

State of Florida



Public Service Commission

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DATE: June 18, 2009

TO: Office of Commission Clerk (Cole)

FROM: Division of Economic Regulation (Lester, Thompson, Lee, Matlock, A. Roberts, *sum* *at* *CA*
JB Breman) Office of the General Counsel (Bennett, Young) *LOB* *W* *SB* *TS* *RET*
Office of Strategic Analysis and Governmental Affairs (Sickel) *JS*

RE: Docket No. 070703-EI – Review of coal costs for Progress Energy Florida's Crystal River Units 4 and 5 for 2006 and 2007.

AGENDA: 06/30/09 – Regular Agenda – Post-Hearing Decision – Participation is Limited to Commissioners and Staff

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Carter

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

FILE NAME AND LOCATION: S:\PSC\ECR\WP\070703.RCM.DOC

Case Background

In Docket No. 060658-EI, the Florida Public Service Commission (Commission or PSC) considered a petition by the Office of Public Counsel (OPC) that asserted Progress Energy Florida, Inc. (PEF) was imprudent in its coal procurement for Crystal River Units 4 and 5 (CR4 and CR5) for the years 1996-2005. The Commission did not consider evidence for any years subsequent to 2005. In Order No. PSC-07-0816-FOF-EI (the Refund Order), issued October 10,

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2007¹, the Commission directed PEF to supplement its 2006 Final True-up Testimony in Docket No. 070001-EI (the 2007 fuel docket) to address whether PEF was prudent in its 2006 and 2007 coal purchases for CR4 and CR5. Although the issue of PEF's 2006 and 2007 coal procurement was raised in the 2007 fuel docket, by Order of the Prehearing Officer, the issue was spun off into a separate docket.² Accordingly, this docket was opened. The Commission conducted a hearing in this docket on April 13 and 14, 2009.

In the Refund Order, the Commission found that in 2001 and 2002, PEF acted imprudently by failing to put itself in the position to use sub-bituminous coal, specifically Powder River Basin (PRB) coal, which was known to be less expensive. As a result, PEF paid excessive fuel costs in 2003 through 2005. The Commission found that it was imprudent for PEF not to purchase PRB coal when it was cost-effective to do so in 2003 through 2005. (Refund Order, pp. 34-35)

In this docket, PEF filed direct testimony claiming that its fuel procurement for 2006 and 2007 was prudent. PEF testified that the purchase of PRB coal was not as cost-effective in 2006 and 2007 as the coal purchases it actually made. OPC filed testimony disputing PEF's assertion and alleging that in 2006 the least expensive coal that PEF should have purchased was a sub-bituminous coal bid by Kennecott from the Spring Creek region of Montana. OPC asserted that in 2007 PEF should have purchased a much less expensive sub-bituminous coal from Indonesia. The Office of Attorney General (OAG) and Florida Industrial Power Users Group (FIPUG) agreed with OPC and filed briefs in support of OPC's positions in this docket. PEF filed rebuttal testimony alleging that both coals suggested by OPC were rejected by PEF for cause, and offered testimony as to why it did not purchase the coal suggested by OPC.

This recommendation addresses the prudence of PEF's coal procurement for 2006 and 2007. The Commission has jurisdiction pursuant to Section 366.06, Florida Statutes (F.S.).

¹ Docket No. 060658-EI, In re: Petition on behalf of Citizens of the state of Florida to require Progress Energy Florida, Inc. to refund customers \$143 million.

² Order No. PSC-07-0842-PCO-EI, issued October 17, 2007, in Docket No. 070001, In re: Order Granting Motion to Spin-Off 2006 and 2007 Coal Purchase Issue and Denying Request to Limit Parameters of Spin-Off Docket and Denying Motion to Stay.

COMMONLY USED ACRONYMS AND ABBREVIATIONS	
Btu	British thermal unit
CAPP	Central Appalachian
Commission	Florida Public Service Commission
CR4 and CR5	Crystal River Unit 4 and Crystal River Unit 5
DEP	Department of Environmental Protection
FERC	Federal Energy Regulatory Commission
FIPUG	Florida Industrial Power Users Group
FOB Mine	Free on Board - as in the price at the coal mine
IMT	International Marine Terminal
KWH	Kilowatt hour
MMBtu	Million British thermal units
OAG	Office of the Attorney General
OPC	Office of Public Counsel
PEF	Progress Energy Florida; formerly Florida Power Corporation
PRB	Powder River Basin
Refund Order	Order No. PSC-07-0816-FOF-EI in Docket No. 060658-EI
RFP	Request for Proposals
SO2	Sulfur Dioxide
Title V	Title V of the 1990 Amendments to the Clean Air Act
UBT	United Bulk Terminals

EXECUTIVE SUMMARY

In Docket No. 060658-EI, the Commission found that PEF was imprudent beginning in 2001 by not putting itself into a position to burn sub-bituminous coal at CR4 and CR5. The Commission found that for 2003, 2004, and 2005, PEF incurred excessive coal costs, which became the basis for a refund to customers through the fuel clause.

