BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

Docket No. 10M-245E

IN THE MATTER OF COMMISSION CONSIDERATION OF PUBLIC SERVICE COMPANY OF COLORADO PLAN IN COMPLIANCE WITH HOUSE BILL 10-1365, "CLEAN AIR-CLEAN JOBS ACT."

APPLICATION FOR REHEARING REARGUMENT OR

RECONSIDERAION OF

C10-1328

BY

LESLIE GLUSTROM

JANUARY 4, 2011

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Ms. Leslie Glustrom, an Xcel rate payer and a party in this Docket, files this Application for Rehearing, Reargument or Reconsideration ("RRR") of C10-1328 in the above captioned docket related to Commission Consideration of Public Service Company of Colorado ("PSCo" or "Xcel") Plan in Compliance with House Bill 10-1365, "Clean Air-Clean Jobs" Act. C10-1328 was mailed on December 15, 2010. Applications for RRR are due on January 4, 2011.

I. SUMMARY

This docket has focused extensive attention on the various choices for the Denver metro coal plants, Arapahoe and Cherokee, with numerous options modeled and discussed in great detail.

In contrast, essentially no time has been devoted to considering the options for the Pawnee and Hayden plants that were also included by Xcel in their Clean Air Clean Jobs Emissions Reduction Plan. Xcel's proposal is to add pollution control for these plants (SCR[1] and LSD[2] for Pawnee and SCRs for both Hayden 1 and 2) which are predicted to cost rate payers approximately $370 million.

Before allowing Xcel to spend $370 million which will be paid for by rate payers, it is critical that the Commission provide an opportunity to fully examine the wisdom of making these expenditures and to ensure that the investment will not become "stranded" before the projected lives of the Pawnee and Hayden 1 and 2 coal plants are reached in 2041, 2025 and 2036 respectively.

In addition, the Commission gave essentially no consideration to the excess capacity on Xcel's system and the opportunity that excess capacity provides for retiring

[1] SCR refers to "Selective Catalytic Reduction" technology for control of nitrogen oxides ("NOx").
[2] LSD refers to "Lime Spray Dryer" for control of sulfur dioxide ("SO2").

the Valmont coal plant before 2017. The Commission should direct Xcel to explore options for Valmont and convert it to natural gas at the earliest possible time while examining options for retirement of Valmont before the end of 2017.

Finally, Xcel is asking for approval to make significant investments in order to manage power factor and MVAR issues on its system, but has not conducted a study to determine the extent to which power factor and MVAR issues can be addressed on the customer side of the meter and thereby avoiding cross-subsidy of users that create power factor issues by those that don't.

Ms. Glustrom respectfully requests that the Commission modify Decision C10-1038 to ensure a) that all options are analyzed thoroughly before spending $370 million on the Pawnee and Hayden plants, b) that careful consideration is given to all options for earlier fuel switching and/or retirement of the Valmont coal plant and c) that Xcel and the Commission gain a better understanding of the power factor issue and its management in Colorado. Detailed suggestions for changes in Decision C10-1328 that are provided in the Conclusion of this Application for RRR.

II. THE DECISION TO INVEST $236 MILLION IN THE PAWNEE COAL PLANT NEEDS MORE SCRUTINY

Before spending approximately $236.5 million on pollution control for the Pawnee coal plant, the Commission should ensure that a more thorough analysis is conducted before granting final approval through the CPCN process for pollution control at the Pawnee coal plant.

A. The Existing Net Worth of the Pawnee Plant is Approximately $238 Million

According to data provided by Xcel and found in Exhibit LWG-5 with Ms. Glustrom's Answer Testimony (Hearing Exhibit 121), the "Net Plant" value for the Pawnee coal plant as of 12/31/2009 was approximately $238 million. The spreadsheet provided by Xcel from Exhibit LWG-5 (from Hearing Exhibit 121) showing net worth and other data for Xcel's coal plants is included as Attachment 1 to this Application for RRR.

B. The Proposed Pollution Controls on Pawnee Are Expected to Cost Approximately $236.5 Million

The addition of SCR, LSD and mercury sorbent injection system pollution controls to the 505 MW Pawnee coal plant is expected to cost approximately $236.5 million. (See ¶121 in C10-1038 and the Direct Testimony of Xcel witness Greg Ford, Hearing Exhibit 10, page 15, line 8.)

C. The Proposed Pollution Controls Would Approximately Double the Net Worth of the Pawnee Plant

The addition of approximately $236.5 million in pollution controls will approximately double the existing net worth of the Pawnee plant in Xcel's rate base.

D. Almost No Consideration Was Given to the Decision to Invest $236.5 Million in the Pawnee Plant

While there was extensive testimony, analysis and cross-examination related to the various options for the Cherokee units in North Denver, there was very little testimony or analysis related to the various options for the Pawnee and Hayden coal plants.

On page 27 of Xcel's Emission Reduction Plan (also known as KTH-2, Hearing Exhibit 2), it can be seen that the only option for the Hayden plants was the addition of emission controls and that the primary option considered for the Pawnee plant was the addition of emission controls. On page 47 of Xcel's Emission Reduction Plan, the "bolt-on" option of retiring Pawnee by the end of 2017 is described with two possibilities for replacement generation. The replacement generation options were not subject to significant scrutiny or considered in the light of the existence of significant excess capacity on Xcel's system as shown in the updated Loads and Resources table found in Exhibit LWG-40 attached to Hearing Exhibit 216.

Before allowing Xcel to spend approximately $236.5 million on pollution control for the Pawnee coal plant, the Commission should give careful thought to this decision and all possible alternatives.

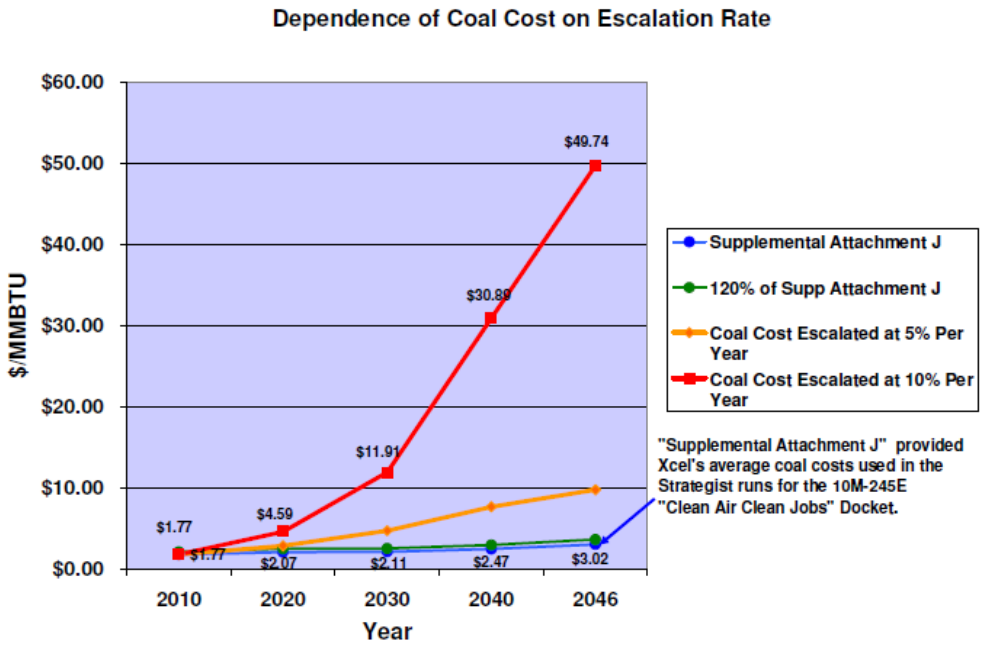
E. Increased Coal Costs Could Lead to Greatly Increased Costs for Ratepayers

