BEFORE THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

DIRECT TESTIMONY

OF

JOHN T. BRIDSON

WESTAR ENERGY

DOCKET NO. 15-WSEE-115-RTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John T. Bridson. My business address is 818 South Kansas Avenue, Topeka, Kansas 66612.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. I am employed by Westar Energy, Inc. (Westar) as Senior Vice President, Generation and Marketing.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a B.S. in mechanical engineering from Kansas State University in 1992. I began my career with Westar in January 1993 as a plant engineer at the Jeffrey Energy Center. I held several engineering and management positions at Jeffrey Energy Center before being promoted to Executive

Director, Gas Plants in 2001, where I managed all of Westar's gas fired generating plants. In 2007, I became Executive Director of the Lawrence Energy Center. I became Executive Director, Generation in May 2010, leading the management of all of Westar's generation fleet before being promoted to Vice President, Generation in February 2011. I assumed the role of Senior Vice President, Generation and Marketing at the beginning of this year.

Q. WHAT ARE YOUR RESPONSIBILITIES AS SENIOR VICE PRESIDENT, GENERATION AND MARKETING?

A. I am responsible for all of the generating plants that Westar owns and operates including coal, gas, and wind generation. I am also responsible for two plants operated by others of which Westar is a co-owner – specifically, the State Line combined cycle plant and La Cygne, a coal-fired plant. Westar's subsidiary, Kansas Gas and Electric Company, and Kansas City Power and Light Company (KCP&L) each have a 50% interest in La Cygne. I serve as one of four Westar employees on the Wolf Creek Nuclear Operating Company board of directors, overseeing Westar's 47% interest in Wolf Creek Nuclear, and I serve on Wolf Creek's operations committee. I also oversee our employees who handle our participation in the SPP Integrated Market.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I will describe the construction at La Cygne Generating Station (La Cygne), known as the “La Cygne Environmental Project” or the “Project” and the basis for the related costs in Westar’s Application.

I will also discuss the recent capital investment at Wolf Creek Generating Station (Wolf Creek) as we prepare to extend its life consistent with its Commission authorized depreciation schedules and as more recently approved license extension by the Nuclear Regulatory Commission.

I will explain the timing and process for replacing the filter for the new bag house at Lawrence Energy Center as it relates to an accounting adjustment being proposed by Westar witness Kongs.

Finally, I will discuss some of the ways we have been improving the efficiency of our generating units and how we have developed innovative cost-effective solutions to comply with increasingly stringent environmental regulations.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. First, with respect to the La Cygne Environmental Project, we, as joint owners, are on track for successfully completing the Project under budget and for less than the amount preapproved by the Commission in Docket No. 11-KCPE-581-PRE. The Project is expected to be reducing pollutants at the intended levels by early April for Unit 2 and by May 31 for Unit 1. This Project maintained a world class safety record.

Second, we have been making capital investments at Wolf Creek to prepare the plant for its 20 years of extended life to 2045 and to comply with Nuclear Regulatory Commission (NRC) regulations enacted after an earthquake and subsequent tidal wave damaged the Fukushima nuclear plant in Japan. This investment in Wolf Creek will help ensure the continued availability of a low-cost resource for the benefit of our customers.

Third, we are continually looking for ways to improve the efficiency of our generation fleet and to implement innovative solutions to reduce costs for our customers. A recent upgrade to the turbine on Unit 1 at Jeffrey Energy Center (JEC) resulted in fuel cost savings for customers of approximately $6 million each year. As I discuss in detail below, we have also found innovative solutions to several environmental compliance requirements that have saved our customers hundreds of millions of dollars. Our generation fleet is operating reliably and we are ranked favorably by NERC for reliability. This high level of reliability also reduces fuel costs for the benefit of our customers by making our lowest cost generating units even more available for electric production.

II. LA CYGNE ENVIRONMENTAL PROJECT

Q. PLEASE DESCRIBE LA CYGNE.

A. La Cygne has two coal-fired units – Unit 1 rated at 812 MW (gross) placed in commercial operation in 1973 and Unit 2 rated at 717 MW gross, placed in service in 1977.