This case is a follow-through of the Commission's prudence review in Docket No. 060658-EI. In this docket, the Commission must determine if PEF's management failures that began in 2001, resulted in higher fuel costs for 2006 and 2007. As discussed in Issue 1A, staff applied the methodology from the previous case to cost information for 2006 and 2007. The methodology includes a cost-effectiveness test that allows for capital and operating costs associated with burning a blend with sub-bituminous coal. If the blend is cost-effective, the second step of the methodology is the calculation of excessive coal costs. The second step excludes capital and operating costs because such costs are recovered through base rates, not the fuel clause.

OPC and PEF agreed on the second step of the methodology for the refund calculation in this docket and on the actual fuel costs incurred at CR4 and CR5 during 2006 and 2007. The parties disagreed on the appropriate inputs to the methodology including the type of sub-bituminous or blended coal, the price of coal, the tons of coal for the 20 percent blend component, allowances for capital costs, and the price of SO₂ emissions allowances.

Issues 1B and 1D address the type of coal PEF should have used as the 20 percent blend component for 2006 and 2007, respectively. PEF supports PRB coals as the 20 percent, while OPC used sub-bituminous coals from PEF's Request for Proposal (RFP) evaluations – Kennecott/Spring Creek coal for 2006 and Indonesian coal for 2007. Staff recommends that the Commission use PRB coal with a heat content of 8,800 Btu per pound and SO₂ emission rate of 0.80 pounds of sulfur dioxide (SO₂) per MMBtu for the appropriate coal blend. This is the typical PRB coal and the type used in the Refund Order for years 2003-2005.

The excess coal cost amounts are determined in Issues 1C and 1E. This analysis also includes the selection of tons of coal, coal prices, transportation costs, and SO₂ emissions. Staff applied the methodology using spot market prices for PRB coal for 2006 and 2007. Staff used the transportation costs provided by PEF to develop a delivered price for coal. Since PRB coal is low in sulfur compared to the Central Appalachian (CAPP) coal burned at CR4 and CR5, staff also calculated the savings in SO₂ emissions allowances. This calculation is based on actual prices for SO₂ emissions allowances from the years in question.

PEF stated that, compared to burning an 80/20 CAPP/PRB blend, its actual costs were lower and created fuel savings for 2006 and 2007. In contrast, OPC stated that PEF incurred excessive costs and should refund \$33.9 to \$35.6 million to customers. Staff recommends that the Commission find that PEF incurred \$7,698,907 in excessive coal costs for 2006 and 2007. In Issue 2, staff recommends that the Commission require PEF to refund the excess costs with interest to customers through the fuel clause.

Issue 3 addresses whether the Commission should take additional action regarding PEF's coal procurement for CR4 and CR5 for 2008 and beyond. Staff recommends that the Commission require PEF to file a report in Docket No. 090001-EI that addresses plant modifications to comply with the Refund Order and additional efforts for fuel flexibility at CR4 and CR5.

The following table summarizes the parties positions and staff's recommendation.

	ITEMS	PEF POSITION	OPC/INTERVENORS POSITION	STAFF RECOMMENDATION
1A	Methodology	Refund Order with modifications	Refund Order with modifications	Refund Order with modifications
2006				
1B	Coal Choices	PRB coal	Spring Creek or PRB North Rochelle coal from 2004 bids	PRB coal
1C	Excess Costs 2006	None	\$15.8-16.5 million Spring Creek; \$13.5-14.2 million typical PRB*	\$2,196,094
	Delivered Coal Prices, \$/MMBtu	\$3.60	\$1.85 Spring Creek; \$2.00 PRB	\$3.11
	Tons/Specs.	440,600, 8,585 Btu/lb, 0.97 lbs SO2/MMBtu	537,890	432,229, 8,800 Btu/lb, 0.80 lbs SO2/MMBtu
	SO2 Prices	\$731/ton SO2 actual	\$977/ton SO2 forecasted	\$731/ton SO2 actual
2007				
1D	Coal Choices	PRB coal	Indonesian coal for 2007.	PRB coal
1E	Excess Costs 2007	None	\$18-18.9 million*	\$5,502,813
	Delivered Coal Prices, \$/MMBtu	\$3.48	\$2.07	\$2.88
	Tons/Specs	462,200, 8,200 Btu/lb, 1.20 lbs SO2/MMBtu	525,836	462,200, 8,800 Btu/lb, 0.80 lbs SO2/MMBtu
	SO2 Prices	\$524/ ton SO2 actual	\$1,091/ton SO2 forecasted	\$524/ton SO2 actual
2	Refund Method	2010 Fuel Factors	2009 (FIPUG)	2010 Fuel Factors
3	Additional Action	Close docket	Independently monitored test burns	File report in Dkt. 090001-EI
*OPC rounds excess costs.				

Discussion of Issues

Issue 1: Did the imprudences in PEF's fuel procurement activities determined in Order No. PSC-07-0816-FOF-EI result in the costs of coal actually delivered to Crystal River Units 4 and 5 during 2006 and 2007 being unreasonably high?

