BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF	**)**	
PUBLIC SERVICE COMPANY OF COLORADO	**)**	**DOCKET NO. 11A-869E**
FOR APPROVAL OF ITS 2011 ELECTRIC	**)**	
RESOURCE PLAN	**)**	

SUPPLEMENTAL DIRECT TESTIMONY OF KURTIS J. HAEGER

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

February 13, 2012

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SUPPLEMENTAL DIRECT TESTIMONY OF KURTIS J. HAEGER

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Kurtis J. Haeger. 1800 Larimer Street, Denver, Colorado 80202.

Q. ARE YOU THE SAME KURTIS J. HAEGER WHO PROVIDED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the Public Service Company of Colorado ("Public Service" or "Company").

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. The purpose of my supplemental direct testimony is to provide additional clarity as to how the Company will evaluate self-build alternatives in comparison to bids submitted in the All-Source Solicitation. In doing so, I will be guided, in part, by comments submitted by Southwest Generation ("SWG") and the "joint respondents," Colorado Independent Energy Association

("CIEA"), Colorado Energy Consumers ("CEC"), and Thermo Power and Electric LLC ("Thermo"), regarding the Company's proposed Phase 2 evaluation process of the 2011 Electric Resource Plan ("2011 ERP"). I will also provide additional information regarding the Company's use of the "four-source" blend gas price forecast and the use of gas price sensitivities to test the robustness of the portfolios that will be developed in the Phase 2 competitive solicitation and bid evaluation process. In addition to my supplemental direct testimony, Mr. Greg Ford will provide supplemental direct testimony regarding the Company's track record on constructing new gas-fired generation while staying within the proposed budget. He will also counter the claims made by CIEA that "PSCo has a long history of unrealistically low estimates and subsequent overruns." Mr. John Welch will introduce the Company's Winter Generation Adequacy Study and Report. Mr. Jim Hill will demonstrate how the results of the Winter Generation Adequacy Study will be factored into the Company's Phase 2 bid evaluation process. Mr. Chris Haworth will also provide supplemental direct testimony on the current state of, and possible future changes to, the accounting standards relating to Power Purchase Agreements ("PPA") and the potential financial impacts of these accounting standards.

II. EVALUATING COMPANY SELF-BUILD PROPOSALS AND POWER PURCHASE AGREEMENT BIDS

Q. PLEASE SUMMARIZE THE COMPANY'S RESOURCE ACQUISITION STRATEGY IDENTIFIED IN THE 2011 ERP.

A. In its 2011 ERP the Company explained that we are in a period of great uncertainty when it comes to long-term fuel cost estimates, new environmental regulations, technological advancements and their impact on the cost of alternative sources of generation, and overall future generation needs. In addition, the Company stated that we believe there are adequate existing generation resources to fulfill the Company's 292 MW projected 2018 resource need and that we intend to only offer self build alternatives as a means to insure adequate competitiveness among these existing generators. Also to facilitate greater competition in the current over-supplied generation market, Public Service is proposing that existing generators can also compete against the continued operation of Arapahoe 4 and Cherokee 4 on natural gas. As a result, the Company is proposing an acquisition strategy and evaluation process that has the potential to maximize the utilization of the existing generation resources in the region while also maintaining maximum flexibility to respond to the numerous uncertainties confronting the Company. In contrast to the comments of CIEA that Public Service intends to "run the table" by selecting only Company-owned resources, the 2011 ERP clearly identifies just the opposite. The Company's proposed resource acquisition process is intended to capitalize on the fact that both the Company and the

current Independent Power Producers ("IPP") have existing generation resources which have been in service for a significant period of time and that the IPP facilities have already completed at least one PPA cycle with the Company. Utilizing these existing generation resources should provide the Company the opportunity to acquire the necessary resources at a price that is lower than developing a new greenfield generation project.

Q. PLEASE SUMMARIZE HOW THE COMPANY INTENDS TO EVALUATE SELF-BUILD PROPOSALS AND OTHER BIDS OFFERED THROUGH THE PHASE 2 COMPETITIVE SOLICITATION PROCESS.

A. To begin, all self-build proposals offered by the Company will be submitted to Public Service's Resource Planning Department in a sealed package on the day before the official bid submittal date. The Company's self-build proposals will remain sealed until all of the competing bids have been received.