Q. WHAT IS THE LA CYGNE ENVIRONMENTAL PROJECT?

A. The Project was described at length to the Commission in KCP&L's predetermination proceeding, Docket No. 11-KCPE-581-PRE, to which Westar was also a party. In summary, the La Cygne Environmental Project includes the installation of wet scrubbers to reduce SO2 emissions, bag houses to reduce emissions of particulates, activated carbon injection equipment to remove mercury, and a common duel-flue chimney for both Units 1 and 2. It also involves installation of a selective catalytic reduction (SCR) system, low-nitrogen oxide burners, and an over-fire air (OFA) system for Unit 2 to reduce NOx emissions. The Project remains on schedule for an expected completion by May 31, 2015.

Q. WHAT HAS BEEN WESTAR'S INVOLVEMENT WITH THE PROJECT?

A. As a co-owner of La Cygne, Westar shares interest with KCPL – the operator of the plant – in the Project being completed safely, effectively, on time and on, or under, budget. We worked with Great Plains Energy, Inc. – KCP&L's parent company – to develop the request for proposal for the project, evaluate bids and select the winning bidder. We helped select La Cygne Environmental Partners (LEP), a joint venture formed by Kiewit Power Constructors Co. and Sargent & Lundy, L.L.C., for purposes of engineering, procurement, and construction of the Project. In addition, as outlined further below, Westar, while not the operator of the plant, engages in significant on-going oversight and monitoring activities.

Q. BRIEFLY DESCRIBE THE STATUS OF THE PROJECT.

A. The upgrades to Unit 2 were completed and placed in operation in February 2015. The tie-in to place the Unit 1 upgrades in-service is in process and is expected to be complete by the end of May 2015. That portion of the Project too is on schedule.

The current total cost for the Project is estimated to be $30 million below its preapproved cost of $1.23 billion. Westar's 50% share of the total cost of the project is $600 million, a portion of which has already been reflected in rates. It is the remainder we seek to include in rates in this Application.

Q. HAS THE PROJECT BEEN SUCCESSFUL?

A. Yes, highly successful. We have experienced minimal change orders for the Project, which is also evidence of our success in controlling costs. The project has also had a world class safety record during the Project's construction. Finally, as indicated above, the systems installed as part of the Project are all functioning (or will shortly function) as intended to reduce emission levels per the design.

Q. HOW DID YOU WORK WITH THE PLANT'S OPERATOR, KCP&L, TO MONITOR THE PROJECT?

A. KCP&L and Westar have an excellent working relationship with one another and with LEP. All three companies have worked together diligently to ensure successful completion of the Project. Westar has had employees and senior management closely involved with the Project from the beginning.

We have a Westar representative at the La Cygne site on a daily basis who attends daily and weekly scheduling, construction, and engineering meetings and participates in the monthly Schedule of Values verification conducted by KCP&L, meaning he regularly visually inspects the project to confirm progress. We also have a full-time employee with responsibility for project controls verifying invoices against purchase orders, comparing actual costs to budgeted costs, and confirming compliance with the contract. This employee looks for duplication and tracks, analyzes, and reports project cost detail.

About five of our employees attend meetings with KCP&L and LEP on a monthly basis to review reports and/or meet with and update Commission Staff. These employees are from various departments throughout Westar, including regulatory, major construction, generation support, internal audit and environmental. I attend a monthly joint meeting with executives from KCP&L to review the status of the Project. Our Chief Executive Officer and other senior officers have visited the site on more than one occasion.

KCP&L submits a monthly status report on the Project to the Commission in Compliance Docket No. 12-KCPE-258-CPL. Each report includes actual cost data for the Project, as well as schedule and performance metrics. Each monthly report also includes a written narrative describing overall progress. This provides the Commission with ongoing information regarding progress. In addition, the owners meet with KCC

Staff each month to review cost and performance metrics, provide an update on activities since the report was filed, and walk through the site to view construction progress. The KCC Staff has had around 40 of these monthly update meetings through the duration of the project.