Recommendation: Yes. PEF paid excessive costs for coal and SO₂ allowances. Based on resolution of Issues 1A through 1E, the excess amount totals \$7,698,907 for 2006 and 2007. (Lester, Thompson, Lee, Matlock)

Position of the Parties

PEF: No. To the contrary, PEF's coal procurement activities saved PEF's customers millions of dollars in fuel costs during 2006 and 2007.

OAG: Adopts the position stated by OPC.

OPC: Yes. Applying the findings and cost comparison methodology contained in Order No. PSC-07-0816-FOF-EI to the facts bearing on 2006 and 2007 establishes that the costs borne by customers were unreasonably high in the amount of \$33.9-36.6 million.

FIPUG: Yes

Staff Analysis: In Docket No. 060658-EI, the Commission reviewed PEF's coal procurement activities for CR4 and CR5 for the period 1996 through 2005. The Commission found that PEF acted prudently in purchasing coal for these units from 1996 to 2001. Regarding the period 2001 through 2005, the Refund Order states:

We find, however, that beginning in 2001, PEF did not act prudently in placing itself in a position to purchase PRB coal for CR4 and CR5. During 2001 and 2002 PEF did not seek revisions to its environmental permit, it did not conduct PRB coal test burns, it did not modify its plant to burn PRB coal on a long-term basis, nor did it purchase PRB coal.³ Despite the fact that PFC recognized in May 2001 that PRB coal was very competitive, on an evaluated basis, with the types of coal it had historically purchased (CAPP coal and foreign coal) on behalf of PEF, prudent steps were not taken. We find that PEF management's failures to act despite its affiliate managements' knowledge that PRB coal was a cost-effective alternative was imprudent. We find that while PEF did not pay excessive fuel costs for the years 1996 through 2002, it did pay excessive fuel costs from 2003 through 2005.

³ While PFC purchases coal on behalf of PEF, PEF management is fully responsible for the purchase decisions of PFC management. On page 4 of Order No. 21847, issued September 7, 1989 in Docket No. 860001, In re: Investigation into affiliated cost-plus fuel supply relationships of Florida Power Corporation., it states that the Commission will review and subject the activities of EFC (Electric Fuels Corporation, the predecessor to PFC) to the same scrutiny and standards that it would apply to PFC (Florida Power Corporation, the predecessor of PEF) if they had procured their own fuel.

(Refund Order, pp. 34-35) Based on its finding of excessive fuel costs for 2003 to 2005, the Commission ordered a refund. The Commission further stated:

The prudence of PEF's coal purchases of 2006 and 2007 was not considered in this proceeding. Accordingly, we direct PEF to supplement its 2006 Final True-Up Testimony in Docket No. 070001-EI to address whether the Company was prudent in its 2006 and 2007 coal purchases for CR4 and CR5.

(Refund Order, p. 36) Subsequently, the Commission required PEF to file the testimony in this docket regarding the prudence of its coal purchases for 2006 and 2007.

Primary Focus

In this docket, the Commission must determine if PEF's management failures that began in 2001 resulted in higher coal costs for 2006 and 2007. In Docket No. 060658-EI, the Commission found that PEF was imprudent for failing to put itself in a position to burn PRB coal, knowing that it was cost-effective. Staff believes the appropriate focus for this case is whether the purchase of sub-bituminous coal would have been more cost-effective than PEF's actual coal purchases for 2006 and 2007. Consistent with the Refund Order, the Commission should base its cost-effectiveness test on an 80/20 blend of CAPP⁴/sub-bituminous coals. Subsequent issues address whether to continue an evaluation based upon PRB coal, or use other types of sub-bituminous coals recommended by OPC. If the Commission finds a blend with sub-bituminous coal would have been more cost-effective compared to actual costs, it then can calculate an amount that PEF should refund to customers.

Basic Positions

PEF witness Weintraub stated that PEF purchased the most economical coal for 2006 and 2007. According to witness Weintraub, PEF blended high quality bituminous coal with lower quality bituminous coal and achieved lower prices than a CAPP/PRB blend. (TR 43-44) PEF witness Heller stated that an 80/20 CAPP/PRB blend would have been \$3.1 million to \$4.6 million more expensive than the CAPP and imported coals actually burned at CR4 and CR5 during 2006 and 2007. (TR 174) PEF does not believe it incurred excessive costs. (PEF BR at 16)

OPC argued that PEF was imprudent in its coal purchases for CR4 and CR5 during 2006 and 2007. OPC witness Putman believed PEF could have purchased lower cost sub-bituminous coal to be burned in a blend with CAPP coal. Specifically, witness Putman recommended sub-bituminous coals based on bids from PEF's RFP Evaluations – Kennecott/Spring Creek coal for 2006 and Indonesian coal for 2007. OPC believed PEF should refund \$33.9 million to \$35.6 million to customers. (TR 306, 311-312; EXH 26; OPC BR at 1)

Staff believes that PEF was prudent in not selecting Spring Creek Coal in 2006 and Indonesian Coal in 2007. Nevertheless, staff believes that based on PEF's imprudence as

⁴ PEF burns foreign bituminous coal as well as CAPP coal at CR4 and CR5. For simplicity, staff refers to the blend as CAPP/PRB.

determined by the Commission in the Refund Order, PEF's customers continued to pay excessive coal costs in 2006 and 2007.