Xcel's coal costs have been increasing at a rate above 10% per year since 2005,[3] yet Xcel's modeling in this 10M-245E docket assumed that coal costs would increase at less than 2% per year.[4] The impact of coal cost escalation rates of 5% and 10% per year are shown below in Figure LWG-3 from Ms. Glustrom's Statement of Position.

[3] In 2005, Xcel's average coal cost for its Colorado coal plants was $0.96/MMBTU. In 2009, Xcel's average coal cost for its Colorado plants was $1.52/MMBTU. See Ms. Glustrom's Statement of Position, page 13 and the Hearing Exhibits cited therein.

[4] For graphs and tables showing the impact on coal costs of Xcel's 2% escalation rate per year compared to escalation rates of 5% or 10% per year, see Ms. Glustrom's Statement of Position, pages14-15.

Figure LWG SOP-3
Dependence of Coal Cost on Escalation Rate
(Data from Table LWG SOP-2)



In the case of the Pawnee plant, the impact of using coal cost escalation rates of 5% and 10% per year are shown below in Table LWG-4 taken from Ms. Glustrom's Answer Testimony (Hearing Exhibit 121).

Table LWG-4
An Example of the Potential Impact of Higher Coal Cost Escalation Rates on the Pawnee Coal Plant Costs
(Table reproduced from Ms. Glustrom's Answer Testimony, Hearing Exhibit 121, Pages 10-11)
Pawnee 2009 Coal Costs from Attachment LWG-3 (Hearing Exhibit 121)
All numbers are in millions

	Coal Cost Escalation Rate		
	1.8%/Yr	5%/Yr	10%/Yr
2009	23.55	23.55	23.55
2010	23.9739	24.7275	25.905
2011	24.40543	25.96388	28.4955
2012	24.84473	27.26207	31.34505
2013	25.29193	28.62517	34.47956
2014	25.74719	30.05643	37.92751

2015	26.21064	31.55925	41.72026
2016	26.68243	33.13721	45.89229
2017	27.16271	34.79408	50.48152
2018	27.65164	36.53378	55.52967
2019	28.14937	38.36047	61.08263
2020	28.65606	40.27849	67.1909
2021	29.17187	42.29242	73.90999
2022	29.69696	44.40704	81.30099
Total	371.1949	461.5478	658.8109
Delta to 2022	**0**	**90.35292**	**287.616**
2022	29.69	44.41	81.3
2023	30.22442	46.6305	89.43
2024	30.76846	48.96203	98.373
2025	31.32229	51.41013	108.2103
2026	31.88609	53.98063	119.0313
2027	32.46004	56.67966	130.9345
2028	33.04432	59.51365	144.0279
2029	33.63912	62.48933	158.4307
2030	34.24463	65.6138	174.2738
2031	34.86103	68.89449	191.7011
2032	35.48853	72.33921	210.8713
2033	36.12732	75.95617	231.9584
2034	36.77761	79.75398	255.1542
2035	37.43961	83.74168	280.6696
2036	38.11352	87.92876	308.7366
2037	38.79957	92.3252	339.6103
2038	39.49796	96.94146	373.5713
2039	40.20892	101.7885	410.9284
2040	40.93268	106.878	452.0213
2041	41.66947	112.2219	497.2234
Total	707.1956	1468.459	4656.457
Delta 2022 to 2042	**0**	**761.2634**	**3949.262**

From Table LWG-4 above, it can be seen that using a coal cost escalation factor of 5% per year would add an additional $90 million (for the period from 2009-2022) plus $761 million (for the period from 2022-2042)[5] for a total of approximately $851 million

[5] Upon review, Ms. Glustrom realizes that the increased coal costs for operating Pawnee provided on page 17 of her Statement of Position were only for the 2022-2041 time period and so her Statement of Position understated the increased coal costs that could accompany any decision to operate Pawnee until the year 2041.

in additional coal costs[6] to any decision to keep operating the Pawnee coal plant until the year 2041.

Using coal cost escalation rates of 10% per year would add an additional $287 million (for the 2009-2022 time period) and $3.949 billion (for the period from 2022 to 2041)[7] for a total of $4.236 billion in additional coal costs[8] to any decision to keep operating the Pawnee coal plant until the year 2041.

These increased coal costs are summarized below.

Increased Coal Costs to Operate Pawnee Until 2041

Assuming Coal Cost Escalation Rates of 5% and 10% Per Year

	Assuming 5% Per Year Coal Cost Escalation Rate	Assuming 10% Per Year Coal Cost Escalation Rate
Increased Cost of Coal to Operate the Pawnee Plant to 2041 (Above coal costs calculated using Xcel's 1.8% Per Year Escalation Rate)	**$851 Million**	**$4.2 Billion**

It is clear from the Table above that the cost of coal to operate the Pawnee plant until the expected retirement date of 2041 (See Attachment 1 to this RRR), could add hundreds of millions or even several billion dollars to the costs that have been modeled

[6] The numbers shown in Table 4 include an overlap for the year 2022. This would affect total projected costs of coal but would not have a large impact on the calculated increased costs of coal. The important point is that Xcel's modeling has likely greatly underestimated the cost of operating the Pawnee coal plant until the projected retirement date of 2041.

[7] See Footnote 5.

[8] The numbers shown in Table 4 include an overlap for the year 2022. This would affect total projected costs of coal but would not have a large impact on the calculated increased costs of coal. The important point is that Xcel's modeling has likely greatly underestimated the cost of operating the Pawnee coal plant until the projected retirement date of 2041.

by Xcel. The Commission should examine these issues carefully before allowing Xcel to spend approximately $236.5 million on pollution control for the Pawnee plant. To date, the Commission has not yet conducted such a careful analysis.