Q. HOW WILL THE PROJECT BENEFIT KANSAS?

A. Completion of the La Cygne Environmental Project was determined by the Commission and all parties to be the lowest cost option for serving customers in the 11-KCPE-581-PRE docket. Completion by June 1, 2015, is required for the plant to be in compliance with applicable environmental regulations and a consent decree between KCP&L and the U.S. Environmental Protection Agency (EPA). Without the Project upgrades, we would have to shut down La Cygne at the end of May 2015, until the upgrades are complete. Completing the Project ensures that La Cygne can continue to operate and provide compliant, low-cost electricity to our customers and KCP&L's. Additionally, completing the Project helps ensure that the Kansas City metropolitan area will remain in attainment of all National Ambient Air Quality Standards (NAAQS). Were an area to fall into non-attainment there are always costly consequences. Industries located in or near a non-attainment area would be required to install pollution control equipment, agree to limitations on their production, or find other industries willing to reduce *their* production in order to provide an emissions offset. All of these would result in lost revenue and likely job reductions. The Project will increase the chance that the KC metro area will stay in attainment,

thereby helping to avoid these negative consequences to the economy and jobs. Of course, more directly, the estimated 235 jobs associated with La Cygne itself are also maintained.

Q. WHAT PORTION OF THE PROJECT COSTS IS WESTAR SEEKING TO RECOVER IN THIS PROCEEDING?

A. We are seeking to recover the additional costs related to the La Cygne Environmental Project incurred through May 31, 2015 that have not already been included in rates. Westar's Application reflects the actual costs we incurred through October 31, 2014, and a projection of the total costs we expect to incur through May 31, 2015. Westar will then provide actual cost data for the project through the May 31, 2015 to Staff and other parties by June 8, 2015. We will true-up estimates with actual costs using the procedure approved by the Commission in its Order in Docket No. 15-GIME-025-MIS. Kevin Kongs, our Controller, will testify to the relevant accounting adjustments and cost of service impact of the Project.

The costs reflected in the rates ultimately approved by the Commission will be Westar's actual costs for the Project. We expect the Project to be completed by May 31, 2015, and substantially all of the costs of the Project to be incurred and quantified by the true-up date. However, we request the authority to file an abbreviated rate case within twelve months of the Order in this docket to recover any costs related to the Project which will not yet be known and thus recovered in this or the prior dockets related to the Project.

III. WOLF CREEK GENERATING STATION

Q. PLEASE DESCRIBE WOLF CREEK.

A. Wolf Creek is a nuclear power plant completed and placed in service in 1985. It can generate about 1,200 MW of electricity. The ownership of the plant is divided between Westar (47%), KCP&L (47%), and Kansas Electric Power Cooperative, Inc. (6%). Wolf Creek Nuclear Operating Corporation (WCNOC) operates the power plant for the owners. It too is owned in the same proportions. Early in the last decade the Commission changed the depreciable life of Wolf Creek to reflect a 60 year life. In 2008, the owners were successful in gaining the NRC's approval to actually extend the license for that longer 60 year life; through 2045.

Q. WHY WERE ADDITIONAL CAPITAL INVESTMENTS REQUIRED AT WOLF CREEK?

A. All power plants require ongoing investment in plant and equipment to assure continued safe, reliable operations. In Wolf Creek's case, it is entering a stage of plant life where original plant systems are in need of upgrades to maintain safe and efficient operation for the now much longer expected operating life. Additionally, the original capacity factor assumed for Wolf Creek was far lower than what we have been able to achieve. This stage of plant life, the significant additional production stresses, combined with additional external regulatory requirements, such as new requirements related to Fukushima, have caused an increase in capital expenditures for Wolf Creek.

Q. IN WHAT WAYS DOES THE FUKUSHIMA NUCLEAR ACCIDENT IN 2011 AFFECT WOLF CREEK?

A. After Fukushima, the NRC conducted a review of its regulations and processes to determine if any safety improvements should be made. The NRC issued several orders as a result of this review requiring changes to be made at U.S. nuclear plants including Wolf Creek.

