the project through competitive
13 bidding or other means would be heavily considered in the final evaluation of
14 reasonableness of the proposed MMP. As recognized in Finding of Fact 29, on page 21
15 of the Commission’s Final Order in Cause No. PUD 201400229:

16 29. Absent a competitive procurement process regarding the MMP, OG&E
17 cannot demonstrate that it evaluated all “reasonable alternatives”.

18
19 Due to OG&E’s failure to conduct bidding or otherwise expand its analysis of
20 alternatives to the MMP, along with the Company’s failure to address other key
21 deficiencies in its decision-making process for the MMP previously identified by the
22 Commission, I recommend that the Commission disallow the recovery of a return
23 (“profit”) on the revenue requirement requested by OG&E for the MMP project. OIEC
24 witness Mark Garrett presents the recommended ratemaking adjustment to the
25 Company’s request for cost recovery of the MMP in his Responsive Testimony.

1
2 **IV. MISCELLANEOUS TRANSMISSION O&M EXPENSE**

3
4 **Q. WHAT AMOUNT OF TRANSMISSION O&M EXPENSE DID OG&E INCUR**
5 **DURING THE TEST YEAR?**

6 A. OG&E's test year transmission O&M expense totaled \$187.7 million.

7
8 **Q. HOW DOES THE LEVEL OF OG&E'S TEST YEAR TRANSMISSION O&M**
9 **EXPENSE COMPARE TO EXPENDITURES DURING THE LAST SEVERAL**
10 **YEARS?**

11 A. As summarized in Table 3 below, the level of OG&E's test year transmission O&M
12 expense is approximately 40.6% higher than the average level of transmission expense
13 incurred over the previous four calendar years, and is approximately \$19.5 million higher
14 than the transmission expense level incurred in 2016.

15
16 Table 3

17 **OG&E Transmission O&M Expense**

		<u>Growth</u>
2013	\$109,160,394	
2014	\$122,724,864	12.4%
2015	\$133,785,703	9.0%
2016	<u>\$168,202,072</u>	<u>25.7%</u>
2013-16 Avg	\$133,468,258	15.7%
Test Year	\$187,720,432	40.6%

18 Source: OG&E's response to OIEC 8-4.

1 **Q. WHY IS OG&E’S TRANSMISSION O&M EXPENSE INCREASING AT SUCH**
 2 **RAPID RATES?**

3 A. OG&E’s testimony does not address the reasons for the increase in test year transmission
 4 O&M expense. However, it is apparent that most of the increase is due to transmission
 5 charges in FERC Account 566, Miscellaneous Transmission Expenses. According to the
 6 FERC Uniform System of Accounts, Account 566 may include a relatively wide
 7 spectrum of miscellaneous charges, including “the cost of labor, materials used and
 8 expenses incurred in transmission map and record work, transmission office expenses,
 9 and other transmission expenses not provided for elsewhere.”¹⁴ OG&E also apparently
 10 includes charges billed to OG&E under the SPP’s open access transmission tariff for the
 11 Company’s share of O&M related to certain high voltage transmission facilities owned
 12 by other parties in SPP in this account. As summarized in Table 4, the miscellaneous
 13 transmission expense in FERC Account 566 accounted for over 82% of OG&E’s total
 14 transmission O&M charges during the test year.

16 Table 4

17 OG&E Miscellaneous Transmission Expense

	<u>Acct 566</u>	<u>Total</u>	<u>% of Total</u>
2013	\$74,093,676	\$109,160,394	67.9%
2014	\$89,176,901	\$122,724,864	72.7%
2015	\$102,196,166	\$133,785,703	76.4%
2016	\$136,207,870	\$168,202,072	81.0%
Test Year	\$154,441,561	\$187,720,432	82.3%

18 Source: OG&E's response to OIEC 8-4.

¹⁴ See Exhibit SN-7.

1 **Q. DO SPP THIRD PARTY TRANSMISSION CHARGES MAKE UP ALL THE**
2 **MISCELLANEOUS EXPENSES OG&E INCLUDED IN FERC ACCOUNT 566?**

3 A. Apparently not. OG&E has recommended a pro-forma adjustment of approximately \$74
4 million to FERC Account 566 transmission charges to account for revenues that OG&E
5 collected for reimbursement of third party SPP transmission charges, which it collects
6 through its SPPCT Rider.¹⁵ This adjustment accounts for less than 50% of the total test
7 year charges to FERC Account 566. Again, OG&E’s testimony does not address the
8 nature or reasonableness of the remaining \$80 million of Miscellaneous Transmission
9 Expenses included in FERC Account 566 during the test year, which the Company
10 proposes to recover through its new base rates.

