BEFORE THE
CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF **OKLAHOMA GAS AND ELECTRIC COMPANY** FOR AN ORDER OF THE COMMISSION GRANTING PRE-APPROVAL TO CONSTRUCT A TRANSMISSION LINE, AUTHORIING A RECOVERY RIDER AND APPROVING OTHER ASSOCIATED TARIFFS IN REGARD TO ITS RENEWABLE PLAN	)	CAUSE NO. PUD 200800148

Direct Testimony

of

Philip L. Crissup

On behalf of

Oklahoma Gas & Electric Company

May 19, 2008

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

A. My name is Philip L. Crissup. I am employed by Oklahoma Gas and Electric Company (OG&E or Company) and my business address is 321 N. Harvey, P.O. Box 321, Oklahoma City, Oklahoma 73101.

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

A. I hold the position of Director, Regional Transmission Affairs.

Q. **Please state your educational qualifications and employment history.**

A. I received a Bachelor of Science Degree in Electrical Engineering from the University of Oklahoma in 1983. Upon graduation, I began my career at OG&E at the Northern Region engineering office in Enid, Oklahoma, as distribution Engineer. I was promoted to Design Engineer in the Transmission Design section of Corporate Engineering in 1987, and then to Senior Engineer in the same department in 1994. I moved to the Engineering Planning section in 1997 and in 2002 became the Manager of the Transmission Planning Group. In 2006, I became Director of Regional Transmission Affairs. I am a Licensed Professional Engineer in the state of Oklahoma and my Certificate Number is 15521.

Q. **Have you previously testified before the Oklahoma Corporation Commission?**

A. Yes.

Q. **What is the purpose of your testimony in this proceeding?**

A. The purpose of my testimony is to describe OG&E's efforts to construct, own and operate a 345 kV transmission line from OG&E's substation, located near Woodward, Oklahoma to our Northwest Substation, located in northwest Oklahoma City. Specifically, my testimony provides an overview of the historic development of transmission infrastructure in western Oklahoma; describes OG&E's proposed 345 kV transmission line and explains the need for and the benefits of such a transmission line; and discusses the projected costs to construct the line and OG&E's proposed cap on construction costs.

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

A. My testimony is organized into three sections as follows:

Section 1: Overview of Transmission Development in western Oklahoma;

Section 2: Description of the Proposed 345 kV Line and the Need and Benefits;

Section 3: Construction Costs, Proposed Construction Cost Cap and Revenue Requirement.

Section 1: Overview of Transmission Development in western Oklahoma

Q. **Please describe the development of OG&E's transmission system in western Oklahoma.**

A. Historically, and not just in western Oklahoma, transmission systems have been engineered and constructed to move, at high voltage, electric energy from power plants to load centers. This is true in OG&E's case as a general rule and specifically in terms of

western Oklahoma. The western Oklahoma transmission system developed for two distinct purposes. First, OG&E has two small generating facilities in western Oklahoma, a 44 megawatt generating facility located at Enid and a 10 megawatt generating facility located at Woodward. The transmission system in western Oklahoma was designed to interconnect these power plants with the OG&E system.

Q. **What is the second purpose of the transmission system in western Oklahoma?**

A. The second overall purpose of the transmission system in western Oklahoma is to transfer electric energy from other OG&E generating facilities to OG&E customers in western Oklahoma. Because OG&E economically dispatches its generation and does not serve specific load from specific generating facilities, the power needs for the western part of OG&E's system come from OG&E's total fleet of generation and transmission assets.

Q. **What level of load does OG&E serve in western Oklahoma?**

A. The Company has, in relative terms, a very small portion of its total load located in western Oklahoma. In fact, of the approximately 6,000 MW of total load on the OG&E system, OG&E has only approximately 150 MW of load in the Northwestern portion of the state. This area, historically and today, has experienced little growth in demand or usage compared with the remainder of OG&E's system.

