BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY) OF OKLAHOMA ("PSO") TO RECOVER ALL) COSTS INCURRED FROM THREE WIND) POWER RESOURCE CONTRACTS THROUGH) THE FUEL COST ADJUSTMENT RIDER AND TO) RECOVER THE COST OF THE INDEPENDENT) EVALUATOR)	CAUSE PUD 201300188

RESPONSIVE TESTIMONY

OF

SCOTT NORWOOD

ON BEHALF OF

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

DECEMBER 11, 2013

RESPONSIVE TESTIMONY OF SCOTT NORWOOD

TABLE OF CONTENTS

EXHIBITS:

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Scott Norwood. My business address is P.O. Box 30197, Austin, Texas 78755.

Q. WHAT IS YOUR OCCUPATION?

A. I am a consultant specializing in the areas of energy planning, procurement and regulation, and President of Norwood Energy Consulting, L.L.C.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am an electrical engineer with over 30 years of experience in the electric utility industry. After graduating from the University of Texas in 1980, I began my career as a power plant engineer for the City of Austin's Electric Utility Department. In January 1984, I joined the staff of the Public Utility Commission of Texas ("PUC" or "Commission") where I served as Manager of Power Plant Engineering and was responsible for addressing resource planning, fuel and purchased power cost issues which came before the Commission. In 1986 I joined GDS Associates, a Marietta, Georgia based consulting engineering firm. I was elected a Principal of GDS in 1990, and directed the firm's Deregulation Services Department until January 2004, when I left to form Norwood Energy Consulting, LLC. The focus of my current consulting practice is energy planning, procurement and regulation. My resume is attached as Exhibit SN-1.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE CORPORATION COMMISSION OF OKLAHOMA?

A. Yes. I have testified in numerous past base rate and fuel proceedings before the Oklahoma Corporation Commission ("OCC" or "Commission"), including a number of past cases involving Public Service Company of Oklahoma ("PSO"). I have also participated on behalf of OIEC in past Commission proceedings involving wind energy resources, including OCC Cause No. PUD 201000092 (involving PSO's request for approval of the MINCO wind energy purchase agreement) and recent public hearings involving PSO's updated 2012 Integrated Resource Plan. Through my participation in these past projects, I have become very familiar with the operations and costs of power supply resources on PSO's system. In addition, I have submitted testimony on utility regulatory matters in past proceedings before the Federal Energy Regulatory Commission ("FERC"), and before state regulatory commissions in Arkansas, Florida, Georgia, Iowa, Illinois, Louisiana, Michigan, Missouri, New Jersey, Texas, Virginia, Washington, and Wisconsin. My Exhibit SN-1 provides a list of my past testimony in Oklahoma and other jurisdictions.

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

A. I am testifying on behalf of Oklahoma Industrial Energy Consumers ("OIEC").

Q: WHO IS OIEC?

A: OIEC is an association, consisting principally of a diverse group of Oklahoma processing and manufacturing industries, which is involved in regulatory and legislative matters primarily involving natural gas and electric power.

Q: WHAT IS OIEC'S INTEREST IN THIS PROCEEDING?

A: OIEC is an association which represents the interests of industrials or other large energy consumers. Many industries in Oklahoma purchase substantial quantities of electric power which are important to their operations. Electric power costs can constitute a significant percentage of industrial operating costs. These electric power supplies are generally purchased from utilities pursuant to standard tariffs filed at the Commission. Industries served by PSO often operate in highly competitive business environments and, thus, are interested in the Commission determining rates for PSO that achieve reliable power supply at the lowest and most reasonable costs possible under the circumstances.

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

A. The purpose of my testimony is to present my analysis and recommendations regarding: (i) PSO's request for approval to recover from ratepayers the costs of three new wind energy purchase contracts and, (ii) PSO's allocation of such costs to its various customer classes.

Q. WHAT IS OIEC'S INTEREST IN THIS CASE?

A. OIEC's members are among the largest users of electricity on PSO's system, and therefore are very sensitive to any electric rate increases proposed by PSO, and particularly proposals that impact the Company's Fuel Cost Adjustment ("FCA") Rider.