11
12 **Q. WHAT IS YOUR RECOMMENDATION REGARDING OG&E’S**
13 **MISCELLANEOUS TRANSMISSION O&M EXPENSE REQUEST IN THIS**
14 **CASE?**

15 A. Due to OG&E’s failure to address the nature or reasonableness of miscellaneous
16 transmission expense its testimony, I recommend that the level of transmission O&M
17 expense requested by the Company be reduced by \$18.2 million (Total Company), which
18 represents the unexplained increase in FERC Account 566 charges from 2016 to the test
19 year, as presented above in my Table 3.

20
21 **Q. DOES THIS CONCLUDE YOUR RESPONSIVE TESTIMONY?**

22 A. Yes.

¹⁵ See Exhibit SN-8, OG&E Workpaper H-2.30.

EXHIBIT SN-1

RESUME OF DON SCOTT NORWOOD

Norwood Energy Consulting, L.L.C.

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(512) 297-1889

SUMMARY

Scott Norwood is an energy consultant with over 35 years of utility industry experience in the areas of regulatory consulting, resource planning and energy procurement. His clients include government agencies, publicly-owned utilities, public service commissions, municipalities and various electric consumer interests. Over the last 15 years Mr. Norwood has presented expert testimony on electric utility ratemaking, resource planning, and electric utility restructuring issues in over 200 regulatory proceedings in Arkansas, Georgia, Iowa, Illinois, Michigan, Missouri, New Jersey, Oklahoma, South Dakota, Texas, Virginia, Washington and Wisconsin.

Prior to founding Norwood Energy Consulting in January of 2004, Mr. Norwood was employed for 18 years by GDS Associates, Inc., a Marietta, Georgia based energy consulting firm. Mr. Norwood was a Principal of GDS and directed the firm's Deregulated Services Department which provided a range of consulting services including merchant plant due diligence studies, deregulated market price forecasts, power supply planning and procurement projects, electric restructuring policy analyses, and studies of power plant dispatch and production costs.

Before joining GDS, Mr. Norwood was employed by the Public Utility Commission of Texas as Manager of Power Plant Engineering from 1984 through 1986. He began his career in 1980 as Staff Electrical Engineer with the City of Austin's Electric Utility Department where he was in charge of electrical maintenance and design projects at three gas-fired power plants.

Mr. Norwood is a graduate of the college of electrical engineering of the University of Texas.

EXPERIENCE

The following summaries are representative of the range of projects conducted by Mr. Norwood over his 30-year consulting career.

Regulatory Consulting

Oklahoma Industrial Energy Consumers - Assisted client with technical and economic analysis of proposed EPA regulations and compliance plans involving control of air emissions and potential conversion of coal-to-gas conversion options.

Cities Served by Southwestern Electric Power Company – Analyzed and presented testimony regarding the prudence of a \$1.7 billion coal-fired power plant and related settlement agreements with Sierra Club.

New York Public Service Commission - Conducted inter-company statistical benchmarking analysis of Consolidated Edison Company to provide the New York Public Service Commission with guidance in determining areas that should be reviewed in detailed management audit of the company.

Oklahoma Industrial Energy Consumers - Analyzed and presented testimony on affiliate energy trading transactions by AEP in ERCOT.

Virginia Attorney General – Analyzed and presented testimony regarding distribution tap line undergrounding program proposed by Dominion Virginia Power Company.

Cities Served by Southwestern Electric Power Company – Analyzed and presented testimony regarding the prudence of the utility’s decision to retire the Welsh Unit 2 coal-fired generating unit in conjunction with a litigation settlement agreement with Sierra Club.

Georgia Public Service Commission - Presented testimony before the Georgia Public Service Commission in Docket 3840-U, providing recommendations on nuclear O&M levels for Hatch and Vogtle and recommending that a nuclear performance standard be implemented in the State of Georgia.

Oklahoma Industrial Energy Consumers - Analyzed and presented testimony addressing power production and coal plant dispatch issues in fuel prudence cases involving Oklahoma Gas and Electric Company.

Georgia Public Service Commission - Analyzed and provided recommendations regarding the reasonableness of nuclear O&M costs, fossil O&M costs and coal inventory levels reported in GPC's 1990 Surveillance Filing.

City of Houston - Analyzed and presented comments on various legislative proposals impacting retail electric and gas utility operations and rates in Texas.