Q. **What is the current status of transmission in western Oklahoma?**

A. The current 138 kV transmission system in western Oklahoma meets OG&E's need to connect the Enid and Woodward facilities to the OG&E transmission grid and deliver

electric energy to our western Oklahoma load, but there is very little excess capability. The system was developed by small, incremental upgrades to the 138 kV system over the last sixty years. However, because of that incremental upgrading approach, any meaningful new generation project will require upgrades in order to obtain firm transmission service. Multiple new wind farms cannot effectively utilize the transmission system in western Oklahoma without significant and historically unprecedented improvements for the transmission grid in that part of the state.

Section 2: Description of the Proposed 345 kV Transmission Line And the Need and Benefits

Q. **What is the Company proposing in this proceeding regarding additional transmission infrastructure?**

A. The Company is proposing to design, construct, own and operate a new 345 kV high voltage transmission line from its substation located near Woodward, Oklahoma to its Northwest Substation located in northwest Oklahoma City.

Q. **Please describe the characteristics of the proposed line.**

A. The proposed transmission line is being designed to and will operate at 345 kV. The line will be approximately 120 miles long and will be constructed along 180 foot rights-of-way. The line will be built on single steel poles mounted on steel reinforced concrete foundations as a single circuit configuration with the potential for an additional circuit on separate structures in the future if necessary. Initially, the line will have a thermal rating of 1800 MW.

Q. **Why construct a 345 kV line instead of a 138 kV line?**

A. There are at least two reasons. First, the existing 138kV transmission system in the northwestern portion Oklahoma has effectively reached its maximum loading, and cannot accommodate significant additions of wind generation without major upgrades. Secondly, as other 345kV additions to the transmission system are made in northwestern Oklahoma, the incremental improvements to the 138kV system would be unnecessary, and would needlessly add to the time and expense of adding new wind generation. As I will discuss in more detail later, construction of a 345 kV line is more efficient, both economically and in time, than incremental improvements in the 138 kV system if we're going to reap the benefits of large quantities of wind energy resources in western Oklahoma.

Q. **Have others identified the need for a new transmission line in western Oklahoma?**

A. A recent study by the United States Department of Energy ("DOE") estimates there will be more than 10 gigawatts (or 10,000 megawatts) of wind generation installed in Oklahoma by the year 2030, and that "[i]f the considerable wind resources of the United States are to be utilized, a significant amount of new transmission will be required". The study also recognizes the 'chicken or the egg' issue OG&E is addressing by moving forward with the 345kV line. The study states "...generation companies are reluctant to commit to a new generation project unless it is clear that transmission will be available, but transmission developers are equally reluctant to step forward until generator interconnection requests have been filed (the 'chicken or the egg' conundrum)".

At the present time, there are at least thirty seven (37) Generation Interconnection requests in Oklahoma that are in various stages of study by the Southwest Power Pool, Inc. ("SPP") These requests amount to over ten (10) gigawatts (or 10,000 megawatts) of wind generation capacity in Oklahoma alone. Few, if any, of these requests will become viable projects unless major upgrades such as that proposed by OG&E are initiated.

The Oklahoma Legislature recently passed a bill to encourage new transmission infrastructure to spur wind development in western Oklahoma.

In the spring of 2008, the SPP conducted a study of the transmission system in western Oklahoma, specifically as it relates to the potential for wind development in the area.

Q. **Please describe in more detail the SPP study you mentioned.**

A. In 2007, the Oklahoma Legislature formed the Oklahoma Electric Power Transmission Task Force ("OEPTTF"). In the same bill, the legislature requested a study to be performed in 2008 to evaluate the need for new electric transmission lines necessary to promote the development of significant new wind resources within the state. The OEPTTF contracted the SPP to perform the study. As the Commission knows, the SPP is the Regional Transmission Organization for a seven state area, of which Oklahoma is a part and is designated by the FERC to determine the need for electric power transmission expansion for the seven state area. When it considered the OEPTTF request in conjunction with the volume of pending requests for Interconnection studies from wind developers, the SPP agreed a study was timely. The SPP study performed for the OEPTTF included, among other things, the 345 kV transmission line proposed by OG&E from Woodward to Oklahoma City. This line would be the first piece of the additions to

the SPP transmission system noted in the SPP study as necessary to have reliable transmission service for the potential wind generation development in the western portion of the SPP to market. The study demonstrated that the proposed line is a valid solution for delivering wind resources from western Oklahoma to OG&E's load centers.