F. Xcel's Claim of $600 Million in Savings Has Not Been Carefully Examined and Does Not Use a Reasonable Estimate of Coal Costs

Decision C10-1328 (¶122, pages 43-44) cites Xcel's claim that retiring Pawnee for emission reduction purposes would result in approximately $600 million in increased costs to ratepayers. This claim has not been well explained by Xcel and has not been subject to serious review by the Commission. Moreover, this claim apparently relies on Xcel's assumptions that coal costs will increase less than 2% per year over the next 31 years. As seen from the discussion above, increased coal costs could add hundreds of millions or even billions of dollars to the costs to operate the Pawnee coal plant until 2041.

G. Rate Payers Pay Real Coal Costs, Not Modeled Costs--While Xcel Bears No Risk

As has been clearly demonstrated in this Docket, Xcel has repeatedly underestimated the costs of coal for the last several years—typically assuming that coal costs will escalate at about 2% per year or less while Xcel's Colorado coal costs have increased by more than 10% per year since 2005.[9] Ratepayers, of course, pay real coal costs which are passed through under the Electric Commodity Adjustment, while Xcel bears no risk for the errors in their modeled coal costs. Xcel uses modeling dollars to

[9] Xcel's estimated coal costs and their actual coal costs are described in detail in Ms. Glustrom's Statement of Position, pages 12-18.

justify its decisions to invest in its rate base while rate payers have to pay the full costs of coal (and other operating expenses) in real dollars. It is as if Xcel gets to play this game using Monopoly money, while rate payers have to pay with real money. It is long past time that the Commission recognize the very real rate payer impacts that occur when Xcel underestimates its coal costs—as it has now done through several dockets in recent years.

H. The Eagle Butte Mine That Supports the Pawnee Coal Plant has a Limited Life Span, Large Reclamation Needs and Increasing Production Costs

As discussed at length in Ms. Glustrom's Answer Testimony, the Eagle Butte mine in the Powder River Basin of Wyoming which supports the Pawnee coal plant has a limited life span, large reclamation needs and increasing production costs. All of these issues were thoroughly discussed in Ms. Glustrom's Answer Testimony (Hearing Exhibit 121, pages 13-22) and are likely to lead to increased coal costs in the coming years. The facts surrounding the Eagle Butte mine include:

- The existing mine has an expected life span of less than 10 years.
- The existing mine is only approximately one-quarter reclaimed and the federal Surface Mine Control and Reclamation Act of 1977 ("SMCRA") calls for surface mines to be reclaimed as contemporaneously as possible.
- The expansion area for the Eagle Butte mine will require rerouting a highway and digging down much deeper to reach the coal than in the existing pit. The expansion will add less than 10 years to the expected life of the Eagle Butte mine.

- Future expansions of the Eagle Butte mine will face serious geological, economic and legal constraints as the coal will be increasingly difficult to access and coal mine expansions will likely be more difficult to finance in coming decades.
- In 2008 the sales price for coal from the Eagle Butte and Belle Ayr mines[10] increased 11%, but the production cost from the Eagle Butte and Belle Ayr mines increased 28%.[11] As would be expected, profits plummeted and then in 2009 Foundation Coal sold the Eagle Butte and Belle Ayr mines to Alpha Natural Resources.
- In 2009, Alpha Natural Resources lost over $37 million on the Eagle Butte and Belle Ayr mines.

It is clear from the above data that there is good reason to believe that the price of coal from the Eagle Butte mine is likely to increase in the coming years and decades. Production costs, expansion costs and reclamation costs are all likely to rise in the coming years—and it is highly unlikely that any company will want to continue to mine the coal in the Eagle Butte and Belle Ayr mines if it means the company will be losing tens of millions of dollars to mine the coal. Similar issues face essentially all the major mines in the Powder River Basin. Moreover, as production continues to decline in other coal producing regions of the United States the pressure on the Powder River Basin mines is likely to increase which is also likely to drive coal costs up.[12]

[10] As explained in Ms. Glustrom's Answer Testimony, Hearing Exhibit 121, pages 13-22, the Eagle Butte and Belle Ayr mines are owned by the same company—Alpha Natural Resources, which purchased the mines in mid-2008 from Foundation Coal Company. Ms. Glustrom's Answer Testimony includes extensive information from the Annual Reports of both Foundation Coal and Alpha Natural Resources. The Belle Ayr mine presently supports Xcel's "Comanche" plants in Pueblo, Colorado.
[11] See Ms. Glustrom's Answer Testimony, Hearing Exhibit 121, page 20.
[12] For a detailed discussion of production of coal from the various coal-producing regions of the United States, see Exhibit LWG-6 with Hearing Exhibit 121 and the references cited therein.

While no one can predict the future price of any fossil fuel, the geologic, economic and legal constraints facing future coal mining in the Powder River Basin and other US coal producing regions indicates that future coal costs at the Pawnee coal plant are likely to be increasing significantly.

I. 2009 and 2010 Coal Costs for the Pawnee Plant Show Significant Cost Increases

Data from Hearing Exhibits 165 and 166[13] demonstrate that delivered coal costs at the Pawnee coal plant in 2009 and 2010 (through June) have increased much faster than the less than 2% annual increase used by Xcel in their model runs in this docket.

- Hearing Exhibit 165 shows purchase price of coal for the Pawnee plant for 2009. That data is reproduced below and shows that coal delivered to the Pawnee coal plant in 2009 was ranging in price from $1.05 to $1.34/MMBTU.[14] In comparison, Xcel reported the 2008 cost of coal for the Pawnee plant to be $0.98/MMBTU.[15] Clearly, coal costs for the Pawnee coal plant went up much more than 2% per year between 2008 and 2009.[16]

[13] Hearing Exhibits 165 and 166 present data on delivered coal costs from the Energy Information Administration ("EIA") Form 423 data.
[14] The price of coal delivered to the Pawnee plant shown from the data reproduced from Hearing Exhibit 165 can be seen in the second column from the right and it is presented in cents/MMBTU. That is 111.6 means 111.6 cents/MMBTU or $1.11/MMBTU.
[15] Xcel's 2008 costs of coal for its Colorado coal plants can be found in Exhibit LWG-2 attached to Ms. Glustrom's Answer Testimony, Hearing Exhibit 121.
[16] A 2% increase in the cost of coal from the 2008 cost of $0.98/MMBTU would put the coal cost in the range of $1/MMBTU—not the $1.05 to $1.34 shown in Hearing Exhibit 165. Final determination of coal costs for a year for a coal plant depend on what coal was burned in the plant and the weighted average cost of that coal. There is often a lag between the delivered price of coal and the average cost of coal burned, due to stock piling of coal for later consumption.

2009 Delivered Cost of Coal to the Pawnee Coal Plant in Brush
(Data from EIA Form 423 as presented in Hearing Exhibit 165.)