One of the Fukushima requirements mandated an update of Wolf Creek's earthquake analysis and flooding analysis and a subsequent field verification of safety equipment referenced in these analyses. The new rules also required us to purchase portable emergency equipment for use at Wolf Creek and to add connection points to plant safety systems to allow for this portable equipment to keep the reactor and spent fuel pool cool were an event to occur that would interrupt primary safety systems. Finally, the new rules require us to construct two new hardened buildings to house this portable emergency equipment.

Q. WHAT SIGNIFICANT CAPITAL IMPROVEMENTS ARE EITHER CURRENTLY UNDERWAY OR HAVE RECENTLY BEEN CONSTRUCTED AT WOLF CREEK?

A. There are three major modifications either in process or recently completed. All three pertain to safety systems to replace and enhance aging, original plant system. The Essential Service Water system pumps lake water into the plant and would ultimately cool the plant, the spent fuel pool, and the reactor in the event of an accident. Its operation would be critical to prevent

a Fukishima type of event. Because the Essential Service Water system handles lake water, it is subject to corrosion over long periods of use. The owners replaced the original exterior, below-ground piping of the Essential Service Water system in the 2014 mid-cycle outage. Major modifications being completed during this outage are:

1. In-plant Essential Service Water Piping Inspection and Replacement
2. Containment Cooler Upgrade
3. Essential Service Water System Pressure Surge Mitigation

Q. PLEASE DESCRIBE THE IN-PLANT ESSENTIAL SERVICE WATER PIPING INSPECTION AND REPLACEMENT PROJECT.

A. The In-plant Essential Service Water Piping Inspection and Replacement modification is an ongoing process to replace the original system piping inside the plant. The Essential Service Water System cannot be taken out of service during plant operations because it cools the spent fuel pool. Only parts of it can be replaced during an outage. This limits the amount of system piping that can be replaced each outage.

Q. PLEASE DESCRIBE THE CONTAINMENT COOLER UPGRADE MODIFICATION.

A. The containment coolers are safety-related components that air condition equipment in the containment building. They are needed during normal operation to maintain the proper operating temperature for components in containment. In the event of an accident, they would be required to remove heat from the containment atmosphere. Once again, because there is lake

water flowing through these coolers, they are highly subject to corrosion and must be replaced.

This modification begins the upgrade of the existing tube bundles with redesigned tube bundles made out of a corrosion resistant material and designed to enable more effective in-service testing.

Q. PLEASE DESCRIBE THE ESSENTIAL SERVICE WATER SYSTEM WATER PRESSURE SURGE MITIGATION.

A. The Essential Service Water System is subject to water pressure surges when activated, not unlike what a homeowner might experiences when rapidly turning the water on or off, only to hear pipes rattle. Because of the size and scale of the piping at Wolf Creek the resulting “water hammer” must be mitigated to prevent damaging equipment. Wolf Creek originally evaluated the impact to the system from the water hammer and concluded that it does not affect nuclear safety. However, as with many forms of safety regulation, standards evolve. The NRC has recently questioned this approach and has now required Wolf Creek to take steps to reduce the effect of the pressure surges. This modification will add check valves and vent piping.

Q. HAVE WOLF CREEK AND THE NRC AGREED THAT WOLF CREEK SHOULD MAKE THESE MODIFICATIONS?

A. Yes.

Q. WHAT IS THE COST OF THE CAPITAL IMPROVEMENTS BEING COMPLETED AT WOLF CREEK?

A. Since our last general rate case, Westar's share of the new capital investment at Wolf Creek has been approximately $286 million. This includes capital projects already completed at the plant, the cost of the projects I just discussed and a few other smaller projects that are being completed during the Spring 2015 outage.

As was contemplated by the Commission Order in Docket No. 15-GIME-025-MIS, we have included the actual cost of capital projects at Wolf Creek that were completed by September 30, 2014, and the remaining estimated cost for projects to be completed as part of the Spring 2015 outage in our rates proposed in this Application. We will update with actuals through May 31, 2015 so that Staff can confirm the figures. Mr. Kongs discusses the accounting adjustment necessary to incorporate these costs into rates in his testimony.