The Company's comparison of self-build proposals and other proposals (that pass eligibility and economic screening) will focus on the pricing and performance attributes of the power supplies being proposed. Pricing attributes include facility construction costs, capacity payments, transmission interconnection and delivery related costs, and certain O&M costs. Performance attributes include heat rate, unit availability, fuel costs and certain O&M costs. The Company describes in our 2011 ERP a structured process for performing this evaluation. Public Service will apply the evaluation process, including costs, etc., equally to all utility ownership alternatives and to all other bids offered in the acquisition process.

The Company is also proposing to evaluate both our self-build proposals and other proposals at their proposed cost. As discussed in Volume 2 of the 2011 ERP, Page 2-328, Company proposals will be represented to include the same power supply related costs and/or benefits as those applied to bids made by other parties. Public Service is not proposing to apply any risk adjustments to either utility-owned generation alternatives or to other bid proposals.

Q. CAN YOU PROVIDE A LITTLE MORE INSIGHT AS TO WHY THE COMPANY IS NOT PROPOSING TO RISK ADJUST THE VARIOUS GENERATION PROPOSALS AND ALTERNATIVES?

A. Yes, when looking at the likely pool of generation alternatives, all of them present some form of risk. This risk can present itself in the form of performance risk associated with the construction of new alternatives, operational risk for existing and new assets and their performance on critical operational days, cost risk associated with cost estimates, future replacement cost risk at the end of a PPA, financial risks associated with accounting rules relating to PPAs, and risk associated with key model inputs and assumptions. In contrast to CIEA's suggestion that only utility-owned alternatives have risk, all alternatives that will be considered have some form of risk. I have outlined in Table 1 some of the various risks that are inherent in the pool of expected proposals that may compete to meet the Company's resource needs through 2018.

Table KJH-1 Risks of Generation Alternatives

Power Purchase Agreement Risks	Utility Ownership Risks
Performance	Accuracy of cost estimate
Operations on critical days	Operations
Replacement cost at the end PPA	Future financing costs
Finance/Accounting treatment of PPA	

Q. PLEASE DESCRIBE THE RISKS ASSOCIATED WITH PPAS AND HOW PUBLIC SERVICE INTENDS TO INCORPORATE THOSE RISKS INTO THE EVALUATION PROCESS?

A. As listed in Table KJH-1, all generation options have risks. For PPA options, there is the risk of performance associated with constructing the project on time, the operational risk of being available on days the system needs the generation the most, the risk associated with the replacement cost estimates when the PPA reaches the end of the term (re-contracting), and the financial/accounting risk associated with the possible accounting treatment of PPAs. To reduce the risks associated with the performance and operational risks, the Company has included security deposits and other conditions in the PPAs to help manage those risks. In regards to the risk associated with the accuracy of the cost estimate related to the re-contracting of the IPP or the replacement of the generation at the end of the term of the PPA, the Company uses our best forecast of future market costs in our evaluation. For the financial/accounting issues related to imputed debt and capital lease

accounting, as described more fully by Public Service Witness Chris Haworth, the Company is not proposing to make any adjustments in the bid evaluation process so long as the accounting standards remain as they are today.

Q. PLEASE DESCRIBE WHY THE COST OF RECONTRACTING OR REPLACING THE GENERATION AT THE END OF THE TERM OF THE PPA IS A RISK WORTHY OF CONCERN?

A. When Public Service compares a PPA with a 15 or 25 year term, for example, against a utility-owned resource that may last 40 to 50 years, the Company must make assumptions of the cost of replacement generation at the time the PPA is set to expire. Although Public Service makes our best estimate of these future costs, ultimately the customer will bear the actual costs of either a re-contracted PPA with the facility owner or the replacement generation. Similar to the risk associated with the accuracy of the Company's cost estimates of its new generation projects, the customer also bears the risk if future generation costs, at the time of PPA term expiration, are higher than the Company's estimate, or receives the benefit if future generation costs are lower than the Company estimate. Since PPAs offer no protection against the future cost of replacement generation beyond the PPA term, PPAs inherently have more future cost risk in comparison to utility-owned assets that are being depreciated over their 40 to 50 year life.

Q. CAN YOU PROVIDE A LITTLE MORE INSIGHT AS TO WHY THE COMPANY IS NOT PROPOSING TO RISK ADJUST THE VARIOUS GENERATION PROPOSALS AND ALTERNATIVES?