YEAR	MONTH	PLANT_CODE	PLANT_NAME	PLANT_STATE	CONTRACT_TYP	CONTRACT_EXP_	ENERGY_SOURC	FUEL_GROUP	COALMINE_STATE	COALMINE_NAME	SUPPLIER	QUANTITY	AVG_HEAT_CONTENT	FUEL_COST	OPERATOR NAME
2009	1	469	Cherokee	CO	C	1209	BIT	Coal	CO	ELK CREEK MINE	FOUNDATION COAL	101,320	16.690	161.1	Public Service Co of Colorado
2009	1	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	172,467	16.802	111.6	Public Service Co of Colorado
2009	2	6248	Pawnee	CO	C	1210	SUB	Coal	WY	COAL CREEK MINE	ARCH	129,652	16.670	134.7	Public Service Co of Colorado
2009	2	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	13,974	16.762	126.8	Public Service Co of Colorado
2009	3	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE	FOUNDATION COAL	28,696	16.848	127.4	Public Service Co of Colorado
2009	5	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	56,962	16.710	125.0	Public Service Co of Colorado
2009	5	6248	Pawnee	CO	C	1209	SUB	Coal	WY	BELLE AYR MINE	FOUNDATION COAL	14,266	16.818	124.2	Public Service Co of Colorado
2009	6	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	72,012	16.740	115.9	Public Service Co of Colorado
2009	7	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	56,879	16.820	117.4	Public Service Co of Colorado
2009	8	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	113,997	16.720	112.3	Public Service Co of Colorado
2009	9	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	28,891	16.830	133.5	Public Service Co of Colorado
2009	10	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	172,953	16.820	111.2	Public Service Co of Colorado
2009	11	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	ALPHA COAL	216,544	16.820	105.9	Public Service Co of Colorado
2009	11	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	FOUNDATION COAL	14,452	16.690	115.2	Public Service Co of Colorado
2009	12	6248	Pawnee	CO	C	1209	SUB	Coal	WY	EAGLE BUTTE MINE	ALPHA COAL	153,154	16.780	112.7	Public Service Co of Colorado

- Data on 2010 coal deliveries to the Pawnee plant were provided in Hearing Exhibit 166 with the Pawnee data reproduced (if somewhat "crookedly") below.

Year	Month	Plant ID	Plant Name	State	Contract	Contract	Fuel_Group	CoalMine State	CoalMine_Name	Supplier	Quantity	Average Heat	Fuel_Cost	Operator Name
2010	1	6248	Pawnee	CO	C	1210	Coal	WY	EAGLE BUTTE MINI	ALPHA COAL	251,594	16.770	113.3	Public Service Co of Colorado
2010	2	6248	Pawnee	CO	C	1210	Coal	WY	EAGLE BUTTE MINI	ALPHA COAL	249,084	16.750	113.8	Public Service Co of Colorado
2010	3	6248	Pawnee	CO	C	1210	Coal	WY	EAGLE BUTTE MINI	ALPHA COAL	140,679	16.750	117.5	Public Service Co of Colorado
2010	4	6248	Pawnee	CO	C	1210	Coal	WY	ANTELOPE COAL N	CLOUD PEAK	56,665	17.780	116.8	Public Service Co of Colorado
2010	5	6248	Pawnee	CO	C	1210	Coal-SUB	WY	EAGLE BUTTE MINI	ALPHA COAL	14,164	16.570	190.4	Public Service Co of Colorado
2010	6	6248	Pawnee	CO	C	1210	Coal-SUB	WY	EAGLE BUTTE MINI	ALPHA COAL	45,683	16.630	113.2	Public Service Co of Colorado
2010	6	6248	Pawnee	CO	C	1210	Coal-SUB	WY	EAGLE BUTTE MINI	ALPHA COAL	56,308	16.690	111.9	Public Service Co of Colorado
2010	6	6248	Pawnee	CO	C	1210	Coal-SUB	WY	EAGLE BUTTE MINI	ALPHA COAL	123,388	16.600	140.2	Public Service Co of Colorado

2010 delivered cost of coal (through June 2010) for the Pawnee coal plant ranged from $1.13 to $1.90/MMBTU—again a very substantial increase over the $0.98/MMBTU reported by Xcel for 2008 coal costs—and certainly much more than the less than 2% increase in coal costs that Xcel used for modeling purposes and to justify the expenditure of approximately $236.5 million on pollution controls for the Pawnee coal plant.

[17] The apparent gap in the data on Pawnee coal costs is because the lines came from different pages of Hearing Exhibit 165 and could not be copied and pasted as a single unit.

I. Continued Reliance on Coal Plants Will Reduce Xcel's Ability to Increase Its Reliance on Energy Efficiency and Renewable Energy

As noted in Xcel witness Greg Ford's Direct Testimony, continued reliance on coal fired generation will make it more difficult to improve renewable energy integration. Below is an excerpt from page 18 of Mr. Ford's Direct Testimony.

Excerpt from Page 18, Direct Testimony of
Xcel Witness Greg Ford, Hearing Exhibit 10

Q. HOW WOULD REPLACEMENT OF THE COAL UNITS WITH GAS GENERATION TECHNOLOGY IMPROVE RENEWABLE ENERGY INTEGRATION?

A. This would generally occur in two ways, 1) the retirement of coal will reduce what is called the "bottoming effect" where you are at the minimum operating level of the coal fleet and can not reduce the fleets power output any further to help accommodate increased wind generation and; 2) replacing the slow ramping coal units with faster ramping gas technology will help operators balance the real time system generation to system load around the intermittent wind generation.

Gas generation units can be designed with current technology to have better overall cycling characteristics than the coal units that were originally intended to be base load and that utilized 1950's and 60's technology. The gas units have the ability for shorter startup times, faster ramp rates, and wider operating range. This is even more pronounced when coal units are retrofitted with large scale emission controls equipment. The addition of emission controls will make the coal units less responsive to operational change needs as startup will take longer, minimum load limits will have to be raised, and ramp rates be reduced to maintain operations within emission limits.

As testified to by Mr. Ford, adding emission controls will make coal plants less responsive to operational needs as startup will take longer, minimum load limits will have to be raised, and ramp rates will need to be reduced to maintain operations within emission limits. Clearly, adding an SCR for NOx control, an LSD for SO2 control and sorbent injection for mercury control will make the Pawnee plant less able to support the integration of renewable energy. Similarly a coal plant that takes longer to start up and has higher minimum load limits and reduced ramp rates will reduce the responsiveness of Xcel's Colorado system to increased levels of energy efficiency and demand management.

