

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO**

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

**SUPPLEMENTAL DIRECT TESTIMONY OF JAMES F. HILL**

**ON**

**BEHALF OF**

**PUBLIC SERVICE COMPANY OF COLORADO**

**February 13, 2012**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO**

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<b>IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2011 ELECTRIC RESOURCE PLAN</b>	) ) ) ) )	<b>DOCKET NO. 11A-869E</b>
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**SUPPLEMENTAL DIRECT TESTIMONY OF JAMES F. HILL**

**I.     INTRODUCTION**

**Q.     PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A.     James F. Hill. 1800 Larimer Street, Denver, Colorado 80202.

**Q.     ARE YOU THE SAME JAMES F. HILL WHO PROVIDED DIRECT TESTIMONY  
IN THIS PROCEEDING?**

A.     Yes.

**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.     To explain how the Company intends to factor the results of the Winter  
Generation Adequacy Study ("Study") into the Phase 2 bid evaluation process.  
The Study is provided in the Supplemental Direct Testimony of Company witness  
John Welch.

1                                   **II.   SUMMARY OF WINTER STUDY RESULTS**

2   **Q.    CAN YOU PLEASE SUMMARIZE THE STUDY AND ITS RESULTS?**

3   A.    Yes. The Study assessed whether the Public Service electric power supply  
4        system will have sufficient generation with firm fuel supplies such that the  
5        system could absorb an outage of the entire Comanche 3 unit<sup>1</sup> and Pawnee  
6        available at half its full capability and continue to maintain sufficient operating  
7        reserves while serving winter peak electric demand. The study assessed the  
8        sufficiency of firm fueled generation for each year starting in 2012 and ending in  
9        2022.

10           The study results show that the existing Public Service electric power  
11        supply system should have sufficient firm fueled generation through December  
12        2017 to absorb the Comanche 3 and Pawnee contingencies noted above and  
13        still maintain sufficient operating reserves. Starting in December 2018 however,  
14        Public Service will likely need to secure additional firm fuel supplies sufficient to  
15        power about 243 MW of gas-fired generation. The study also showed that for  
16        years 2019 through 2022 Public Service will likely need to acquire additional  
17        amounts of firm fuel supplies (above the 243 MW needed in 2018).

18                                   **III.   WINTER STUDY RESULTS AND PHASE 2 BID EVALUATION**

19   **Q.    PLEASE EXPLAIN HOW THE COMPANY WILL FACTOR THE RESULTS OF**  
20   **THE STUDY IN THE EVALUATION OF BIDS?**

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<sup>1</sup> The Comanche 3 unit represents the largest single contingency event for the Public Service system.

1 A. Before receipt of bids in the Phase 2 process, the Company will develop a plan  
2 for firming up the fuel supply for approximately 243 MW of existing gas-fired  
3 generating units. Existing units (both owned and purchased) that have book lives  
4 or PPA terms that extend through 2022 and do not currently have a firm fuel  
5 supply will be considered for inclusion in this plan. This effort will produce what I  
6 call the “Baseline Firming Plan”. During the evaluation of bids in Phase 2, the  
7 Company will assess whether a lower cost firming plan for the ~243 MW can be  
8 developed from the pool of gas-fired generation bids.

9 **Q. HOW WILL THE COMPANY ASSESS WHETHER A LOWER COST FIRMING**  
10 **PLAN CAN BE DEVELOPED FROM GAS-BIDS IN PHASE 2?**

11 A. In the Phase 2 process of screening gas-bids, a levelized energy cost (“LEC”) will  
12 be developed for each gas-bid from the bid pool both with and without the cost of  
13 supplying firm fuel supply to the associated generating facility. The primary  
14 screen that will be used to determine which gas-bids to move forward to  
15 computer modeling<sup>2</sup> will be based on a ranking of bid LEC’s that do not include  
16 firm fuel supply charges. A second screen of the entire pool of gas-bids will be  
17 done using LEC’s that contain the cost of providing a firm fuel supply. Bids from  
18 this second screening that rank ahead of bids moved forward in the primary  
19 screen will also be advanced to computer modeling. Figure JFH-1 provides an  
20 illustration of how this will work. All values in Figure JFH-1 are for illustration  
21 purposes only.

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<sup>2</sup> Bids are advanced to computer modeling for purposes of developing portfolios to meet the RAP generation capacity needs

Figure JFH-1.