In Issues 1A through 1E below, staff identifies the recommended methodology and appropriate inputs for evaluating PEF's coal purchases for CR4 and CR5 for 2006 and 2007. Further, staff calculates its recommended amounts of excessive coal cost for 2006 and 2007, including the cost of SO2 allowances. For 2006 and 2007, staff has calculated total excessive coal costs of \$7,698,907.

Issue 1A: How should the reasonableness of the costs of coal delivered to Crystal River Units 4 and 5 during 2006 and 2007 be measured?

Recommendation: The reasonableness of coal costs for 2006 and 2007 should be assessed using the methodology that the Commission used in Order No. PSC-07-0816-FOF-EI, with a modification to the capital cost component of the cost-effectiveness step. (Lester, Breman)

Position of the Parties

PEF: Pursuant to the “Cost Effectiveness Test” performed by Staff in their Primary Recommendation in Docket 060658, as used in Order 07-0816-FOF-EI, pages 37-39 and Attachment A, and as reflected in PEF’s testimony in this docket.

OAG: Adopts the position stated by OPC.

OPC: The reasonableness should be measured by the “yardstick” of Order No. PSC-07-0816-FOF-EI. In that Order, the Commission compared the costs of the 20 percent highest costing tons actually delivered by water with the evaluated costs of alternatives. The Commission recognized that, had PEF been able to purchase the alternative (low sulfur) sub-bituminous coal, PEF would have spent less for SO₂ emissions allowances. The Commission did not reduce the amount of overcharges to be refunded by the cost of coal handling upgrades that the plant would have required, for the reason that such costs would have been considered in base rate proceedings.

FIPUG: Use the evaluation guidelines established by PSC Order No. 07-0816-FOF-EI. To compare PEF’s delivered coal costs to the costs it would have incurred if it had purchased the lowest cost coal available during the period.

Staff Analysis: The Refund Order provided a two-step methodology to determine whether PEF should refund its customers for 2003-2005. The first step was a cost-effectiveness test. (Refund Order, p. 37 and Attachment A to Refund Order) The cost-effectiveness test compares actual costs incurred during the year in question with the estimated cost of a coal blend consisting of 80 percent bituminous coal actually purchased and 20 percent sub-bituminous coal. The cost-effectiveness test included incremental capital costs as part of the equation. The second step of the methodology determined if PEF had paid excessive coal costs. The difference between actual delivered coal costs including actual SO₂ allowance costs, and the costs that PEF would have incurred had it used the coal blend, was used by the Commission to determine if PEF had paid excessive coal costs in 2003-2005.

While the parties disputed whether to apply the cost-effectiveness test with incremental capital costs, PEF witness Heller and OPC witness Putman agreed that the Refund Order methodology for calculating the excessive coal costs, if any, was the appropriate methodology for use in this case. The witnesses primarily disagreed over the inputs to use. A major disagreement between PEF and OPC witnesses was over the type of sub-bituminous coal to use in the coal blend. (TR 171, 182-183, 274-275, 278, 289, 309) The issue of the type of coal to be input into the cost-effectiveness test will be addressed in Issues 1B (2006) and 1D (2007) below.

No party disputed the amount of coal costs PEF actually incurred during 2006 and 2007. Both PEF witness Heller and OPC witness Putman essentially agreed on the cost of coal actually delivered to CR4 and CR5 during 2006 and 2007. (TR 289, 505; EXH 9, EXH 20, pp. 1-2)

PEF did not actually burn a blend with sub-bituminous coal during 2006 and 2007. In addition, the record does not contain a bid price for the specific amount of sub-bituminous coal that would have been used in an 80/20 blend. Therefore, staff believes it is necessary to develop a proxy or substitute sub-bituminous coal and price for use in the cost-effectiveness test and any calculation of excessive costs. For example, in Issues 1B and 1D, OPC and PEF offer different candidates for coal. The prices of those candidates are "proxy" prices. The prices are not actual prices that were paid for coal, but instead are substitutes used to calculate whether the coals would have been cost-effective.

Staff believes it is necessary to establish a reasonable delivered price proxy, including proxies for transportation costs and SO2 allowances, for PRB coal or OPC's alternative coals. Where necessary to apply the Refund Order methodology to 2006 and 2007, staff recommends proxies based on actual costs that could have reasonably been incurred with specific coal blends.

Consideration of Capital Costs

Witness Heller presented his calculation of excessive coal costs with and without capital costs. (TR 262; EXH 9, EXH 11) The results of both PEF witness Heller's calculations indicated negative costs, so there would be no refund. OPC witness Putman disagreed with witness Heller regarding capital costs. He stated:

Moreover, the determinations by the Commission that the amount refunded in Docket No. 060658-EI should not be reduced by the amount of capital and operating costs, as those items would be recovered through base rates, renders Mr. Heller's discussion of capital costs moot.