Q. HAS OIEC SUPPORTED PSO'S PAST ACQUISITION OF WIND ENERGY RESOURCES?

A. Yes. OIEC historically has supported the acquisition of power supply resources that enhance fuel diversity and which meet the Commission's "lowest reasonable cost" standard. In this regard, OIEC has supported wind energy resources acquired by PSO and Oklahoma Gas and Electric Company ("OG&E") that have met the lowest reasonable cost standard.

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

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

II. PSO'S PROPOSED WIND ENERGY CONTRACTS

Q. WHAT WAS THE PROCESS WHICH LED TO PSO'S SELECTION OF THE PROPOSED NEW WIND ENERGY CONTRACTS AT ISSUE IN THIS CASE?

A. PSO issued a Request for Proposal ("RFP") for renewable energy resources on June 18, 2013. The Company's RFP sought proposals for long-term supply of up to 200 MW of renewable energy for service beginning January 1, 2016. PSO engaged Boston Pacific Company, Inc. as the Independent Evaluator of the RFP and bid evaluation process. In response to the RFP, the Company received 18 wind energy proposals for 16 different wind projects with an aggregate name-plate capacity totaling 2,692 MW. (See page 10 of PSO witness Godfrey's direct testimony.) PSO conducted an economic analysis of the bids and used the Southwest Power Pool ("SPP") Long-Term Service Request study process to evaluate related transmission service costs for shortlisted bids. After significant analysis, the Company entered into three contracts for the purchase of approximately 600 MW of wind energy over a 20 year term beginning in January of 2016 (hereinafter referred to as "Wind Energy Contracts").

Q. WHO ARE THE THREE WIND SUPPLIERS SELECTED BY PSO?

A. The three suppliers selected by PSO are Balko Wind, LLC,Goodwell Wind Project, LLC, and Seiling Wind, LLC.

Q. HOW ARE THE NEW CONTRACTS EXPECTED TO IMPACT THE LEVEL OF WIND ENERGY ON PSO'S SYSTEM?

A. As summarized in Table 1 below, the Wind Energy Contracts will increase PSO's wind energy ownership by 598.7 MW. The Company expects to receive approximately 2.65 million MWh of energy annually from the new contracts, which is equivalent to roughly 13% of PSO's total forecasted 2016 energy requirements. (See page 16 of PSO witness Godfrey's direct testimony.) When this new wind energy is added to energy supplied under PSO's existing wind contracts, the Company's wind energy is expected to be over 20% of the Company's total energy requirements in 2016.

Table 1

PSO Wind Energy Contracts

Weatherford	147.0
Blue Canyon II	120.6
Blue Canyon II	30.6
Sleeping Bear	94.5
Blue Canyon V	99.0
Elk City	98.9
Minco	99.2
Total Existing	689.8
Balko	199.8
Seiling	198.9
Goodwell	200.0
Total New	598.7
Total PSO Wind	1288.5

Q. WHAT ARE THE BASIC PROVISIONS OF EACH OF THE PROPOSED WIND ENERGY CONTRACTS?

A. The three contracts provide for delivery of wind energy to PSO over a twenty year term starting on January 1, 2016. Contract pricing reflects an "around the clock" base price per Megawatt-hour based on the initial year price plus an annual escalator. The contracts include performance guarantees that ensure that each wind project provides a minimum specified energy level with performance penalties to compensate PSO in the event performance falls before the specified levels. The contracts provide that PSO retains the environmental and renewable energy credits ("RECs") associated with energy purchased under each contract, and the Company has indicated that it intends to continue to

monetize such RECs in accordance with prior Commission Orders. (See page 14 of PSO witness Godfrey's direct testimony.)

III. BENEFITS OF PROPOSED WIND ENERGY CONTRACTS

Q. HAVE YOU REVIEWED PSO'S ANALYSES OF THE COSTS AND BENEFITS OF THE PROPOSED WIND ENERGY CONTRACTS?

A. Yes.

Q. WHAT ARE THE EXPECTED BENEFITS OF THE PROPOSED WIND ENERGY CONTRACTS TO PSO'S CUSTOMERS?

A. The proposed contracts are expected to benefit PSO's customers by enhancing fuel diversity and by providing a guaranteed low cost source of energy for twenty years which will serve to significantly reduce PSO's system energy costs. In fact, according to PSO's base case analysis, the Wind Energy Contracts are forecasted to provide $723.9 million of net energy savings (on a present value basis) when compared to an alternative scenario without additional new wind energy additions. (See Column Q of PSO witness Maclean's Exhibit JRM-2) These forecasted savings reflect the fact that the price of energy from the Wind Energy Contracts is at historically low levels and is expected to remain far lower than the cost of natural gas-fired generation and market energy purchases which the wind energy is expected to displace. In fact, the price of energy from the Wind Energy Contracts is competitive when compared to the current cost of coal-fired energy, which is by far PSO's lowest cost energy resource.