New York Public Service Commission - Conducted inter-company statistical benchmarking analysis of Rochester Gas & Electric Company to provide the New York Public Service Commission with guidance in determining areas which should be reviewed in detailed management audit of the company.

Virginia Attorney General – Analyzed and presented testimony regarding an accelerated vegetation management program and rider proposed by Appalachian Power Company.

Oklahoma Attorney General – Analyzed and presented testimony regarding fuel and purchased power, depreciation and other expense items in Oklahoma Gas & Electric Company’s 2001 rate case before the Oklahoma Corporation Commission.

City of Houston - Analyzed and presented testimony regarding fossil plant O&M expense levels in Houston Lighting & Power Company's rate case before the Public Utility Commission of Texas.

City of El Paso - Analyzed and presented testimony regarding regulatory and technical issues related to the Central & Southwest/El Paso Electric Company merger and rate proceedings before the PUCT, including analysis of merger synergy studies, fossil O&M and purchased power margins.

Residential Ratepayer Consortium - Analyzed Fermi 2 replacement power and operating performance issues in fuel reconciliation proceedings for Detroit Edison Company before the Michigan Public Service Commission.

Residential Ratepayer Consortium - Analyzed and prepared testimony addressing coal plant outage rate projections in the Consumer's Power Company fuel proceeding before the Michigan Public Service Commission.

City of El Paso - Analyzed and developed testimony regarding Palo Verde operations and maintenance expenses in El Paso Electric Company's 1991 rate case before the Public Utility Commission of Texas.

City of Houston - Analyzed and developed testimony regarding the operations and maintenance expenses and performance standards for the South Texas Nuclear Project, and operations and maintenance expenses for the Limestone and Parish coal-fired power plants in HL&P's 1991 rate case before the PUCT.

City of El Paso - Analyzed and developed testimony regarding Palo Verde operations and maintenance expenses in El Paso Electric Company's 1990 rate case before the Public Utility Commission of Texas. Recommendations were adopted.

Energy Planning and Procurement Services

Virginia Attorney General – Review and provide comments or testimony regarding annual integrated resource plan filings made by Dominion Virginia Power and Appalachian Power Company.

Dell Computer Corporation – Negotiated retail power supply agreement for Dell's Round Rock, Texas facilities producing annual savings in excess of \$2 million.

Texas Association of School Boards Electric Aggregation Program – Serve as TASB's consultant in the development, marketing and administration of a retail electric aggregation program consisting of 2,500 Texas schools with a total load of over 300 MW. Program produced annual savings of more than \$30 million in its first year.

Oklahoma Industrial Energy Consumers - Analyzed and drafted comments addressing integrated resource plan filings by Public Service Company of Oklahoma and Oklahoma Gas and Electric Company.

S.C. Johnson - Analyzed and presented testimony addressing Wisconsin Electric Power Company's \$4.1 billion CPCN application to construct three coal-fired generating units in southeast Wisconsin.

Oklahoma Industrial Energy Consumers - Analyzed wind energy project ownership proposals by Oklahoma Gas and Electric Company and presented testimony addressing project economics and operational impacts.

City of Chicago, Illinois Attorney General, Illinois Citizens' Utility Board - Analyzed Commonwealth Edison's proposed divestiture of the Kincaid and State Line power plants to SEI and Dominion Resources.

Georgia Public Service Commission - Analyzed and presented testimony on Georgia Power Company's integrated resource plan in a certification proceeding for an eight unit, 640 MW combustion turbine facility.

South Dakota Public Service Commission - Evaluated integrated resource plan and power plant certification filing of Black Hills Power & Light Company.

Shell Leasing Co. - Evaluated market value of 540 MW western coal-fired power plant.

Community Energy Electric Aggregation Program – Served as Community Energy's consultant in the development, marketing and start-up of a retail electric aggregation program consisting of major charitable organizations and their donors in Texas.

Austin Energy – Conducted competitive solicitation for peaking capacity. Developed request for proposal, administered solicitation and evaluated bids.

Austin Energy - Provided technical assistance in the evaluation of the economic viability of the City of Austin's ownership interest in the South Texas Project.

Austin Energy - Assisted with regional production cost modeling analysis to assess production cost savings associated with various public power merger and power pool alternatives.

Sam Rayburn G&T Electric Cooperative - Conducted competitive solicitation for peaking capacity. Developed request for proposal, administered solicitation and evaluated bids.