(TR 296)

In its brief, OPC argued that the calculation of incremental capital cost should be eliminated from the cost-effectiveness test. OPC contended that if PEF had made the capital improvements referred to in the prior docket, then those capital improvements would have been in service continuously beginning in 2003. OPC asserted that those costs would have been included in base rates and would have been incurred and recovered over time, whether or not PEF burned sub-bituminous coal. (OPC BR at 23-25)

While OPC argued to eliminate capital improvements from the equation for the cost-effectiveness test, PEF argued to modify how capital improvements are addressed in the cost-effectiveness test. PEF witness Heller recommended a correction to the amount used in the Refund Order. His correction would spread the revenue requirements associated with capital improvements over the fewer PRB Btus that would be used in a blend. (TR 182, 184-185) This correction increased the capital cost amount from \$0.03 per MMBtu to \$0.12 per MMBtu. (TR 185-186; EXH 8, EXH 10, EXH 12, EXH 13) Witness Heller's proposed adjustment to the capital cost calculation reflects the impacts of a different coal heat content. (TR 256; EXH 13)

Absent this adjustment, any change in the Btu content would unintentionally change the annual revenue requirements. (TR 254-256, 591) As such, staff agrees with the adjustment.

Witness Heller also updated the accumulated depreciation and rate-of-return components of the capital cost calculator. (TR 185-186; EXH 12) Staff agrees with these adjustments since they are updates to the inputs necessary to calculate capital costs. However, as noted in Issue 1E below, the capital costs should reflect the specific heat content of the coal blend, i.e., the MMBtus per ton of the coal that makes up the 20 percent part of the blend.

Staff believes the two-step methodology is appropriate for 2006 and 2007, and that the cost-effectiveness test including incremental capital costs should be applied to the coal purchased by PEF. Staff notes that the Refund Order used capital costs for the cost-effectiveness test, but not for the calculation of excessive coal costs passed through the fuel clause. (Refund Order, pp. 38-39 and p. 51) Staff believes including capital costs is necessary and appropriate for determining cost-effectiveness. However, using the first step of the methodology, if the 80/20 coal blend is found to be cost-effective, any refund calculation should exclude capital costs because these costs would not have been passed through the fuel clause. Staff believes this is consistent with the Refund Order.

One further point regarding the methodology that PEF raised in its brief relates to the determination of which coal should be displaced by the lower costing coal. Staff observed the methodology employed by both witnesses Heller and Putman assumed that the highest priced bituminous coals would be displaced by PRB or other sub-bituminous coals. (TR 172,176, 279, 283, 287; EXH 24; OPC BR at 3) The methodology does not compare total actual coal costs at CR4 and CR5 to the total cost that would have been incurred based on actual prices of a substitute coal in a 20 percent blend. Whether the methodology should be modified regarding the types of coal displaced is addressed in Issue 3.

Conclusion and Summary of Methodology

Staff believes the methodology established by the Refund Order is appropriate for measuring the cost-effectiveness of burning coal blends at CR4 and CR5. The Commission should use the Refund Order methodology to determine if a coal blend would have been more cost-effective than what PEF actually burned at CR4 and CR5. If the Commission finds that a coal blend would have been more cost-effective, then the Commission should use the Refund Order methodology to calculate excessive coal costs. The appropriate inputs – coal choices, tonnages, transportation costs, and SO₂ allowance prices – are discussed in Issues 1B through 1E.

Issue 1B: What candidates for alternative coal purchases should the Commission consider in evaluating whether more economical coal was available for delivery to Crystal River Units 4 and 5 during 2006?

Recommendation: For the 80/20 blend, the Commission should use PRB coal with a heat content of 8,800 Btu per pound and a SO₂ emission rate of 0.80 pounds of SO₂ per MMBtu as the proxy coal candidate for the cost-effectiveness evaluation and excess cost calculation for 2006. (Lee, Sickel, Thompson)

Position of the Parties

PEF: None, other than the Wyoming PRB coal that the Commission heard evidence on and considered in Docket 060658.

OAG: Adopts the position stated by OPC.

OPC: The Commission should look to the numerous bids to supply sub-bituminous coal in 2006 that PEF received in April 2004, because that is the relevant procurement decision point in time. Four producers of sub-bituminous PRB coal submitted six offers lower than the bituminous coal that PEF was forced to buy because it did not have a permit to burn sub-bituminous coal.

PEF's proposed alternative, a tiny spot purchase, did not occur until 2006, after market prices had risen. PEF is using "hindsight" to artificially increase the cost of the alternative. Moreover, the purchase is not representative in any event.

FIPUG: Agree with OPC.

Staff Analysis: The parties submitted different candidates for coal purchases in evaluating whether more economical coal was available for delivery to CR4 and CR5 during 2006. OPC's primary candidate was the lowest evaluated bidder (Spring Creek Coal bid by Kennecott) from responses to PEF's 2004 RFP. PEF's candidate was a 2006 actual purchase of sub-bituminous coal from the Powder River Basin.