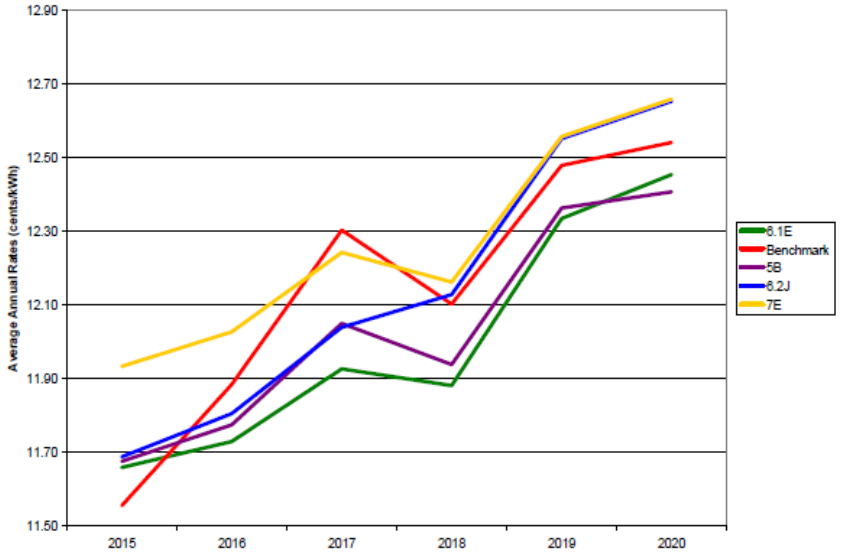
Before the Commission allows Xcel to proceed with approximately $236.5 million in pollution controls for the Pawnee plant, the issues related to Xcel's ability to accommodate increased levels of renewable energy and energy efficiency should be given careful consideration.

J. Continued Reliance on Coal Plants Will Reduce Xcel's Ability to Begin Stabilizing Electric Rates

Xcel has submitted considerable information in this docket on expected rate increases—and these projections do **not** include either carbon charges or potential significant increases in the cost of coal. (See for example, Exhibits KTH-5 and KTH-6 submitted with Ms. Hyde's Supplemental Direct Testimony of October 25, 2010 for projected future rates.) If carbon charges are instituted or coal costs rise at a rate faster than the less than 2% per year that Xcel has projected, then rates can be expected to increase even further than those shown on page 2 of KTH-5 reproduced below.[18]

[18] Expected rate impacts are also shown in Table ELC-02 on page 15 of PUC Staff Witness Gene Camp's Direct Testimony.

Exhibit No. KTH-5
Page 2 of 2



Clearly Xcel's Colorado rate payers are likely to see significantly increasing rates in the coming years and increases in coal costs and/or pollution control expenses will likely drive rates even higher.

The only apparent way to start stabilizing Xcel's electric rates in Colorado is to increase investments in renewable energy as these investments will avoid future cost increases related to rising fuel and pollution control costs. Once renewable energy generation is installed, rate increases are largely avoided as the fuel is free and there are no significant pollution control measures required.

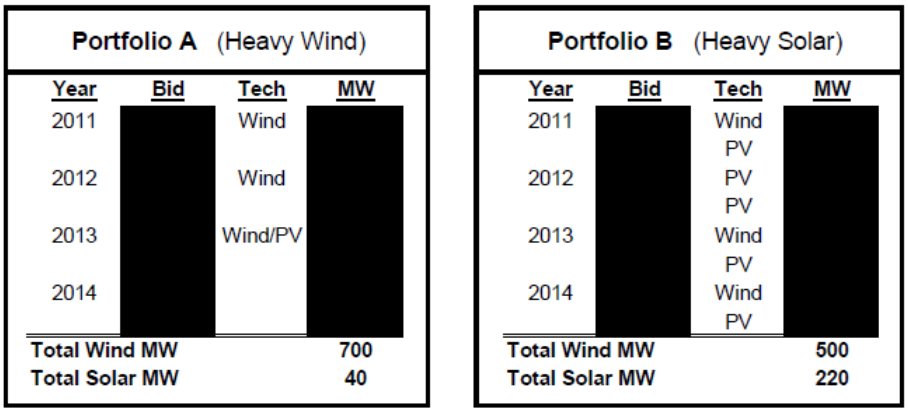
Colorado has abundant wind and solar resources and developers ready to bring cost-competitive projects to market. The abundance of Colorado's renewable energy potential was clearly demonstrated by the results of Xcel's April 2009 Request for Proposal following the 2007 Electric Resource Plan in Docket 07A-447 which is summarized in Xcel's 120 Day Report found as Exhibit LWG-32 found with Ms. Glustrom's Cross-Answer Testimony.

In April 2009 Xcel was looking for about 1,000 MW of wind and solar bids and they received over 15,000 MW of responses. Moreover, Xcel's models indicated that the addition of renewable resources to their Colorado system would likely drive system costs down, not up as shown in Figures 15 and 16 (pages 65-66, Exhibit LWG-32) from that report. These figures plus key supporting text are reproduced below.[19]

Excerpt from Xcel's 120 Day Report on the April 2009 Request for Proposal[20]
(Found in Exhibit LWG-32, Pages 65-66)

After receipt of bids, it became apparent to Public Service that feasible portfolios with up to 660 MW of intermittent resources could be developed through various combinations of both wind and solar bids. As a result, Public Service performed the 2% rate cap test on two reasonably conservative portfolios illustrated in Figure 15 with the understanding that these two scenarios would act to bound the various portfolios examined. To better ensure these portfolios represented conservative cases, several sub-optimally priced bids, e.g. not lowest cost were included in each. In addition, since a higher level of DSM results in lower sales and subsequently a lower 2% budget, the 130% level of DSM was used in the analysis.

Figure 15 Conservative Renewable Portfolios



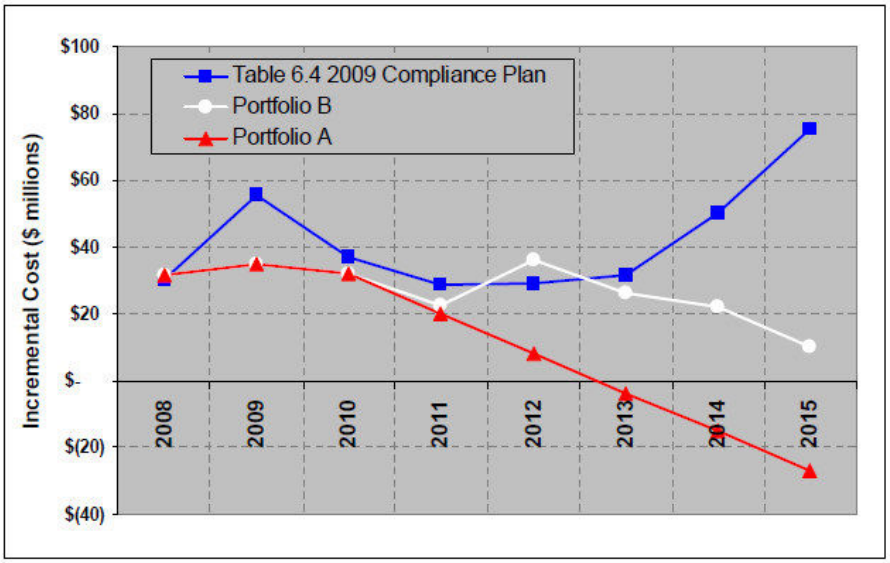
[19] The modeling used by Xcel in the 120 Day report found in LWG-32 assumes carbon costs will be instituted which makes renewable energy appear more cost competitive compared to fossil fuel resources. The 120 Day report also assumes, however, that coal costs will only increase at about 2% per year which makes renewable resources appear less cost competitive compared to fossil fuel resources. As the costs of fossil fuel generation increase with increasing fuel and pollution control costs, it is likely that renewable energy resources will become increasingly cost-competitve in the years between 2010 and the scheduled retirement date of 2041 for the Pawnee coal plant.