Rio Grande Electric Cooperative, Inc. - Directed preparation of power supply solicitation and conducted economic and technical analysis of offers.

Virginia Attorney General – Review and provide comments or testimony regarding annual demand-side management program programs and rider proposals made by Dominion Virginia Power and Appalachian Power Company.

Austin Energy – Conducted modeling to assess potential costs and benefits of a municipal power pool in Texas.

Electric Restructuring Analyses

Electric Power Research Institute - Evaluated regional resource planning and power market dispatch impacts on rail transportation and coal supply procurement strategies and costs.

Arkansas House of Representatives – Critiqued proposed electric restructuring legislation and identified suggested amendments to provide increased protections for small consumers.

Virginia Legislative Committee on Electric Utility Restructuring – Presented report on status of stranded cost recovery for Virginia’s electric utilities.

Georgia Public Service Commission – Developed models and a modeling process for preparing initial estimates of stranded costs for major electric utilities serving the state of Georgia.

City of Houston – Evaluated and recommended adjustments to Reliant Energy’s stranded cost proposal before the Public Utility Commission of Texas.

Oklahoma Attorney General – Evaluated and advised the Attorney General on technical, economic and regulatory policy issues arising from various electric restructuring proposals considered by the Oklahoma Electric Restructuring Advisory Committee.

State of Hawaii Department of Business, Economics and Tourism – Evaluated electric restructuring proposals and developed models to assess the potential savings from deregulation of the Oahu power market.

Virginia Attorney General - Served as the Attorney General’s consultant and expert witness in the evaluation of electric restructuring legislation, restructuring rulemakings and utility proposals addressing retail pilot programs, stranded costs, rate unbundling, functional separation plans, and competitive metering.

Western Public Power Producers, Inc. - Evaluated operational, cost and regional competitive impacts of the proposed merger of Southwestern Public Service Company and Public Service Company of Colorado.

Iowa Department of Justice, Consumer Advocate Division - Analyzed stranded investment and fuel recover issues resulting from a market-based pricing proposal submitted by MidAmerican Energy Company.

Cullen Weston Pines & Bach/Citizens’ Utility Board - Evaluated estimated costs and benefits of the proposed merger of Wisconsin Energy Corporation and Northern States Power Company (Primergy).

City of El Paso - Evaluated merger synergies and plant valuation issues related to the proposed acquisition and merger of El Paso Electric Company and Central & Southwest Company.

Rio Grande Electric Cooperative, Inc. - Analyzed stranded generation investment issues for Central Power & Light Company.

Power Plant Management

City of Austin Electric Utility Department - Analyzed the 1994 Operating Budget for the South Texas Nuclear Project (STNP) and assisted in the development of long-term performance and expense projections and divestiture strategies for Austin's ownership interest in the STNP.

City of Austin Electric Utility Department - Analyzed and provided recommendations regarding the 1991 capital and O&M budgets for the South Texas Nuclear Project.

Sam Rayburn G&T Electric Cooperative - Developed and conducted operational monitoring program relative to minority owner's interest in Nelson 6 Coal Station operated by Gulf States Utilities.

KAMO Electric Cooperative, City of Brownsville and Oklahoma Municipal Power Agency - Directed an operational audit of the Oklaunion coal-fired power plant.

Sam Rayburn G&T Electric Cooperative - Conducted a management/technical assessment of the Big Cajun II coal-fired power plant in conjunction with ownership feasibility studies for the project.

Kamo Electric Power Cooperative - Developed and conducted operational monitoring program for client's minority interest in GRDA Unit 2 Coal Fired Station.

Northeast Texas Electric Cooperative - Developed and conducted operational monitoring program concerning NTEC's interest in Pirkey Coal Station operated by Southwestern Electric Power Company and Dolet Hills Station operated by Central Louisiana Electric Company.

Corn Belt Electric Cooperative/Central Iowa Power Cooperative - Perform operational monitoring and budget analysis on behalf of co-owners of the Duane Arnold Energy Center.

PRESENTATIONS

Quantifying Impacts of Electric Restructuring: Dynamic Analysis of Power Markets, 1997 NARUC Winter Meetings, Committee on Finance and Technology.

Quantifying Costs and Benefits of Electric Utility Deregulation: Dynamic Analysis of Regional Power Markets, International Association for Energy Economics, 1996 Annual North American Conference.

Railroad Rates and Utility Dispatch Case Studies, 1996 EPRI Fuel Supply Seminar.