OPC argued in its brief that OPC witness Putman used one of several bids submitted by producers of PRB sub-bituminous coal in April 2004. (OPC BR at 3-4) OPC asserted that PEF's evaluation of the responses to its April 2004 RFP for coal for the years 2005, 2006, and 2007 should be used to evaluate whether the sub-bituminous coal was less costly. OPC stated that the six lowest bids were submitted by Kennecott, Arch, Triton, and Peabody. According to OPC, these were all bids to supply sub-bituminous coal. (EXH 19)

PEF witness Heller based his proxy choice of PRB for the 2006 cost-effectiveness test on the Refund Order, which uses PRB coal. In its brief, PEF also argued that in Docket No. 060658-EI, the Commission gave a clear set of instructions to PEF. PEF stated that because all the evidence regarding PRB coal ended in 2005, the Commission opened this docket and instructed PEF to present evidence on the economics of an 80/20 blend of PRB coal for 2006 and 2007. PEF argued that had the Commission wanted to open an analysis on the economics of every conceivable type of coal blend possible, it would have so ordered. PEF concluded that the

Commission limited its two-year extension of its review to the blend of 20 percent Wyoming PRB and 80 percent CAPP coal, the coal the Commission heard evidence on in Docket No. 060658-EI. (PEF BR at 1-3; TR 169-171, 176-177, 540-541)

PEF argued that the Kennecott bids from the 2004 RFP were for a PRB coal from Spring Creek in Montana, a new coal that is different from the PRB coal the Commission considered in Docket No. 060658-EI. PEF asserted that based on the Refund Order, the Commission should use the Wyoming PRB coal as the only candidate for alternative coal purchases for delivery to CR4 and CR5 during 2006 and 2007. (PEF BR at 2, 13; TR 540-541, 562-563)

OPC contended that the Powder River Basin coal referred to in the Refund Order could come from either Wyoming or Montana. OPC also stated that the characteristics and specifications of coals are not necessarily functions of their geographical locations. According to OPC, what matters is whether the coal is suitable for use in CR4 and CR5. OPC asserted that when PEF issued its RFP, the specifications in the RFP were functions of properties, contents, and characteristics, not geographical origin. (OPC BR at 9; TR 321)

The Refund Order and the record in this docket contain specific reference to coal with a heat content of 8,800 Btu/lb and an emissions rate of 0.80 pounds of SO₂ per MMBtu. (TR 105; 562-563) Staff agrees with OPC that the Refund Order did not set a limit by region. However, the term "Wyoming PRB" is not based on a region but rather the characteristics of the coal that is most typical of that region. Staff believes some PRB coals from Montana may be considered Wyoming PRB coals if they share these same characteristics.

Coal Quality and Testing

OPC witness Putman did not dispute that generating plants are generally designed to burn coal of a particular type or from a specific region, and they are also designed with specific fuel quality requirements such as heat content and chemistry. (TR 341) The witness commented that the CR4 and CR5 units were designed to burn a wide range of coals, including special design attention given to possible slagging and fouling issues⁵. (TR 325) Witness Putman acknowledged a coal switch can be very expensive in terms of equipment and operating costs. (TR 342-343) Witness Putman agreed there is a need to do test burns when considering new coals. (TR 392) He also agreed that companies have to be careful about the potential for spontaneous combustion when dealing with sub-bituminous coals. (TR 393)

OPC witness Putman admitted he had no experience and very limited knowledge of the Spring Creek PRB coal. At the time of his deposition, he did not tie the Kennecott bid specifically to Spring Creek Coal. (TR 377, 381)

During cross examination, OPC witness Putman agreed with PEF on some operational issues with Spring Creek coal and the need for testing and corrective actions. Witness Putman agreed that very expensive capital additions like baghouses⁶ may be needed in order to burn sub-bituminous coals at plants with scrubbers. (TR 383-384) PEF witness Stenger stated the cost for

⁵ Slagging and fouling refers to deposits of ash fused to the boiler walls. (TR 627, 636-637; EXH 48)

⁶ Equipment to remove particulate matter and elements such as mercury. (TR 643, 660)

a baghouse is estimated at \$80 to \$100 million. (EXH 42) Witness Stenger also said there may be incremental capital additions up to \$75 million as well as costs associated with engineering studies, testing, operating, and maintenance. (TR 645-654, EXH 42)

PEF's evaluation process for new coals appears to be consistent with witness Putman's testimony based on his own experience and his understanding of the Refund Order. Witness Putman agreed that before a company switches to a new coal, it should do test burns, evaluate operational issues, recheck economics and perhaps do a second test burn. (TR 392) His testimony commenting on the Refund Order recognized the time and costs required, such as testing and plant modification, to make sure a new coal is prudent to burn. (TR 329) OPC witness Putman acknowledged that even when a particular coal is cheap and available, it may not be prudent to burn. (TR 320)

PEF witness Stenger noted that Spring Creek coal is different from PRB coal. She stated that Spring Creek coal is very high in sodium, which can cause slagging and fouling and thereby affect boiler performance. She further stated that such impacts of high sodium cannot be blended away. (TR 627-628, 664-665, 689; EXH 43)