Q. **In addition to this application, has OG&E undertaken any action with respect to the construction of the 345 kV transmission line?**

A. Yes. OG&E issued a letter to the Southwest Power Pool (SPP) dated April 22, 2008, seeking approval to complete construction of the 345 kV transmission line (see Exhibit PLC-1). In this letter, OG&E, contingent upon receiving sufficient relief in this cause, committed to construct the line as a "Sponsored Upgrade". OG&E expects SPP approval of its commitment at SPP's next Board of Directors Meeting on July 29, 2008.

Q. **Are there other considerations to completing the transmission line according to the current schedule?**

A. After August 15, 2008, the Company will be required to make substantial expenditures to complete the transmission line by the first quarter of 2010. Timely commission approval is critical for OG&E to continue expenditures after this date.

Q. **What does it mean for the construction of a transmission line to be a Sponsored Upgrade?**

A. A Sponsored Upgrade, according to SPP terminology, is a transmission line investment in which the requesting utility and its customers are responsible for the full revenue requirement of the line. In this instance, OG&E and its customers would be responsible

for the full revenue requirement. However, as others subsequently use the transmission line, OG&E will receive credits toward transmission service for that usage. These transmission revenue credits (hereafter referred as transmission revenues) received by the Company will be applied as credits to utility bills, partially offsetting the revenue requirement for this line to OG&E's customers.

Q. **Are there alternatives to OG&E building the 345 kV transmission line as a Sponsored Upgrade?**

A. Under SPP's current structure, OG&E has no other alternatives for timely completion of this line. This line is not currently classified by SPP as a reliability project nor is it being built as a result of a transmission service request. A reliability project is a project that the SPP has determined is needed to meet the reliability needs of the SPP and qualifies for base plan funding cost allocation. A project identified as necessary to accommodate a transmission service request may also qualify for base plan funding. Because the existing transmission system in the area is presently at or near capacity, additional transmission service requests from potential wind farms in western Oklahoma are not likely to be granted without significant upgrades to the existing system. These upgrades would be identified through the SPP aggregate study process after transmission service requests have been made at the SPP. These aggregate studies can take up to eighteen (18) months. After the completion of the study, construction of the identified upgrades can take an additional eighteen to twenty four months to complete. This thirty-six (36) to forty-two (42) month lag between a transmission service request and having available transmission capacity to provide transmission service can result in the cancellation of transmission requests and their associated wind development projects. For example, the last SPP

aggregate study process that the Company participated in involved a service request associated with the Red Rock facility. That Study, 2006-AG3-ASIS, began in December of 2006, is now on its tenth iteration, and is still not completed.

Q. **Why doesn't OG&E wait for a transmission service request to begin construction of this line?**

A. If OG&E suspends activity on this line and waits for a transmission service request, the Company can not stay on course to offer customers additional renewable wind energy in 2010. As discussed by Mr. Langston, the cost of wind generation is increasing and delay will make additional wind generation more costly to our customers.