Q. HOW DO CUSTOMERS BENEFIT FROM THESE INVESTMENTS IN WOLF CREEK?

A. Wolf Creek continues – and is expected now to continue through 2045 – to provide zero-emission, relatively stable cost power to Westar's customers. By making these capital investments, Westar is ensuring that the plant's 1000 employees will continue to safely and reliably operate the plant long into the future.

During the test year, Wolf Creek provided Westar customers with approximately 3.9 million MWh of energy at an average fuel cost of less than a penny per kWh. Other than our wind generation, Wolf Creek

continues to be the lowest incremental cost plant in our fleet. Additionally, Wolf Creek provides us with fuel price stability because the price of nuclear fuel does not vary much. Furthermore, Wolf Creek is a significant source of carbon free generation. It is uncertain what restrictions may be placed on carbon emissions in the future, but Wolf Creek's presence in our generation fleet provides us and our customers more options and opportunities for responding to future carbon restrictions in a well-planned and controlled process that will minimize the rate impact of such restrictions to our customers. Wolf Creek also helps to diversify our generation fleet so that we do not rely too heavily on coal or natural gas.

IV. LAWRENCE ENERGY CENTER BAG HOUSE FILTER

Q. WHAT IS THE LEC BAG HOUSE?

A. In 2012, Westar installed new bag houses on two of the three units at its Lawrence Energy Center (LEC) to meet environmental requirements related to emission of particulates. They are, essentially, big vacuum cleaners that suck particulates from the flue gas and collect them in hundreds of disposable filter bags.

Q. HOW OFTEN DO THE FILTERS ON THE BAG HOUSES HAVE TO BE REPLACED?

A. We replace them on a three-year cycle, with the first such replacement to be completed by May 25, 2015. The bags that will be installed during the May outage will be an upgraded technology and we hope to extend the interval to 6 years. We have included an estimate of the cost for the

replacement of the filers in our Application and actual costs will be available well in advance of the deadline for Staff's and other parties' direct testimony, allowing sufficient time for an audit of those costs. In his direct testimony, Mr. Kongs proposes to include the material and labor cost for the replacement filters in rates and amortize the total over a six-year period.

Q. IS THIS METHOD CONSISTENT WITH PRIOR COMMISSION PRECEDENT?

A. Yes. It is the same method approved by the Commission for similar costs associated with replacing the catalyst used in the selective catalytic reduction (SCR) systems. Similar to the bag house, the catalysts are consumable items that must be replaced on a regular cycle.

V. GENERATION EFFICIENCY IMPROVEMENTS AND COST MANAGEMENT SOLUTIONS

Q. HOW HAS WESTAR BEEN IMPROVING THE EFFICIENCY OF ITS GENERATING PLANTS?

A. We are always looking for ways to improve the efficiency of our plants and provide additional value to our customers. For example, we recently upgraded the turbine on Unit 1 at Jeffrey. Preliminary results indicate we gained 15 additional MWs of capacity from the unit while burning about 5.6% less fuel. This will result in a reduction in fuel costs for our customers of about $6 million on an annual basis, while reducing emissions per MWh. Achieving more generating capacity while burning less fuel is a "win-win" for customers.

Q. HOW HAS WESTAR'S GENERATION FLEET BEEN PERFORMING?

A. We continue to operate a reliable fleet. Measured by NERC, the past five years we have been in either the best or second best quartile for reliability. High reliability saves our customers money through reducing fuel costs. We have also been able to stretch the interval between major outages at our plants to three years, which also helps to control costs for our customers.

Q. HOW HAS WESTAR BEEN ABLE TO MANAGE THE COSTS OF COMPLYING WITH ENVIRONMENTAL REGULATIONS?

A. Although compliance with the large number of evolving environmental regulations that apply to our power plants can be expensive, Westar has worked to find innovative and lower cost solutions to significantly reduce the potential cost of compliance. We implemented an innovative and award-winning solution for handling wastewater from the scrubbers at Jeffrey and found an alternative way to comply with environmental requirements for Jeffrey that would otherwise have required the installation of additional SCR systems.