Q. DID PSO'S ANALYSIS CONSIDER THE COSTS OF TRANSMISSION, OPERATING RESERVES AND BALANCING SERVICES FOR THE PROPOSED WIND ENERGY CONTRACTS?

A. Yes. Although PSO's analysis includes the cost of certain new high voltage transmission upgrades that are expected to be required to allow firm delivery of the energy to PSO's system, it is important to recognize that under SPP's transmission cost allocation methods, most of the cost of these new facilities will be allocated to other parties within SPP. Moreover, PSO's customers are already being charged for much of the new high voltage transmission infrastructure that was approved by the SPP over the last several years for the purpose of allowing wind energy in Oklahoma (and other regions) to be transported throughout SPP. The expected savings arising from PSO's proposed wind energy purchases will help offset a portion of the significant cost increases that will occur over the next several years due to these previously approved SPP high voltage transmission projects.

Q. DID PSO'S ANALYSIS CONSIDER THE CAPACITY BENEFITS TO THE PSO SYSTEM SUPPLIED BY THE PROPOSED WIND ENERGY CONTRACTS?

A. Yes. PSO's analysis of the Wind Energy Contracts included a modest forecasted capacity value which was based on 5% of nameplate rating (approximately 30 MW) capacity credit. However, the primary benefit of the contracts is the low cost wind energy supplied over the 20-year term of the contracts.

Q. DID PSO'S ECONOMIC ANALYSIS INCLUDE THE ESTIMATED MARKET VALUE OF RENEWABLE ENERGY CREDITS ("RECS") ASSOCIATED WITH THE PROPOSED WIND ENERGY CONTRACTS?

A. No. PSO's economic analysis did not include the monetized value of RECs which represent another economic benefit of the Wind Energy Contracts to customers.

Q. DID PSO'S ANALYSIS CONSIDER THE INDIRECT ECONOMIC BENEFITS OF THE PROPOSED WIND ENERGY CONTRACTS?

A. No. The proposed wind energy projects will be located in Oklahoma and therefore will provide additional jobs, tax revenues and other indirect economic benefits to Oklahoma. These indirect economic benefits are an advantage of the Wind Energy Contracts.

Q. DID PSO'S ANALYSIS CONSIDER THE ENVIRONMENTAL BENEFITS OF THE PROPOSED WIND ENERGY CONTRACTS?

A. No. The Wind Energy Contracts will supply renewable energy that will displace existing natural gas and coal-fired energy resources on PSO's system, and therefore will help reduce CO2, SO2 and NOx emissions and other combustion byproducts. These environmental benefits are an additional advantage of PSO's proposed wind energy contracts.

Q. ARE THE FORECASTED BENEFITS OF THE PROPOSED WIND ENERGY CONTRACTS IN ANY WAY CONTINGENT UPON THE RESOLUTION OF PSO'S ENVIRONMENTAL COMPLIANCE PLAN?

A. No. The level of PSO's wind energy purchases is largely independent of the Company's decisions with regard to future operations of its coal-fired generating units. PSO's economic analysis indicates that the wind energy purchases under these new contracts will displace very little of the energy produced from the Company's coal-fired plants. Therefore, whether PSO prematurely retires its Northeastern coal-fired generating units as the Company proposes to do under terms of its settlement with EPA, or whether it continues to operate its coal-fired units, the Wind Energy Contracts would provide essentially the same benefits to PSO's customers.