PEF disagreed with witness Putman's claim that Spring Creek coal was more economical. PEF asserted that its witnesses Weintraub and Stenger put on substantively unchallenged testimony showing that PEF could not have burned Spring Creek coal in the 2006 time frame. (PEF BR at 14-16)

PEF has a process in place to evaluate new coals, and PEF witness Weintraub testified that the process does not automatically exclude specific types of coal. (TR 114) Based on the fact that those bids ranked high in PEF's short list after initial evaluation, staff believes PEF did not automatically exclude Spring Creek coals. However, because the Spring Creek coal was considered a new type of coal, PEF's evaluation of the cost impact involved more than just price comparison. (TR 44-47, 636-654)

The Refund Order referred to the testimony of multiple expert witnesses who agreed that an 80/20 CAPP/PRB blend would perform adequately at CR4 and CR5. Staff notes that the Refund Order includes extensive information taken directly from the evaluations and assessments of operational issues and coal quality factors. Those evaluations and assessments were made by several technical experts and involved the PRB coal that was recognized and available in the 1996-2005 timeframe. (Refund Order, pp. 29-31) OPC did not provide similar information that documents the expected performance of Spring Creek coal.

Other Sub-bituminous Coals

OPC asserted that there were other sub-bituminous coals bid in the 2004 RFP besides the Kennecott/Spring Creek coal. OPC asserted that these other producers submitted bids that were more economical on an evaluated basis than the bituminous coal bids or the cost of the existing contract to which PEF turned for a portion of its 2006 coal. OPC asserted that the bid that ranked second in the April 2004 RFP was submitted by Triton North Rochelle. OPC concluded that since the Triton North Rochelle coal was the same coal PEF selected for the test burn that it

began and aborted in 2004, it is an example of the typical PRB that PEF argued it could use. (OPC BR at 18-21; EXH 19, EXH 21)

PEF argued that the 2004 RFP evaluation cannot be used as a proxy price for PRB coal. PEF claims that the use of the coal bid under the RFP for 2006 skips the year 2005 and assumes coal prices would have gone into effect in 2006 and 2007. PEF asserted that, even assuming that could be done, the Triton North Rochelle bid, referenced in the 2004 Evaluation Sheet, was not cost-effective when compared to the actual costs of coal purchased by PEF. (PEF BR at 7-8)

PEF challenged witness Putman's choice of the lowest evaluated 2004 bid because it represented the price for one year of a three-year bid. PEF witness Weintraub estimated the price would have been five percent higher with one year contract. (TR 543, 556; EXH 19) In response, OPC argued that witness Putman assumed the 2006 price would be the second year of the contract. (OPC BR at 12)

RFP Evaluations

Regarding the specific type of sub-bituminous coals at issue, OPC witness Putman said he relied solely on PEF's 2004 Evaluation Sheet. Witness Putman used prices from PEF's bid evaluations for his proxy coal prices. (TR 383; EXH 19, EXH 20, pp. 1-2, EXH 21)

PEF witness Weintraub explained that the 2004 Evaluation Sheet used by witness Putman is a tabulation of 2004 bids to determine the short list of suppliers with which to begin negotiating contracts. According to PEF, it compared and ranked coal bids on spreadsheets that provide details on the types of coal offered, the cost of the coal, forecasted transportation costs to deliver the coal to CR4 and CR5, and forecasted emission prices. PEF asserted the bid ranking did not take into account capital upgrades, incremental transportation costs, and other considerations that were not yet known at the time bids were initially received and short listed. PEF concluded that simply looking at the 2004 bid evaluation to determine whether or not one coal purchase would be cost-effective was invalid. (PEF BR at 8-9; TR 556, 576-577)

Staff finds PEF's arguments regarding the use of prices from the 2004 RFP Evaluation Sheet persuasive, to the extent that these prices do not represent actual costs that would have been incurred. (TR 142, 576-577; EXH 19) PEF used the RFP evaluation prices to rank bids and develop a short list. (TR 576) PEF would then negotiate a contract with one of those suppliers. The eventual contract price may vary significantly from the bid price. (TR 576-577) The RFP evaluation includes estimated prices for transportation, SO2 allowances, and other costs that are subject to change. (TR 70) For example, subsequent to the 2004 RFP evaluation, PEF entered into new coal transportation contracts. (TR 576-577; EXH 19)

Staff believes the RFP prices are different from what PEF would have actually incurred. Therefore, staff believes such prices are inappropriate for determining if excessive costs were incurred. The other PRB coals that OPC suggested, based upon the 2004 Evaluation Sheet, have the same problem and should not be considered as candidates for the proxy coal for 2006. OPC did not persuade staff that Spring Creek coal is the appropriate proxy. This coal is significantly different from typical PRB coal. The record reflects that Spring Creek coal could cause

operational difficulties, and it would have to be the subject of test burns and engineering studies before it could be considered an appropriate proxy coal.