[20] In the excerpt from Xcel's 120 Day Report (Docket 07A-447E) "DSM" stands for Demand Side Management, "RAP" stands for the Resource Acquisition Period and "RES" stands for Renewable Energy Standard.

[Excerpt from Xcel 120 Day Report on April 2009 RFP (Docket 07A-447E) continued below.]

The analysis showed that over the RAP, conservative portfolios A and B have incremental costs that are lower than the RES plan contained in the Company's 2009 RES Compliance plan filing. That plan was shown to be under the 2% retail rate cap. Figure 16 provides a comparison between the modeled incremental costs for conservative portfolios A and B with the modeled incremental costs of the plan contained in the 2009 RES Compliance Plan.

Figure 16 Incremental Cost of Renewable Resources



The fact that the conservative portfolios have lower incremental costs than the plan filed in the Company's 2009 RES Compliance Plan provides reasonable assurance that combinations of Section 124 resources (consistent with the 660 MW reliability cap) that were likely to be contained in portfolios developed in the Strategist modeling could be funded within the 2% retail rate cap. An analysis of the retail rate impacts associated with the Company's preferred portfolio will be included in the next RES Compliance Plan that is due to be filed with the Commission in the Fall of 2009.

The red and white lines in the graph in Figure 16 above indicates that adding renewable energy resources to to Xcel's system in this century is likely to drive system costs down, not up. As fossil fuel costs increase and renewable energy costs decrease in

the coming years, the ability of renewable energy resources to begin stabilizing rates is likely to improve.[21]

Before allowing Xcel to spend approximately $236.5 million on pollution controls for the Pawnee coal plant with the intention of operating the coal plant until 2041, the Commission should take a careful look at the possibility that doing so will inhibit future additions of cost-effective renewable energy to Xcel's Colorado system.

K. Pollution Controls on Pawnee and Hayden Do Not Have to Be Included In This 10M-245E Docket

As discussed in the Answer Testimony of PUC Staff witness Eugene Camp, there is no reason that pollution controls on the Pawnee and Hayden plants need to be included as part of the deliberations in this 10M-245E dockets since they are not a mandatory part of the Clean Air Clean Jobs Act.

The Commission can—and should—take time to review all of the options for Pawnee and Hayden at least as carefully as they have considered the options for the Cherokee 4 plant before allowing Xcel to make an expenditure of $370 million pollution control that is of questionable prudence.

III. THE DECISION TO INVEST IN EXPENSIVE POLLUTION CONTROLS FOR THE HAYDEN COAL PLANTS NEEDS FURTHER EXAMINATION

As with the Pawnee plant, the decision to add expensive pollution controls to the Hayden coal plants (west of Steamboat Springs), needs more examination than was provided in this 10M-245E Docket.

[21] An indication of the potential for renewable energy costs to decline can be found in Docket 10A-377E in which Xcel has suggested that wind bids may be available at a cost of $20/MWh (2 cents/kwh) lower than the winning bids from the 07A-447E April 2009 RFP discussed in Exhibit LWG-32.

A. The Hayden 1 Plant Has A Net Plant Value of Approximately $32 Million

According to data provided by Xcel and found in Exhibit LWG-5 with Ms. Glustrom's Answer Testimony (Hearing Exhibit 121), the "Net Plant" value for the Hayden 1 coal plant as of 12/31/2009 was approximately $32 million. The spreadsheet provided by Xcel from Exhibit LWG-5 (from Hearing Exhibit 121) showing net worth and other data for Xcel's coal plants is included as Attachment 1 to this Application for RRR.

B. The SCR Pollution Control for Hayden 1 is Projected to Cost About $67.1 Million

The addition of SCR pollution controls for NOx to the 139 MW Hayden 1 coal plant is expected to cost approximately $67.1 million. (See ¶127 in C10-1038 and the Direct Testimony of Xcel witness Greg Ford, Hearing Exhibit 10, page 13, line 3.)

C. The Proposed Pollution Controls Would Approximately Triple the Net Worth of the Hayden 1 Plant

The addition of approximately $67 million in pollution controls will approximately triple the existing net worth of the Hayden 1 plant in Xcel's rate base.

D. The Hayden 2 Plant Has A Net Plant Value of Approximately $28 Million

According to data provided by Xcel and found in Exhibit LWG-5 with Ms. Glustrom's Answer Testimony (Hearing Exhibit 121), the "Net Plant" value for the Hayden 2 coal plant as of 12/31/2009 was approximately $28.4 million. The spreadsheet provided by Xcel from Exhibit LWG-5 (from Hearing Exhibit 121) showing net worth

and other data for Xcel's coal plants is included as Attachment 1 to this Application for RRR.

E. The SCR Pollution Control for Hayden 2 is Projected to Cost About $80.7 Million

The addition of SCR pollution controls for NOx to the 98 MW Hayden 2 coal plant is expected to cost approximately $80.7 million. (See ¶127 in C10-1038 and the Direct Testimony of Xcel witness Greg Ford, Hearing Exhibit 10, page 14, line 1.)

F. The Proposed Pollution Controls Would More Than Triple the Net Worth of the Hayden 2 Plant

The addition of approximately $80.7 million in pollution controls will more than triple the existing net worth of the Hayden 2 coal plant in Xcel's rate base.

G. Almost No Consideration Was Given to the Decision to Invest $140 Million in Pollution Control for the Hayden Coal Plants

As discussed above, while there was extensive testimony, analysis and cross-examination related to the various options for the Cherokee units in North Denver, there was very little testimony or analysis related to the various options for the Pawnee or Hayden coal plants.

On page 27 of Xcel's Emission Reduction Plan (also known as KTH-2, Hearing Exhibit 2), it can be seen that the only option for the Hayden plants was the addition of emission controls. The decision to invest approximately $140 million in pollution controls for the Hayden plants was not subject to significant scrutiny or considered in the light of the existence of significant excess capacity on Xcel's system as shown in the updated Loads and Resources table found in Exhibit LWG-40 attached to Hearing

Exhibit 216. (The Loads and Resources table in Exhibit LWG-40 is included with this Application for RRR as Attachment 2.)