Q. WOULD IT BENEFIT PSO'S CUSTOMERS IF THE COMPANY PURCHASED ADDITIONAL WIND ENERGY AT THIS TIME?

A. Yes, it appears so. While PSO should be commended for increasing the level of its planned wind energy purchases to 599 MW in response to the attractive pricing received from wind suppliers, PSO's own economic analysis indicates that higher levels of wind purchases would be expected to produce even greater energy savings for its customers. PSO received bids for 2,300 MW of wind energy, and most of the wind energy bids that were rejected by PSO were for wind projects located in Oklahoma and directly interconnected with OG&E's transmission system. Moreover, most of the bids rejected by PSO had pricing terms that were only slightly higher than the selected wind contracts. The primary reason cited by PSO for rejecting these other proposals was the higher pricing terms when compared to the selected bids.

Q. HAS PSO EVALUATED WHETHER A HIGHER LEVEL OF WIND ENERGY COULD BE PURCHASED WITHOUT CAUSING RELIABILITY OR OPERATIONAL PROBLEMS FOR ITS SYSTEM?

A. No. (See Exhibit SN-2.)

Q. IS THERE ANY GUARANTEE THAT WIND ENERGY PRICES IN OKLAHOMA WILL REMAIN AT CURRENT LOW LEVELS?

A. No. The current low level of wind energy prices is contingent upon federal production tax credits that effectively serve to lower the cost of wind energy by nearly $35 per megawatt-hour on a pre-tax basis. (See page 7 of PSO witness Godfrey's direct testimony.) These wind tax credits are currently scheduled to expire at the end of 2013, and there is no guarantee that these tax credits will be renewed. Moreover, it is possible that in the future SPP could modify its cost allocation policies for high voltage lines such that a greater portion of costs will be assigned to parties that directly benefit from wind energy projects served over such lines. For these and other reasons, it would be prudent for Oklahoma's utilities to conduct the appropriate analysis and take other actions necessary in order to take full advantage of the current market conditions that are contributing to the very low wind energy prices reflected in the recent proposals to PSO.

Q. ARE THERE OTHER REASONS WHY OKLAHOMA'S UTILITIES SHOULD CONSIDER ADDITIONAL WIND ENERGY PURCHASES AT THIS TIME?

A. Yes. Oklahoma's utilities are members of SPP. SPP has committed to more than $7 billion of new high voltage transmission investment and approximately $60 million per

year in capital and operating costs to implement SPP's new integrated market, and Oklahoma's share of such costs are expected to exceed $350 million per year according to SPP's most recent estimates. (See Exhibit SN-3) A significant portion of the costs approved by SPP were justified to increase opportunities for PSO and other utilities to access low cost wind energy and other low cost energy resources available in the SPP market. Oklahoma's utilities should maximize this opportunity to take advantage of historically low wind energy prices as a means to offset (and justify) the very high and rising cost of membership in the SPP market.

Moreover, the EPA has proposed regulations upon carbon emissions that would effectively eliminate new coal-fired power plants for the foreseeable future, and is considering future regulations upon carbon emissions from existing fossil-fueled generating plants that could also increase the cost of energy supplied from such plants. For these and other reasons, wind energy and existing coal-fired resources are the only remaining low cost energy resources which could help maintain fuel diversity and provide a long-term hedge against future natural gas price increases that could otherwise have devastating impacts on Oklahoma's consumers and industry. For example, the cost of gas-fired energy under PSO's base case gas price forecast is approximately 2 to 3 times the level of energy prices under the proposed wind energy contracts in 2030. Given these conditions, it would be prudent for PSO and other utilities to take maximum advantage of the significant supply of low cost wind energy that is available in Oklahoma at this time.

IV. COST ALLOCATION

Q: HOW WILL THE WIND CONTRACT COSTS BE ALLOCATED TO THE CUSTOMER CLASSES?

A: According to the Company's response to Data Request OIEC 1-1 (attached hereto as Exhibit SN-4), the wind contract costs will be assigned to PSO's customer classes on a production demand allocator basis and recovered through PSO's fuel adjustment clause (FAC), which is consistent with the cost allocation methodology approved by the Commission in PSO's most recent wind dockets, Order No. 568769 in Cause No. PUD 200900031 and Order No. 580622 in Cause No. PUD 201000092.

Q: DO YOU AGREE WITH THE COMPANY'S ALLOCATION OF THESE COSTS?

A: Yes. The Company's assignment of the wind contract costs on a production demand allocator basis is consistent with prior Commission orders and is the appropriate manner in which to allocate the wind energy costs to PSO's customer classes in my opinion.

V. CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING PSO'S PROPOSED WIND ENERGY PURCHASES.

A. PSO should be commended for increasing its level of planned wind energy purchases in recognition of the low prices it received in response to its renewable power RFP. I recommend that the Commission approve PSO's request for recovery of the cost of the proposed new wind energy contracts through the Company's FAC Rider using PSO's production demand allocator. Furthermore, I recommend that the Commission encourage PSO and other Oklahoma utilities to evaluate the prudence of additional wind energy purchases at this time due to the historically low level of wind energy prices and for other reasons addressed in my testimony. Although potential operational and reliability

impacts of higher level of wind purchases must be carefully evaluated, at the current wind energy price levels, maximizing wind energy purchases appears to be a clear win-win proposition for Oklahoma industry and all other electric consumers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

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RESUME OF DON SCOTT NORWOOD

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SUMMARY

Scott Norwood is an energy consultant with over 30 years of experience in electric utility regulatory consulting, resource planning and energy procurement. His clients include government agencies, publicly-owned utilities, public service commissions, municipalities and various electric consumer interests. Mr. Norwood has presented expert testimony on electric restructuring, resource planning and ratemaking issues in 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

Energy Planning and Procurement Services

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.

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.

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.

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.

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.

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.

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 1994 and 1995 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.

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.

Quantifying Potentially Stranded Costs: Modeling and Policy Issues, 1996 NASUCA Annual Meeting.

TESTIMONY OF DON SCOTT NORWOOD
SINCE 2003

FILING DATE	REGULATORY AGENCY/COURT	DOCKET/CASE	UTILITY APPLICANT	ISSUES
01/27/03	Texas Public Utility Commission	26186	Southwestern Public Service Company (Direct)	Reasonableness of Reconcilable Fuel and Purchased Power Expenses for 24 month Reconciliation Period Reasonableness of Proposed Increase to PTB Fuel Factor and the Reasonableness of Rate Case Expenses
02/10/03	Texas Public Utility Commission	27320	Reliant Energy Retail Services, LLC (Direct)	
04/09/03	Texas Public Utility Commission	27035	Central Power and Light Company (Direct)	Reasonableness of CPL's Request to Reconcile Fuel Costs
04/10/03	Texas Public Utility Commission	26194	El Paso Electric Company (Direct)	Reasonableness of EPE's Request to Reconcile Fuel Costs
06/26/03	Texas Public Utility Commission	27956	Reliant Energy, and Retail Services, LCC (Direct)	Reasonableness of Reliant's Proposal to Increase PTB Fuel Factors
07/07/03	Public Service Commission of Wisconsin	05-CE-130	Wisconsin Electric Power Company (Direct)	Reasonableness of Input Assumptions and Results of Economic Analysis of ERGS
07/18/03	Texas Public Utility Commission	27576	Texas-New Mexico Power Company (Direct)*	Reasonableness of TNMP's Application for Final Reconciliation of Fuel Costs Reasonableness of WTU's Application to Reconcile Eligible Fuel Expenses and Fuel Factor Revenues
08/19/03	Texas Public Utility Commission	26000	West Texas Utilities Company (Remand Direct)	
08/26/03	Public Service Commission of Wisconsin	05-CE-130	Wisconsin Electric Power Company (Rebuttal)	Reasonableness of FEIS Economic Analysis of ERGS
08/26/03	Public Service Commission of Wisconsin	05-CE-130	Wisconsin Electric Power Company (Surrebuttal)	Reasonableness of Input Assumptions and Results of Economic Analysis of ERGS
09/05/03	State Corporation Commission of Virginia	PUE-2003-00285	Virgnia Electric and Power Company (Direct)	Reasonableness of VEPCO's natural gas, coal, and purchased energy price forecasts underlying the Company's Fuel Factor Proposal Reasonableness of Estimated Costs and Benefits under a Joint Operating Agreement
10/28/03	Texas Public Utility Commission	26195	Texas Genco and CenterPoint Energy (Refiled Direct)	
11/05/03	Texas Public Utility Commission	28045	Southwestern Public Service Company (Direct)	Reasonableness of SWEPCO's Application for Reconciliation of Fuel Costs
12/12/03	Michigan Public Service Commission	U-13808	The Detroit Edison Company (Direct)	Analysis and Recommendations regarding DECO's proposed 2004 PSCR Plan applications and PSCR factor
02/27/04	Oklahoma Corporation Commission	PUD 200400004	Oklahoma Gas and Electric (Direct)	Request for Approval of McClain PPA
03/26/04	Michigan Public Service Commission	U-13808	The Detroit Edison Company (Direct)	Rebuttal Testimony Addressing DECO's proposed 2004 PSCR Plan applications and PSCR factor
03/29/04	Texas Public Utility Commission	29206	Texas New Mexico Power Company	Reasonableness of TNMP's Application for Final True-up of Stranded Costs
06/01/04	Texas Public Utility Commission	29526	CenterPoint, TGN, Reliant	Reasonableness of Applicants' Application for Final True-up of Stranded Costs
07/19/04	State of Wisconsin Division of Hearings and Appeals	3-SE-01-41-0005-0019	Wisconsin Electric Power Company	Authority for construction of ERGS facilities in Lake Michigan lakebed. Comparison of environmental, social, capital and operating costs of proposed ERGS SCPC units to IGCC alternatives
07/24/04	State of Wisconsin Division of Hearings and Appeals	IH-04-03	Wisconsin Electric Power Company	WEPCO's failure to conduct a practicable alternatives analysis for wetlands impact of the ERGS.
8/9/04	State of Wisconsin Division of Hearings and Appeals	3-SE-01-41-0005-0019	Wisconsin Electric Power Company	Reasonableness of Applicants' request for interest on claimed stranded costs; contribution of capacity auction true-up to return on stranded costs.
8/18/04	Texas Public Utility Commission	29526	CenterPoint, TGN, Reliant	Reasonableness of Applicants' request for interest on claimed stranded costs; contribution of capacity auction true-up to return on stranded costs.
09/02/04	Texas Public Utility Commission	29526	CenterPoint, TGN, Reliant	Level and cost of capacity included in TCC's summer on-peak block energy purchases
9/10/04	Texas Public Utility Commission	27035	AEP TCC	