A. Yes, when looking at the expected generation options and the risks presented by those options, Public Service believes that the current track record of both the IPPs and utility-owned options have suggested that including a risk adjustment for either option is not warranted at this time. Simply put, everyone knows that planning resources over a 40 year period includes many assumptions and incorporates numerous risks. When evaluating utility ownership versus bids submitted in the acquisition process, both options come with various risks and the Company has processes in place to manage those risks.

Q. HOW DOES THIS APPROACH COMPARE WITH CIEA'S RECOMMENDATION?

A. In the joint comments presented by CIEA, CEC and Thermo Power Electric LLC, in response to Decision No. C11-1339, although they do not propose the Company should risk adjust any of the IPP proposals, the joint respondents suggest that Public Service should not be able recover any cost above the Company's estimated or "bid" cost. In effect, the joint respondents are recommending that the Company be held to a cap on the amount of cost that we can recover through rates. In making their argument they suggest that ratepayer cost exposure is capped when a PPA is selected and applying a cost cap to a Public Service proposal amounts to a similar level of protection for ratepayers.

Q. DO YOU AGREE WITH THE JOINT RESPONDENTS' SUGGESTION THAT A RATE CAP IS NECESSARY TO DISCIPLINE PUBLIC SERVICE'S COST ESTIMATING PRACTICE?

A. No. First of all, the joint respondents do not address the fact that if the actual cost of generation comes in *lower* than the Company's cost estimate, customers get to keep this benefit under a Company-owned option. With a PPA, if the project costs end up being less than the cost assumed by the IPP developer in setting the bid price, the IPP owner gets to keep the benefit. The joint respondents also don't point out that the evaluation and cost recovery methodology proposed by the Company allows for symmetrical treatment of costs and benefits under both the PPA and utility ownership option. In a PPA option, the developer gets to keep the benefits, or must pay for the additional costs if the project comes in below or above their original bid price. Similarly, customers get to keep the benefit if the Company's actual cost is less than the original estimate, and may be asked to pay the incremental cost if the prudently-incurred costs of the Company-owned resource are greater than the original estimate.

Q. DOES THE COMPANY GET TO AUTOMATICALLY RECOVER ANY COSTS THAT ARE ABOVE THE ORIGINAL COST ESTIMATE?

A. No, the Company must request recovery of these costs and must demonstrate the prudency of those additional costs. Again, there is a process in place to ensure the risk associated with the Company's cost estimating activity is managed in a way to protect customers.

Q. ARE THE JOINT REPONDENTS CORRECT WHEN THEY STATE THAT PUBLIC SERVICE HAS A LONG HISTORY OF UNDER-ESTIMATING PROJECTS AND THEN REQUIRING RATEPAYERS TO PICK UP THE COST OVERRUNS?

A. No, as demonstrated by Public Service witness Greg Ford, the Company has routinely demonstrated the ability to bring gas-fired generation projects in on time and under budget.

Q. WHAT IS YOUR RESPONSE TO THE JOINT RESPONDENTS' CRITICISM OF THE COMPANY'S COST ESTIMATES ASSOCIATED WITH COMANCHE 3 AND THE CLEAN AIR-CLEAN JOBS ACT PROJECTS?

A. Greg Ford will briefly discuss the cost estimates and construction costs for Comanche 3 and the Clean Air-Clean Jobs Act ("CACJA") projects in his testimony. Public Service believes that it is premature to discuss the Company's performance on the CACJA projects as none of the projects have been completed. Concerning Comanche 3, while the construction of this vital baseload resource was completed very nearly at estimated cost, the Company is not contemplating offering to construct any new coal plants in this proceeding. Thus I believe that neither Comanche 3 nor the CACJA projects provide meaningful metrics by which to gauge whether the Company has routinely demonstrated the ability to bring gas-fired generation projects in on time and under budget.

Q. HAS THE ISSUE OF EVALUATING UTILITY-OWNED PROJECTS AT THEIR EXPECTED COST BEEN A SIGNIFICANT ISSUE IN PAST RESOURCE PLANS?

A. No. Public Service is proposing to use the same bid evaluation methodology in this resource plan proceeding that has been approved by the Commission in all prior resource plan proceedings. In addition, to ensure a fair and equitable evaluation of all generation alternatives, the Commission will employ an Independent Evaluator ("IE") who will review the evaluation the Company performs of Company self-build proposals and the IPP bids. The IE will alert the Commission of any concerns with respect to the fairness of the evaluation process.