Before allowing Xcel to spend approximately $140 million on pollution control for the Hayden coal plants, the Commission should give careful thought to this decision and all possible alternatives.

H. Increased Coal Costs Could Lead to Greatly Increased Costs for Ratepayers

As discussed above, Xcel's coal costs have been increasing at a rate above 10% per year since 2005,[22] yet Xcel's modeling in this 10M-245E docket assumed that coal costs would increase at less than 2% per year.[23] Increased coal costs for the Hayden coal plants could add millions of dollars more to the costs modeled by Xcel to keep the Hayden Units 1 and 2 operating until the projected retirement dates of 2025 and 2036, respectively.

I. The Closing of the Twentymile Mine That Supports the Hayden Coal Plants Could Greatly Increase Coal Costs

As discussed during the hearings in this 10M-245E docket, it appears that Peabody intends to close the Twentymile (Foidel Creek) mine that supports the Hayden coal plants in the next several years.[24]

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[22] In 2005, Xcel's average coal cost for its Colorado coal plants was $0.96/MMBTU. In 2009, Xcel's average coal cost for its Colorado plants was $1.52/MMBTU. See Ms. Glustrom's Statement of Position, page 13 and the Hearing Exhibits cited therein.

[23] For graphs and tables showing the impact on coal costs of Xcel's 2% escalation rate per year compared to escalation rates of 5% or 10% per year, see Ms. Glustrom's Statement of Position, pages14-15.

[24] For the discussion of Peabody's plans to close the Twentymile (Foidel Creek) mine in the next several years, see the cross examination of Xcel witness Frances Roberts by Ms. Glustrom on Tuesday October 26, 2010, Hearing Transcript Volume 7, pages 125-127. The closing of the Twentymile (Foidel Creek) mine was also discussed by Associated Governments of Northwest Colorado witness Doug Monger on Friday October 29, 2010, Hearing Transcript Volume 9, pages 287-288.

Hearing Exhibit 165 shows that coal delivered from other Colorado coal mines is often much more expensive than the coal that has come from the Twentymile (Foidel Creek) mine. For example, coal delivered to the Cherokee coal plant in 2009 from the Elk Creek and West Elk mines was often above $2/MMBTU with some of the coal coming from the West Elk mine in 2009 being delivered to Cherokee at a cost above $4/MMBTU. In comparison, Xcel reported the 2008 cost of coal for the Hayden plant as being $1.54/MMBTU.[25]

J. Continued Reliance on Coal Plants Will Reduce Xcel's Ability to Increase Its Reliance on Energy Efficiency and Renewable Energy

As discussed above, continued reliance on coal fired generation will make it more difficult to improve renewable energy integration and increase reliance on energy efficiency and demand management measures due to increased start-up times, reduced ramp rates and the need to raise minimum load limits for coal plants—particularly after they have been retrofitted with emission control equipment.[26]

K. Continued Reliance on Coal Plants Will Reduce Xcel's Ability to Begin Stabilizing Electric Rates

As discussed above, Xcel has projected significant increases in electric rates in Colorado and these rate increases could be exacerbated by increased costs of coal and pollution control. Also as discussed above, it is likely that adding renewable energy can reduce future rate increases and begin to stabilize Xcel's Colorado electric rates. All of this should be given careful consideration before the Commission allows Xcel to spend $140 million on pollution controls for the Hayden coal plants.

[25] For the 2008 cost of coal for the Hayden plant, see Exhibit LWG-2 with Ms. Glustrom's Answer Testimony, Hearing Exhibit 121.
[26] See the Direct Testimony of Xcel witness Greg Ford, Hearing Exhibit 10, page 18.

IV. OPTIONS RELATED TO EARLIER RETIREMENT OR FUEL SWITCHING ON THE VALMONT PLANT SHOULD BE REVIEWED FOR THE 2011 RESOURCE PLAN

The Commission should ensure that all options for the Valmont coal plant in Boulder are examined as part of Xcel's 2011 Resource Plan filing. These options should include the possibility of fuel switching the Valmont plant to natural gas and then determining the optimal time for retirement of the Valmont coal plant. The only options considered as part of the 10M-245E proceedings were either retrofitting with SCR pollution control or retirement in 2017. Xcel did not give thorough consideration to options for earlier fuel switching and retirement of the Valmont plant.

Importantly, Xcel has between 290 and 800 MW of excess capacity on its system for the years 2010-2013 (even considering the proposed coal plant retirements of "Clean Air Clean Jobs.) This is on top of planning for the peak hour of the year and adding a 16.3% reserve margin. This excess capacity is shown in LWG-40 attached to Ms. Glustrom's Supplemental Answer Testimony, Hearing Exhibit 216, and included here as Attachment 2 to this Application for RRR. [27] This excess capacity provides flexibility to consider options for fuel switching and/or earlier retirement of the Valmont coal plant and these options should be considered as part of Xcel's 2011 Resource Plan deliberations.

[27] If additional capacity is needed in the years after 2013, Xcel can consider that as part of the upcoming 2011 Resource Plan. Clearly, there are many Independent Power Producers who stand ready to deliver economical clean electrical generation either from natural gas or renewable energy. See for example Xcel's analysis of the over 15,000 MW of clean energy bids received in response to the April 2009 RFP in LWG-32 attached to hearing Exhibit 121 (e.g. Table 2, page 10).

Xcel has acknowledged that the Valmont coal plant is not needed for transmission reliability, saying:

> From a transmission reliability perspective, the Valmont 5 facility can be retired so long as the Valmont 6 facility and the 90 MVAR of shunt capacitors at the Valmont site remain in service." (Hearing Exhibit 136). [28]

It is not just and reasonable for rate payers to pay for hundreds of MW of excess capacity and the fuel and the operating & maintenance costs associated with this excess capacity. By fuel switching the 186 MW Valmont 5 plant from coal to natural gas, Xcel can maintain the capacity of the plant and use it as needed for economic dispatch for the next several years while taking additional time to study the optimal retirement date between now and 2017 for the plant.[29]

V. OPTIONS RELATED TO THE MANAGEMENT OF POWER FACTOR ISSUES ON THE CUSTOMER SIDE OF THE METER SHOULD BE STUDIED

It is clear that Xcel has not conducted careful studies of the reasons for power factor and MVAR (reactive power) issues on its Colorado system, yet it is asking its Colorado rate payers to pay for expensive investments to address these issues, including the installation of synchronous condensers at Arapahoe 3 (See ¶ 114, Decision C10-1328) and Cherokee 2 (See ¶ 109, Decision C10-1328.) Reactive power issues can arise on the customer side of the meter when low power factor loads are not addressed by the

[28] The statements in Hearing Exhibit 136 about the Company being short on capacity (meaning to meet the peak hour and preserve the 16.3% reserve margin) in the years 2015-2017 are superseded by the excess capacity numbers found in LWG 40 attached to Hearing Exhibit 216. In addition, there will be ample opportunity between 2010 and 2015 to assess any capacity needs and to meet them with clean resources including efficiency and renewable energy as envisioned by the "Clean Air Clean Jobs" Act. See e.g. C.R.S. § 40-3.2-206 (1) (a).