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ADJUSTMENT RIDER AND TO RECOVER THE COST OF	)	
THE INDEPENDENT EVALUATOR.	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S FIRST RESPONSE TO OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

Question No. OIEC 12:

Provide any analysis conducted by PSO to assess the maximum level of wind energy which could incorporated into the system from and economic and reliability perspective.

Response No. OIEC 12:

An analysis to assess the maximum level of wind energy which could be incorporated into the system from an economic and reliability perspective has not been conducted. However, in the 2013 Plan Update to the 2012 Integrated Resource Plan document issued on November 15, 2013 the results of two wind sensitivity scenarios are discussed. One wind sensitivity incorporated an additional 400 MW of wind capacity into the PSO system and the second wind sensitivity incorporated an additional 800 MW of wind capacity into the PSO system. Please see the response to AG 1-2 for the workpapers associated with those two sensitivity analyses.

By providing this data request response, the person responding certifies the information provided to the Public Utility Division is accurate and complete and contains no material misrepresentation or omission to the knowledge of the respondent to the data request. Pursuant to Oklahoma Corporation Commission Rule 165:5-11-1(e)(7), the respondent shall immediately supplement this response as required and for any matters discovered which would materially affect the accuracy or completeness of the information.

Data Request Respondent's Name:	Mark A. Becker
Respondent's Phone Number:	918-599-2119
Date Response Provided:	December 03, 2013

Cost Allocation Forecast of New Facilities' ATRR for the RTWG Meeting on June 27, 2012