Q. **Why does OG&E believe construction of this line is preferable to incremental upgrades to the existing system?**

A. For several reasons. First, the 345 kV transmission line will substitute for piecemeal upgrades to the almost fully utilized 138 kV transmission system. Smaller, piecemeal upgrades can not be cost-justified on a project-by-project basis. Each time a wind producer desires to interconnect to the SPP transmission grid, the SPP determines the cost to upgrade the existing transmission system to accommodate the delivery of energy from that new generating source. With the state of the current transmission system in western Oklahoma, assigning the system-wide upgrade costs necessary to provide firm service for any single wind project to that project alone would almost certainly make that wind farm uneconomical. This economic reality will certainly, if it has not already done so, chill development of wind generation in western Oklahoma. OG&E believes strongly that, in

order for Oklahoma to reach its potential for wind development, a proactive initiative must be taken to promote the development of multiple wind farms to realize the benefits of wind energy for OG&E's customers.

Second, this project is the first phase in connecting the wind rich area of northwestern Oklahoma to SPP's extra high voltage (EHV) transmission network as depicted in the OEPTTF Study. The upgrades which would be required on the 138 kV transmission system in lieu of constructing the 345 kV line would be unnecessary upon completion of the EHV build-out from Woodward to Guymon, as the 345 kV line would have to be constructed in any event. The net result would be either a large duplication of facilities or stranded investments. Finally, the time to sequentially complete piecemeal upgrades to the 138 kV system would be much longer than simply constructing the 345 kV line in the first instance. This is due to the large number of upgrades required and coordinating with other transmission owners on whose systems many of the upgrades would be required.

Q. **Has OG&E analyzed the differences between an incremental approach and the construction of the new line?**

A. Yes. According to the studies OG&E has done, injecting an additional 100 MW of wind energy at Woodward on the 138 kV system would require upgrade costs of approximately $12.3 million and increase capacity by only 100 MW. Similarly, injecting 300 MW of additional wind generation at the substation near Woodward would require upgrades to the 138 kV system of approximately $126 million and increase capacity by approximately 300 MW. Finally, a 600 MW injection of wind energy at Woodward would require upgrades to the 138 kV system of approximately $159.4 million and

increase capacity by 600 MW. As discussed above, the current SPP process can take up to forty two (42) months to complete construction and would involve increases in capacities on twenty-three lines and six substations.

By comparison, the proposed 345 kV line from Woodward to Oklahoma City can be completed in approximately eighteen (18) months, and when combined with the next phase of build-out from Woodward to Guymon or other substations, has the potential for deliverability in western Oklahoma of an additional 1,200 MW on a thermal-rating basis.

Q. **Would you summarize why the Company proposes to add transmission capacity from Woodward to Oklahoma City at this time?**

A. First, waiting to add incremental capacity to the 138 kV system each time a wind project is developed will delay, if not cancel most projects. A major reason there is no significant development in the area today is that the current process for obtaining transmission service and completing the necessary upgrades to the existing 138 kV system can take up to three to three and a half years or longer and the costs are prohibitive for most, if not all individual developers. Additionally, when the SPP planned subsequent phases of EVH transmission are constructed in the northwestern portion of the state, any 138kV upgrades performed to support new wind generation discussed here will be made largely unnecessary and duplicative by the 345kV construction.

Next, before a project can be fully deliverable to a purchaser of wind energy, the project must go through the SPP study process and the developer must wait until any upgrades identified in the study process are completed. By contrast, the completion of the OG&E's proposed line is anticipated be the first quarter of 2010, thus minimizing this

delay and significantly encouraging wind development. Also, although the full capacity may not immediately be subscribed, the new line will open the broader SPP market to the potential wind resources in western Oklahoma, reducing the revenue requirement of the line to OG&E customers while benefiting the state's economy. With the publication of the SPP OEPTTF Study, the Company has confirmation that the proposed line is a valid solution for delivering wind resources from western Oklahoma to OG&E's load centers.

Section 3: Construction Costs, Proposed Construction Cost Cap and Revenue Requirement.

Q. **Please discuss the Company's current activities regarding the 345 kV line being proposed.**

A. The Company has retained Burns & McDonnell, an international engineering and consulting firm, to provide engineering and other services with regard to this project. Burns & McDonnell is currently working on routing of the proposed line and the preliminary engineering and design of the line. OG&E, in conjunction with Burns & McDonnell has scheduled town hall meetings to discuss routing options with landowners and other stakeholders. Once Burns & McDonnell finalizes the line route, engineering and design, construction activities and material procurement activities will be stepped up.