Primary Screen - LEC Ranking Without Firm Fuel Supply

Bid No.	LEC (\$/MWh)	Rank	
C	\$ 85	1	Bids advanced to computer modeling
G	\$ 88	2	
A	\$ 91	3	
E	\$ 93	4	
D	\$ 95	5	
F	\$ 98	6	
B	\$ 100	7	
H	\$ 105	8	
I	\$ 107	9	

Secondary Screen - LEC Ranking With Firm Fuel Supply

Bid No.	LEC (\$/MWh)	Rank	
C	\$ 90	1	Bids advanced to computer modeling
A	\$ 98	2	
B	\$ 102	3	
F	\$ 103	4	
E	\$ 104	5	
G	\$ 106	6	
D	\$ 110	7	
I	\$ 121	8	
H	\$ 123	9	

In this example gas-bids C, G, A, E and D would be identified for advancement to computer modeling based on the primary screen LEC ranking without firm fuel supply costs. The secondary screening of gas-bids based on LEC that include firm fuel supply costs shows that bids B and F rank above bids E, D and G. As a result bids B and F will also be advanced to computer modeling. In total, bids C, G, A, E, D, B, and F are advanced to computer modeling per the example.

**Q. HOW WILL THE COMPANY ESTIMATE THE COST FOR PROVIDING FIRM FUEL SUPPLY TO THE GAS-BIDS?**

A. The Company's Gas Planning department will provide estimates for firm natural gas supply on a bid-by-bid basis. To the extent a bidder believes that fuel-oil back up is a feasible option for their facility, they will provide that information (along with a cost estimate for this option) in their bid.

1 **Q. PLEASE EXPLAIN HOW THE COMPUTER MODELING OF GAS-BIDS WILL**  
2 **BE DONE AND HOW THE COMPANY WILL ASSESS WHETHER A LOWER**  
3 **COST FIRING PLAN CAN BE CONSTRUCTED FROM BIDS.**

4 A. Within the computer model used to develop portfolios that meet the Resource  
5 Acquisition Period's ("RAP") capacity needs<sup>3</sup> (in accordance with the  
6 Commission's Phase 1 decision) the gas-bids advanced to modeling will be  
7 represented without the cost of firm fuel supply. Using this model, portfolios will  
8 be developed from the entire pool of bids that were advanced to modeling (both  
9 gas-bids and non gas-bids) and ranked according to their present value of  
10 revenue requirements ("PVRR") over the 2011-2050 Planning Period. The lower  
11 PVRR cost portfolios will then be evaluated to determine whether any gas-bids  
12 contained in these portfolios can provide all or a portion of the required 243 MW  
13 fuel firming for less cost than the cost included in the Baseline Firming Plan. In  
14 essence, through this process the Company will be attempting to identify  
15 portfolios that meet both the RAP capacity needs and the ~243 MW of fuel  
16 firming at the lowest overall cost.

17 **Q. WHAT IF BIDS WITH LOW FUEL FIRING COSTS DO NOT SHOW UP IN**  
18 **THE LOWER PVRR COST PORTFOLIOS THAT GET SELECTED FOR**  
19 **EVALUATION? FOR INSTANCE, USING THE EXAMPLE ABOVE, WHAT IF**  
20 **THE LOWER COST PORTFOLIOS DO NOT INCLUDE BIDS B AND F?**

21 A. If each of the gas-bids advanced to modeling do not show up in at least one of  
22 the lower cost portfolios, the Company will identify additional portfolios such that

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<sup>3</sup> Table 1.4-2 of ERP Volume 1 identifies the Company's current projection of the need for additional generation capacity during the RAP.

1 all of the advanced gas-bids are represented. These portfolios will then be  
2 evaluated as a possible alternative to the Baseline Firming Plan.

3 **Q. DOES THIS APPROACH PREVENT GAS-BIDS WITH HIGH FUEL FIRING**  
4 **COSTS FROM BEING DISADVANTAGED IN THE PHASE 2 EVALUATION**  
5 **PROCESS?**

6 A. Yes. Gas-bids that have high fuel firming costs can still be included in a low cost  
7 portfolio with a non-firm fuel supply if their bid pricing (\$/kW-mo capacity price,  
8 tolling charge, and start costs) are cost competitive with other bids.

9 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

10 A. Yes.