EXHIBIT SN-2

Oklahoma Industrial Energy Consumers
Data Request OIEC-13
Cause No. PUD 201700496

13-16 Reference page 11 of Robert Burch’s direct testimony, explain whether OG&E had the ability to limit the number of starts of Mustang Units 3 and 4 in the SPP IM through bidding practices, designation of such units for emergency service only, or through other means and if so, whether these alternatives to retirement of the units were considered.

Response*: There are several different offer parameters that can be utilized to control the number of starts on a generation resource. Typically, the start specific offer parameters are utilized to limit the number of starts per day and per week, but the runtime and downtime parameters are often utilized in conjunction. Additionally, a generation resource can be placed in a “Reliability Only” commitment status that the SPP IM will utilize only during an SPP determined reliability event. OG&E does occasionally utilize this offer parameter to reflect the actual availability of a generation resource, but are typically only for short period of time leading up to an outage. It is OG&E’s intent to reflect the actual availability of a generation resource and if there are issues with a generation resource that cause operational concerns, the generation resource is placed in an outage status to prevent it from operating. Placing the units on a reliability only commitment as an alternative to retiring the units was not considered.

Response provided by:	<u>Leon Howell</u>
Response provided on:	<u>April 6, 2018</u>
Contact & Phone No:	<u>Jason Bailey</u> <u>405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

EXHIBIT SN-3

Oklahoma Industrial Energy Consumers of Oklahoma
Data Request OIEC-4
Cause No. PUD 201700496

4-1 Reference page 7, lines 17-18 of the direct testimony of OG&E witness Rowlett, provide any analysis conducted by the Company prior to the decision to construct the new Mustang CTs that supports the testimony that the existing Mustang units were at the end of their practical lives.

Response*: No formal, written life assessment or operational analysis was performed. OG&E's technical, operational, resource planning and environmental teams had a number of internal conversations centered around topics such as:

- The units' ability to be competitive in the SPP market based on their efficiency and operational constraints such as startup time and ramp rate.
- Investment levels approaching \$60 Million for units 3 and 4, to reach 65 years of operation which did not make sense given the expected low utilization rate and relatively short remaining service life, even if the investment were made
- The fact that even if significant investment were made, another area of the plant not included in the proposed investment plan could experience a failure that would cause an immediate retirement of one or more units, rendering the \$60 Million at even less value.
- The risks to personnel and equipment associated with operating units that were well beyond, and approaching twice, their design life as well as operating outside their design operating profile.
- The ability to optimize the time sensitive permitting process through the use of netting to maximize the amount of replacement generation that could be installed.
- The fact that re-using the Mustang site would deliver savings over constructing new generation at a Greenfield site
- The benefits associated with re-using a site with nine transmission lines on two voltages that is critical to maintaining grid stability and voltage control in certain scenarios.
- The ability to install newer quick start technology that is capable of providing support to the variability of renewable generation, specifically wind generation.
- The ability to install units that are capable of multiple modes of operation, providing customers with multiple potential value streams.

Based on these internal conversations and 112 years of proven operating experience, OG&E made the consensus decision to retire the existing Mustang units and replace them with new quick start combustion turbines. OG&E did not need to incur significant customer costs to commission outside studies to arrive at the same conclusions arrived at by its internal experts.

Response provided by:	<u>Robert Burch</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey 405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

EXHIBIT SN-4

EXHIBIT SN-5

Oklahoma Industrial Energy Consumers
Data Request OIEC-13
Cause No. PUD 201700496

13-8 Reference page 6 of Leon Howell's direct testimony, describe the specific transmission outages and wind generation levels assumed by the referenced SPP Study under which the Oklahoma City area could experience overloads and voltage collapse and provide the date, the total outage time and total customer outage hours associated with each such event that has affected the Oklahoma City area since 2010.

Response*: SPP does not maintain customer outage information. Sections 4.1 through 4.3 of the Variable Generation Integration Study describes the model development process used for the study. Section 7.3 of the Variable Generation Integration Study provides an overview of the voltage stability analysis performed in the study, and compares the traditional planning N-0 system intact cases against the operational N-X models that include real-time planned transmission outages from a historical peak wind penetration operating day. The Variable Generation Integration Study was not a post analysis study that assessed customer power outages, rather the study was designed to stress the transmission system to find reliability limits that allow SPP to proactively take measures before reaching critical limits to prevent load loss.