Q. **Why has the Company already began these activities?**

A. The Company has targeted a commercial operation date of first quarter 2010 for this line. In order to meet this deadline, certain long lead items must be ordered in a timely fashion. For example, a substation transformer of the type and size required for this line will require a minimum of fourteen (14) months from the order date to the delivery date. In

addition, the Company does not believe there will be any significant additional wind development in western Oklahoma without additional transmission in place to deliver wind energy to market. Our experience in transmission line construction leads to the conclusion that waiting only increases the final cost of such lines and ultimately the delivered cost of wind energy to OG&E's customers. As discussed by Mr. Langston, construction costs for the wind facilities themselves are expected to increase over time as well, so waiting to provide transmission access is also expected to increase wind energy costs to our customers.

Q. **How much money has been spent on these Pre-Construction efforts?**

A. As of the end of April 2008, OG&E had invested $420,000 in pre-construction activities. Further, OG&E is scheduled to invest $1.05 million in the line by the end of July 2008 and $1.7 million by the end of August 2008.

Q. **Do you have an estimate of total construction costs for this project?**

A. OG&E and the Company's consultant, Burns & McDonnell estimate the construction cost to be $197 million. AFUDC was then applied to reach a total construction cost of $211 million

Q. **Is the Company willing to agree to a capped construction cost as a part of this proceeding?**

A. Much like the Company's past positions in the Centennial and Red Rock pre-approval cases, it is willing to agree to a capped construction cost with the understanding that it

would have the opportunity to later seek recovery of any prudently spent amounts over the capped level.

Q. **At what level would the Company be willing to cap construction costs on this project?**

A. As discussed in Mr. Langston's' testimony the Company is requesting a cap on construction costs of $211 million.

Q. **What is the estimated revenue requirement to OG&E's customers for this line?**

A. The revenue requirement of the line, as a Sponsored Upgrade, and based upon a total cost of $211 million is expected to be approximately $33 million the first year of operation. This revenue requirement would decline each year with as the facility is depreciated. As discussed above, as SPP sells additional transmission service on this line, the revenue attributable to such increased usage will flow to OG&E and be used to further offset the revenue requirement on an ongoing basis.

Q. **How are these transmission revenues calculated?**

A. These transmission revenues are calculated using the pro rata usage of the new transmission service granted by the SPP, compared to the total capacity of the line. As more transmission service that impacts the line is sold by SPP, more revenues will be credited to OG&E for such use. For example, if an additional 300 MW of transmission service were sold by SPP over this line, OG&E would receive transmission revenues

equal to 16.67% (300MW/1800MW) of the total revenue requirement of the line. For the first year of operation this would equal $5.50 million.

Q. **How is the Company proposing to treat these transmission revenues?**

A. As explained in the testimony of Mr. Roger Walkingstick, the Company proposes to return these transmission revenues to its Oklahoma customers through the Renewable Transmission System Additions (RTSA) rider as an offset to the revenue requirement of the proposed 345 kV transmission line.

Q. **Can the SPP change the designation of the line from a Sponsored Project to a project eligible to receive Base-plan funding?**

A. OG&E has submitted the first of several requests to the SPP for transmission service to deliver the output of new wind projects to the load of OG&E. It is my expectation that this line will be identified in the SPP Aggregate Study process as necessary to satisfy these transmission service requests made by OG&E, and other customers of SPP, and that a 'waiver' could be granted by the SPP Board of Directors, designating this line as 'fully Base-plan fundable'. The Board of Directors of the SPP recently granted a similar waiver request for a 345kV transmission line project that better met the long-term needs of the region than the proposed alternative. OG&E will request the SPP Board to grant a waiver for this project to receive Base-plan funding.