Q. WHAT IS YOUR OVERALL RECOMMENDATION TO THE COMMISSION CONCERNING RISK ADJUSTMENTS TO GENERATION PROPOSALS AND COST CAPS?

A. Since all bids include risk, the methodology proposed in this resource plan is the same as the methodology that has been approved in all other resource plan proceedings, there has not been significant issues with the evaluation of utility-owned projects relative to PPAs in the past, and the Commission will employ an Independent Evaluator to oversee the evaluation process, there does not appear to be a compelling reason for the Commission to deviate from the Company's proposed evaluation process that has worked well in the past.

III. GAS PRICE FORECAST AND THE USE OF SCENARIOS AND SENSITIVITIES

Q. PLEASE PROVIDE A BRIEF HISTORY ON HOW THE COMPANY CAME TO USE ITS CURRENT METHODOLOGY FOR DEVELOPING A GAS PRICE FORECAST AND ASSOCIATED SENSITIVITIES.

A. Over the past ten years, there has been continuing debate as to what is the appropriate natural gas forecast to use in resource evaluations. Over this period, the Commission has been provided a number of opinions by various parties as to whether the Company should utilize: a single independent forecast from a public source such as the Energy Information Administration ("EIA"); a gas price forecast from an individual intervening party; a New York Mercantile Exchange ("NYMEX") quote; or, a combination of the above. Through these debates, the Company has proposed, and the Commission has approved the use of a long-term natural gas price forecast, comprised of a combination of four different forecast sources (the current blend being forecasts from Wood Mackenzie Research and Consulting, PIRA, IHS CERA and a NYMEX market quote). By not relying on one single source and also realizing that the forecast blend will stay more constant over the months that a resource plan proceeding will be conducted, the use of this methodology appears to have minimized individual biases while providing a reasonable basis for the Company's evaluation and decision making process.

For resource planning processes gas price sensitivity analyses have been used to examine the robustness of the alternative resource plans, i.e., to

test if significant changes in the selected resource portfolios result when gas price assumptions are changed. The disagreements concerning the testing of resource portfolios against various sensitivities always tend to be derived from a party's particular advocacy. Over the years, the Company has used a sensitivity of increasing and decreasing gas costs by $1, $2 or even $3 per MMBtu or by one or two standard deviations. Unfortunately, the issue has proved fertile ground for advocacy and debate as there does not appear to be a magic answer for what is the appropriate range or the appropriate methodology that should be used to develop the range. Many statistical approaches utilize historical values to predict future price levels and or price ranges. As we have witnessed over the last 15 years, basing forecasting methodologies on historical pricing is not a very good method of analyzing future price trends.

Q. WHAT DOES THE COMPANY RECOMMEND AS THE APPROPRIATE METHOD FOR DETERMINING THE RANGE OF GAS PRICES FOR THE RESOURCE PLANNING ANALYSIS?

A. Since the goal of the sensitivity analysis is to determine the inflection point when a change in a certain assumption materially affects the outcome, I think we have a fair amount of flexibility in selecting the appropriate range of assumptions. The key to making this selection is the degree of reasonableness that is provided by the range of the assumption and realizing that we do not want to get into model paralysis by picking too many points to analyze.

Q. WHAT IS THE COMPANY'S VIEW ON USING SCENARIO ANALYSIS INSTEAD OF SENSITIVITY ANALYSIS?

A. Again, over the last ten years, getting the parties in the resource planning dockets to even agree on a gas pricing methodology has been difficult. Getting these parties to agree to a complete set of assumptions including energy pricing, econometric drivers, emissions and emission requirements, lifestyle patterns, technological advancements etc. that would be necessary to truly develop a full blown scenario would likely be impossible. Public Service suggests that if the Commission wanted to expand the sensitivity analysis to scenario analysis, the Company should investigate acquiring fully developed scenarios from one of the professional forecasting firms that offer this type of service. Unfortunately these services generally provide their services on a confidential basis to the subscribing party, as is the case with the gas forecast. Yet, this appears to be the only efficient and cost-effective way to obtain a fully developed set of scenarios. To minimize the cost impact and to test the value of incurring such cost and investment in time, the Commission may want to look at a pilot project that could test these issues over the next couple of years and report back to the Commission in time for the next resource plan filing.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.