[29] As part of the filings in this docket, Xcel only studied the retirement of Valmont 5 in 2017. (See e.g. page 44 in Xcel's Emissions Reduction Plan filed August 13, 2010, Hearing Exhibit 2.). Xcel did not present any modeling results that considered the possibility of retiring Valmont earlier than 2017.

customer.[30] Xcel should be required to conduct an assessment of the causes of reactive power factor issues and of options for charging rate payers based on their power factor so that all rate payers are not subsidizing customers with low power factor loads.

VI. CONCLUSION

To ensure full consideration of all alternatives for the Pawnee, Hayden and Valmont plants and to ensure an adequate analysis of future coal supplies for the Pawnee and Hayden plants as well as a better understanding of the management of power factor on Xcel's Colorado system, Ms. Glustrom respectfully requests that the Commission make the following changes in Decision C10-1328:

1) In ¶ 86, on page 83 with respect to Xcel's coal price forecasts, please amend the paragraph to note that the assumption used by Xcel in the 2007 Electric Resource Plan (i.e. that coal costs would increase about 2% per year) was not correct as Xcel's coal costs have been increasing more than 10% per year since 2005.[31]

2) In ¶ 119 on page 43 with respect to the Valmont 5 coal plant retirement, add a statement that provides for the review of the additional capacity on Xcel's system and the study of alternatives such as earlier retirement or fuel switching with respect to Valmont 5 between now and 2017 and to include these alternatives (provided they meet or exceed the emission reductions achieved by retirement in 2017) in Xcel's Electric Resource Plan expected to be filed on October 31, 2011.

3) In ¶ 150 on page 51 with respect to the CPCN filings for pollution control on the Pawnee and Hayden plants, amend the paragraph to read as follows:

[30] For a discussion of power factor issues, see the Answer Testimony of Leslie Glustrom, Hearing Exhibit 121, page 24 and Exhibits LWG 16-18 included with that testimony.
[31] For the fact that Xcel's coal costs have been increasing by more than 10% per year since 2005, see Ms. Glustrom's Statement of Position and the data from Xcel cited therein.

150. Notwithstanding our concerns about the lack of detailed cost estimates, the Commission has determined that the proposed controls at Pawnee and Hayden are needed and in the public interest, *provided that Public Service demonstrates that there will be a reasonably priced supply of coal to supply the plants until the projected retirement date and that life extension of these plants is the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* Public Service shall therefore file a modified application for a CPCN for the proposed controls, consistent with the discussin above for the application for a CPCN for the proposed 2 x 1 CC at Cherokee Station *and consistent with the requirement below to conduct a mine-specific analysis of future coal supplies for the Pawnee and Hayden coal plants.* (Additional language in italics.)

4) Amend Order ¶ 14 on page 85 to read as follows:

14. Retirement of Valmont 5 by *the end of* 2017 *or earlier* (*including possible fuel switching to natural gas before 2017)* is necessary and in the public interest for emission reduction purposes. (Additional language in italics).

5) Amend Order ¶ 15 on page 86 to read as follows:

15. *In light of the additional capacity on Xcel's system, Xcel shall conduct a study of alternatives including earlier retirement or fuel switching of Valmont 5 between now and 2017 and shall include these alternatives (provided they meet or exceed the emission reductions achieved by retirement in 2017) in Xcel's Electric Resource Plan expected to be filed on October 31, 2011.* Within three months prior to the commencement of the Commission's next electric base rate proceeding, Public Service shall file an application consistent with the discussion above *and with any decision made in Xcel's 2011 Electric Resource Plan*, to amend the Valmont 5 CPCN. (Additional language in italics.)

6) Amend Order ¶ 16 on page 86 to read as follows:

16. Installation of selective catalytic reduction (SCR), lime spray dryer, and sorbent injection controls at Pawnee by 2014 is necessary and in the public interest for emission reduction purposes, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2041 projected end of life of the plant and that life extension of the Pawnee plant is the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* (Additional language in italics.)

7) Amend Order ¶ 17 on page 86 to read as follows:

17. Public Service shall file a modified application, consistent with the discussion above, for a CPCN for the controls to be installed at Pawnee. Public Service is

granted a presumption of need for these controls with respect to this CPCN application, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2041 projected end of life of the plant and that life extension of the Pawnee plant is found to be the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* (Additional language in italics.)

8) Amend Order ¶ 18 on page 86 to read as follows:

Installation of SCR controls at Hayden 1 by 2015 is necessary and in the public interest for emission reduction purposes, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2025 projected end of life of the plant and that life extension of the Hayden 1 plant is the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* (Additional language in italics.)

9) Amend Order ¶ 19 on page 86 to read as follows:

19. Public Service shall file a modified application, consistent with the discussion above, for a CPCN for the controls to be installed at Hayden 1. Public Service is granted a presumption of need for these controls with respect to this CPCN application, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2025 projected end of life of the plant and that life extension of the Hayden 1 plant is found to be the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* (Additional language in italics.)

10) Amend Order ¶ 20 on page 86 to read as follows:

20. Installation of SCR controls at Hayden 2 by 2016 is necessary and in the public interest for emission reduction purposes, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2036 projected end of life of the plant and that life extension of the Hayden 2 plant is the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades.* (Additional language in italics.)

11) Amend Order ¶ 21 on page 86 to read as follows:

21. Public Service shall file a modified application, consistent with the discussion above, for a CPCN for the controls to be installed at Hayden 2. Public Service is granted a presumption of need for these controls with respect to this CPCN application, *provided Xcel demonstrates that there will be a reasonably priced supply of coal to last until the 2036 projected end of life of the plant and that life*

extension of the Hayden 2 plant is found to be the best alternative given plans to incorporate increasing amounts of efficiency and renewable energy on Xcel's system in the coming decades. (Additional language in italics.)

12) Add an order ¶ requiring Xcel to undertake a mine-specific analysis of coal costs and coal supply issues for each of its remaining coal plants and to report to the Commission at least 6 months prior to submitting CPCN applications related to adding pollution control to the Pawnee and Hayden coal plants.

13) Add an order ¶ requiring Xcel to undertake a study of the reasons that MVAR support is needed and the amount of the need for MVAR support that is contributed by customers and which could be corrected on the customer side of the meter as well as experience in other states incorporating reactive power into rates and to report back to the Commission at least three months before the next general rate setting proceeding.

Respectfully submitted this 4th day of January 2011,

/s/ Leslie Glustrom_____
Leslie Glustrom
4492 Burr Place
Boulder, CO 80303
303-245-8637 lglustrom@gmail.com