Q. WHY WAS THERE A NEED TO ADDRESS WASTEWATER FROM THE JEFFREY SCRUBBERS?

A. A scrubber removes sulfur dioxide (SO_2) from the flue gas. Westar currently has scrubbers on all three units at JEC. In the process of removing SO_2 from the flue gas, Westar's wet flue gas desulfurization process creates a liquid waste. We must dispose of the liquid waste in an environmentally permissible and responsible manner.

Q. WHAT OPTIONS DID WESTAR CONSIDER TO ADDRESS THE PROBLEM?

A. We evaluated several options, including discharge to the Kansas River – which was not feasible from an environmental perspective, deep well injection, evaporation/crystallization, and finally, construction of a wetlands that would treat the wastewater naturally.

Ultimately, Westar decided to pursue the more innovative option to construct the wetlands and allow nature to treat the wastewater naturally. With just a little help from a mechanical sulfate treatment system, this new, innovative application of the constructed wetlands treatment system is meeting all environmental regulations. Because this is a new approach to wastewater treatment, Westar first implemented a pilot project to construct a small scale wetland to treat approximately 10% of the FGD wastewater. The pilot project was successful and in 2014, Westar constructed a full scale constructed wetland. We have seen great success with the full scale project. Arguably, this is the “greenest” of all options as it allows for treatment of the water through natural biological processes, requires very little equipment or mechanical processes, potentially allows for re-use of the treated water, and has relatively low annual O&M costs. Most importantly, it was the least expensive solution. We completed the wetlands for approximately $38 million, while deep well injection would have cost nearly twice the amount and evaporation/crystallization would have cost over $100 million.

Q. HOW DID WESTAR AVOID INSTALLING SCR ON UNITS 2 AND 3 AT JEFFREY?

A. Pursuant to a Consent Decree with the United States Environmental Protection Agency (USEPA) and the Kansas Department of Health and Environment, Westar negotiated an option that would require us to either install SCRs on two Units at Jeffrey or to achieve an equivalent level of emissions reductions in some other fashion. At the time we could not conceive of any other way of meeting these levels without another SCR system. However, we did not give up. Our engineers went to work looking at ways we might avoid some of that additional cost and complexity, given the option we had negotiated. Installation of two SCRs at JEC would have been expensive for our customers, with a capital cost of approximately $500 million. Our environmental and generation engineers worked to find, negotiate, and engineer an alternative, less costly solution that would still meet our obligations under the Consent Decree. Ultimately, we were able to install less costly low nitrogen oxide burner systems and selective non-catalytic reduction systems (SNCRs) on Jeffrey Units 2 and 3 and only one SCR on Unit 1, yet still meet the mandated thresholds. This one approach alone saved our customers approximately $180 million from the more obvious, but far more costly solution.

Q. HAD YOU PURSUED THE SECOND SCR SYSTEM INSTEAD, WOULD THOSE COSTS HAVE BEEN RECOVERED IN YOUR ECRR?

A. Yes.

Q. HAS WESTAR ACHIEVED ANY OTHER COST SAVINGS IN THE PROCESS OF COMPLYING WITH THE JEC CONSENT DECREE?

A. Yes. We completed the construction of the SCR on JEC Unit 1 for 6% below our budgeted costs. Additionally, after our success with installing the SNCR and burner system on Unit 3, our team discovered further improvements we could make to Unit 2. We took what we learned from Unit 3 and modified the installation on Unit 2 to perform even better. With these improvements, we will use less ammonia to achieve the required emissions reductions, resulting in operating savings of about $1 million annually, and reduce the amount of liquid waste we need to clean up.

Q. DO YOU HAVE ANY CONCLUDING COMMENTS?

A. As an engineer, I am proud of what our engineers, operators and environmental scientists have done to keep our plants operating (along with the hundreds of jobs they represent); keep them compliant with evolving, stringent EPA regulations; keep them reliable; and performing in a way that keeps the electricity we provide affordable to our customers. Each of these dimensions provide daily challenges we look forward to addressing.

Q. THANK YOU.