Response provided by:	<u>Lanny Nickell</u>
Response provided on:	<u>April 6, 2018</u>
Contact & Phone No:	<u>Jason Bailey 405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

EXHIBIT SN-6

Oklahoma Industrial Energy Consumers
Data Request OIEC-4
Cause No. PUD 201700496

4-4 Provide total OG&E customer outage hours attributable to generation supply outage events for each year since 2000.

Response*: OG&E had no customer outage hours attributable to generation supply outage events from 2000 to the present. However, during the 2010-2012 heat waves, in order to maintain sufficient operating reserves, OG&E called for voluntary curtailments on 37 separate occasions. Also during that time frame, OG&E was forced to declare Energy Emergency Alert 3 (EEA3) conditions twice. At that time, an EEA3 was required when a Balancing Authority believed "firm load interruption imminent or in progress."

Response provided by:	<u>Robert Burch</u>
Response provided on:	<u>March 22, 2018</u>
Contact & Phone No:	<u>Jason Bailey 405-553-3406</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.

EXHIBIT SN-7

566 Miscellaneous transmission expenses (Major only).

This account shall include the cost of labor, materials used and expenses incurred in transmission map and record work, transmission office expenses, and other transmission expenses not provided for elsewhere.

Items

Labor:

1. General records of physical characteristics of lines and stations, such as capacities, etc.
2. Ground resistance records.
3. Janitor work at transmission office buildings, including care of grounds, snow removal, cutting grass, etc.
4. Joint pole maps and records.
5. Line load and voltage records.
6. Preparing maps and prints.
7. General clerical and stenographic work.
8. Miscellaneous labor.

Materials and Expenses:

9. Communication service.
10. Building service supplies.
11. Map and record supplies.
12. Transmission office supplies and expenses, printing and stationery.
13. First-aid supplies.
14. Research, development, and demonstration expenses.

Source: <https://www.ecfr.gov>.

3527220.1:620435:02636

EXHIBIT SN-8

OKLAHOMA GAS AND ELECTRIC COMPANY
PRO FORMA ADJUSTMENT - OPERATING EXPENSE
SPP TRANSMISSION EXPENSES RECOVERED FROM OTHER LSEs
TEST YEAR ENDING 9/30/17
CAUSE NO. PUD 201700466

Line No.	Formula Rate ATRR Component	Transmission		Pro Forma		Formula Ref. Line #
		Amount	Allocation %	Amount	FERC Acc'l	
1	Total Transmission O&M Expense	17,172,429	42.460%	(7,251,413)	561	75
2	A & G Expense	13,573,110	42.460%	(5,755,147)	225	50
3	Depreciation Expense (In-Service only)	29,670,465	83.540%	(23,551,373)	403	WPH 2-30-a
4	Total Taxes Other Than Income	18,171,450	42.460%	(7,715,610)	408.1	108
5	Pro Forma Adjustment	\$ 77,587,504		\$ 144,724,489		

Reconciliation Calculations for Base Plan Upgrade Pro Forma Adjustments

OG&E Base Plan Upgrade Revenue Requirement from Others	115,382,913
Total Net Annual Transmission Revenue Requirement (ATRRA)*	271,766,913
Percentage of OG&E Base Plan Upgrades Charged to Others	42.460%
OG&E Base Plan Upgrade Revenue Requirement from Others	115,382,913
Total Net ATRR for Base Plan Projects	136,121,903
Percentage of OG&E Base Plan Upgrades Charged to Others	83.540%

* Source: FERC Transmission - Formula Rate True-Up Adjustment for 2016 Rate Year - "2016 OG&E Baseline ATRR True-Up"

PURPOSE:
 To remove expenses recovered from other Load Serving Entities (LSE) for OG&E's base plan upgrades. These expenses are based on the Company's FERC Formula Rates for Transmission Service.

Section H - Operating Income
W/P H-2-31

OKLAHOMA GAS AND ELECTRIC COMPANY
PRO FORMA ADJUSTMENT - OPERATING INCOME
SPPCT RIDER EXPENSE
TEST YEAR ENDING 9/30/17
CAUSE NO. PUD 201700496

<u>Line No.</u>	<u>Description</u>	<u>FERC Account</u>	<u>Amount</u>
1	Southwest Power Pool Schedule 11 Base Plan Fees Paid to Others - Recovered through the SPPCT Rider	566	73,616,064
2	SPP costs direct assigned to other customers	565	571,776
3	Pro Forma Adjustment - Total Company		<u>\$ (74,187,840)</u>

PURPOSE:

To remove SPP Fees recovered through the SPPCT Rider and directly billed to other customers.