UPDATED POSTING MATERIALS JUNE 25, 2012

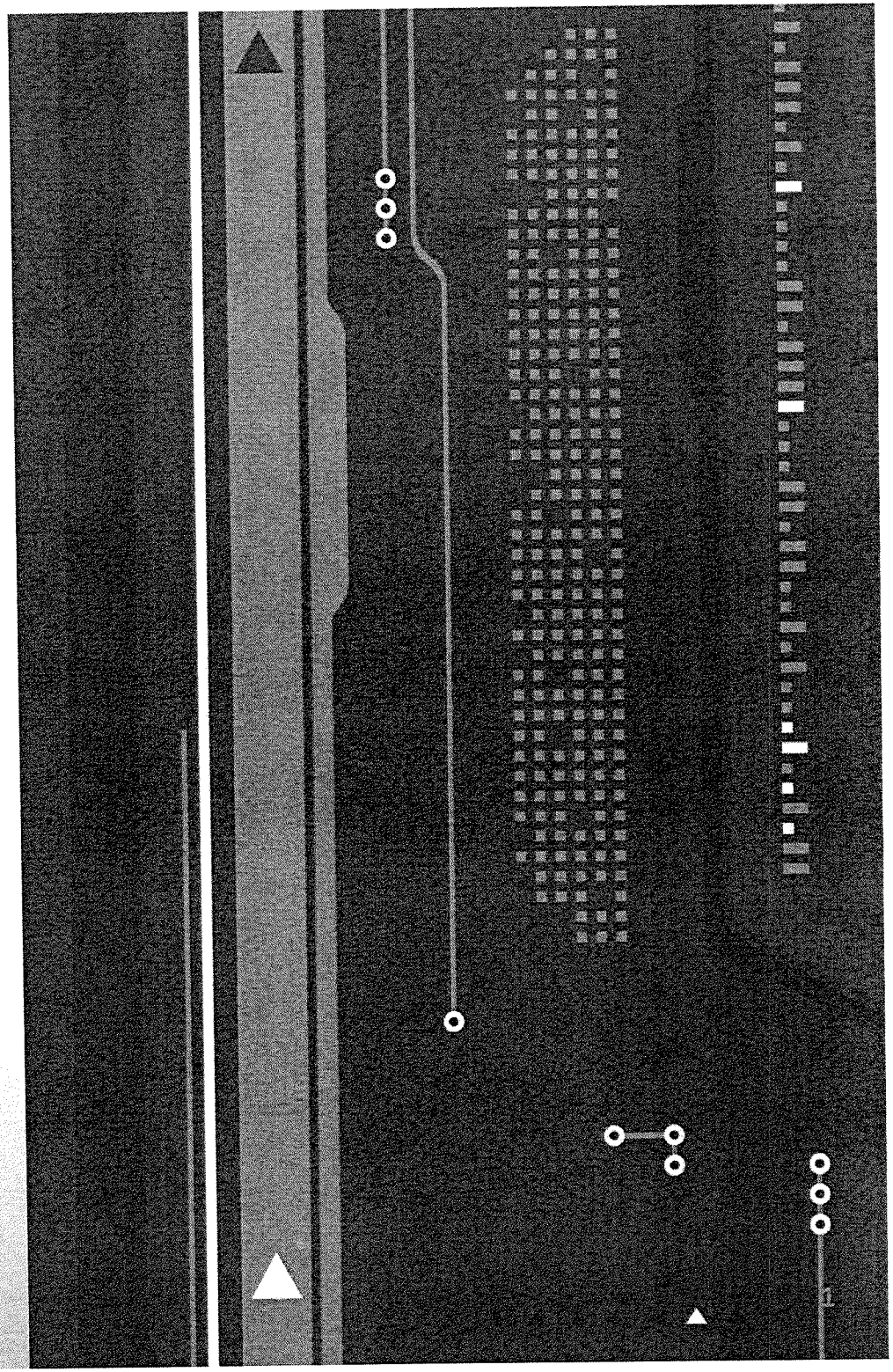
Dan Jones

SPP Regulatory

djones@spp.org

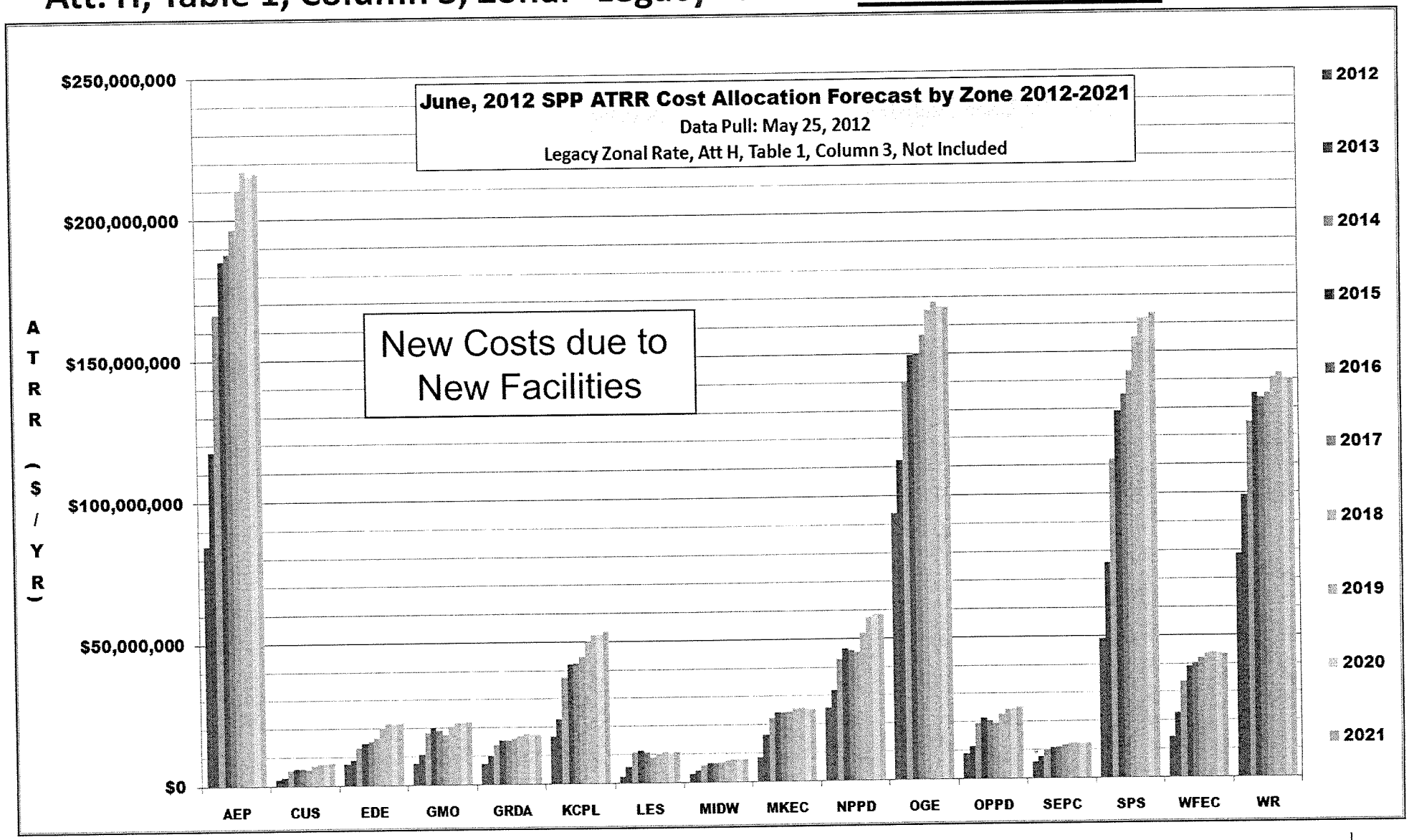
501-688-1717

SPP Southwest Power Pool



June, 2012 Forecast Results by Year by Zone

Att. H, Table 1, Column 3, Zonal "Legacy" Rate is ***NOT INCLUDED***



BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY ("PSO")	)	
TO RECOVER ALL COSTS INCURRED FROM THREE WIND	)	
POWER RESOURCE CONTRACTS THROUGH THE FUEL	)	CAUSE NO.PUD201300188
ADJUSTMENT RIDER AND TO RECOVER THE COST OF	)	
THE INDEPENDENT EVALUATOR.	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S FIRST RESPONSE TO OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

Question No. OIEC 1:

Please provide an explanation of how the purchased power costs from the three contracts will be allocated to the service levels and customer classes.

Response No. OIEC 1:

The costs will be assigned on a production demand allocator basis which is consistent with the orders issued in PSO's most recent wind REPA dockets (Cause No. PUD 200900031, Order #568769 and PUD 201000092, Order #580622).

By providing this data request response, the person responding certifies the information provided to the Public Utility Division is accurate and complete and contains no material misrepresentation or omission to the knowledge of the respondent to the data request. Pursuant to Oklahoma Corporation Commission Rule 165:5-11-1(e)(7), the respondent shall immediately supplement this response as required and for any matters discovered which would materially affect the accuracy or completeness of the information.

Data Request Respondent's Name:	Emily C. Shuart
Respondent's Phone Number:	405-841-1311
Date Response Provided:	December 03, 2013