Alternatively, the SPP Regional State Committee could revise the Cost Allocation principles later this year to include Base-plan funding for all 345kV lines.

Q. **How would OG&E's customers be impacted if the line were designated to receive Base-plan funding?**

A. The revenue requirement obligation of OG&E would be reduced by an average of approximately $15 million dollars per year if the line were designated as 'fully base-plan fundable' by the SPP,

Q. **What is your expectation regarding Base-plan funding for this line?**

A. It is possible that the line could be designated to receive Base-plan funding for this line by way of the granting of a waiver request either by OG&E, or by the revision by the SPP RSC of the cost allocation principles currently in place.

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

A. Yes it does.

OG&E

April 22, 2008

Les Dillahunty
Southwest Power Pool
Vice President, Regulatory Policy
415 North McKinley, #140 Plaza West
Little Rock, AR 72205

Mr. Dillahunty: Les

Pursuant to it's letter dated November 8, 2007 (copy attached), OG&E committed to build, own, and operate a new 345kV transmission line between OG&E's Northwest and Woodward District substation, subject to obtaining all necessary state and federal approvals. Subject to those same conditions, OG&E, by way of this letter, commits to construction of this line as a 'Sponsored Upgrade', with the cost directly assigned to OG&E, recognizing that OG&E will be eligible for Transmission Service Credits when additional transmission service that impacts this line is sold by the SPP. In making this commitment, OG&E will continue to be bound by the SPP OATT and changes thereto that specifically effect approval and funding.

As previously discussed with Jay Caspary, this line will be constructed for initial single-circuit, 3000 amp capability, with ultimate development to double-circuit 345kV operation in the same rights-of-way, if needed in the future. OG&E expects to have these facilities in-service by early 2010. This line supports the recommendations included in the Oklahoma Electric Power Transmission Task Force study, as well as the *SPP EHV Study Update*, dated March 2, 2008."

OG&E plans to file an application at the Oklahoma Corporation Commission ("OCC") for pre-approval of the costs associated with this 345kV line and approval of that application in a form satisfactory to OG&E management and Board of Directors is a condition to this commitment. We respectfully ask the SPP to expedite its study process related to this line in order that we can maintain the early 2010 in-service date. The expedited study and approval by the SPP Board of Directors will help ensure that this important "first step" of SPP transmission expansion is built in a time-frame which jump-starts wind generation projects in western Oklahoma.

Please acknowledge receipt of OG&E's request to construct the facilities described above. OG&E looks forward to the continued development of projects identified by the SPP Transmission Expansion Planning process.

Sincerely,

Mel Perkins,
Vice-President, Power Delivery
Oklahoma Gas and Electric Company

Attachment: OG&E commitment letter, November 8, 2007

OG&E

November 8, 2007

Mr. Jay Caspary
Southwest Power Pool
Director, Transmission Planning
415 North McKinley, #140 Plaza West
Little Rock, AR 72205

Mr. Caspary:

Please be advised that Oklahoma Gas and Electric Company (OG&E) commits to immediately begin preliminary design of a new transmission line from OG&E's Northwest Sub in Oklahoma City to OG&E's Woodward District substation in Woodward OK. We assume that SPP will determine the number of circuits and ultimate design voltage of the requisite facilities. Assuming 345 kV line construction, OG&E would expect to have these facilities in-service by 2010. If, upon the determination of SPP, a voltage higher than 345 kV is preferable, please advise.

OG&E commits to the contemplated facilities subject to obtaining all necessary state and federal approvals, and subject to OG&E determination that the project will be eligible for adequate cost recovery. In making this commitment, OG&E will continue to be bound by the SPP OATT and changes thereto that specifically effect approval and funding. Please acknowledge receipt of OG&E's request to construct the facilities described above.

OG&E looks forward to the continued development of projects identified by the SPP Transmission Expansion Planning process.

Sincerely,

Mel Perkins,
Vice-President, Power Delivery
Oklahoma Gas and Electric Company