In addition, staff believes that the price quoted in a multi-year bid from a RFP evaluation could be different from the price for a one-year bid. Based on the record, staff recommends Spring Creek coal should not be considered a candidate to burn as a blend in 2006. Staff believes Wyoming PRB, with 8,800 Btu per pound and an SO₂ emission rate of 0.80 pounds per MMBtu, should be the candidate for the 2006 evaluation.

Choice of PRB Coal

As noted above, PEF asserted that PRB coal is the appropriate choice. However, the coal PEF recommended had a heat content of 8,585 Btu per pound and an SO₂ emission rate of 0.97 pounds per MMBtu. (TR 176) Witness Heller stated his choice of a PRB coal for 2006 was based on an actual PEF transaction – PEF's purchase of PRB coal for the May 2006 test burn. (TR 176, 193; EXH 2, p.2908)

In its brief, OPC disagreed with PEF witness Heller's use of the May 2006 test burn purchase of 3,300 tons to obtain his proxy price. OPC's witness Putman noted that the bid used by witness Heller was for a small quantity, 3,300 tons, and stated it was inappropriate for use as a proxy. Also, OPC asserted that the market prices for sub-bituminous coal increased between April 2004 when PEF received responses to its RFP, and 2006 when PEF made the spot market purchase of sub-bituminous coal. (OPC BR at 6 – 7)

Staff agrees with OPC that witness Heller's 3,300 ton purchase of PRB coal should not be used as a proxy. Staff notes that witness Heller's recommended PRB coal for 2006 had higher sulfur content and lower heat content than typical PRB coal. (Heller TR 176, 606, Putman 492, Weintraub 562-563) Staff believes this and the small quantity for the May 2006 test burn purchase eliminate witness Heller's choice of PRB coal as an appropriate proxy coal for 2006.

Conclusion

Staff believes the appropriate proxy coal for 2006 is PRB coal with a heat content of 8,800 Btu per pound and an emission rate of 0.80 pounds of SO₂ per MMBtu. This is the standard, typical PRB coal that is offered in the market and it is the type of PRB coal used in the Refund Order.

Issue 1C: By what amount, if any, were the costs of coal actually delivered to Crystal River Units 4 and 5 unreasonably high in 2006?

Recommendation: Staff recommends that the Commission find PEF incurred excessive coal costs of \$2,196,094 for Crystal River 4 and 5 in 2006. This is based on 432,229 tons of PRB coal with a delivered price of \$3.11 per MMBtu and an SO₂ emission allowance price of \$731 per ton. (Thompson, Matlock, Breman)

Position of the Parties

PEF: None. To the contrary, PEF's coal procurement activities saved PEF's customers millions of dollars in fuel costs during 2006 and 2007.

OAG: Adopts the position stated by OPC.

OPC: Had PEF accepted the 2004 Kennecott bids, under the PSC formula coal costs would have been lower by \$14.7-15.4 million. Had PEF instead purchased the "typical PRB" coal from North Rochelle, the differential would have been approximately \$12.4-13.1 million. To these amounts, one must add \$1.1 million, to account for the fact that the alternative coal not purchased contained far less sulfur and would have resulted in lower costs of emissions allowances.

FIPUG: \$15,436,386 in coal charges \$1,154,160 in emission charges

Staff Analysis: Based on the methodology recommended in Issue 1A and staff's recommendation on PRB coal in Issue 1B, the calculation of the cost effectiveness test and any excessive coal costs for 2006 is presented in this issue. Staff discusses necessary inputs to the methodology such as coal quantities, the price of the PRB proxy coal, transportation costs, and SO₂ allowance prices. The calculations are presented in Attachment A.

Appropriate Coal Costs

As noted in Issue 1B, staff does not believe PEF's PRB coal price for 2006 is an appropriate proxy for the methodology. The quantity is very small and unrepresentative of the volume of PRB coal that PEF would have had to purchase.

Staff believes a more accurate price candidate for 2006 is the average spot market price for PRB coal. The Refund Order noted that PEF had the ability to purchase the necessary tonnages of spot coal for 2003 through 2005 because PEF's actual spot purchases exceeded the necessary quantity of PRB coal. (Refund Order, p. 38) Thus, staff believes the Refund Order suggests spot prices are reasonable. Staff maintains the use of the average spot market price for coal is consistent with the Refund Order.

Staff believes PEF could have purchased the necessary quantities of PRB coal at the average spot market price. Unlike the RFP evaluation prices, the spot market prices staff recommends are based on actual transactions.

Appropriate Tons of Coal

The methodology requires a determination of the tons of PRB coal that could have been used in an 80/20 CAPP/PRB blend. PEF witness Heller determined the quantities of blend coal for 2006 by using 20 percent of waterborne deliveries of compliance coals that, he believes, potentially could have been displaced by PRB coal.⁷ (TR 176) In his direct testimony, witness Heller suggested that 490,000 tons of coal could have been displaced in 2006. (TR 257; EXH 9, EXH 11)

However, in his rebuttal, PEF witness Heller revised his estimate to 440,600 tons of coal for 2006. This quantity is based on 20 percent of coal delivered to CR4 and CR5 via International Marine Terminal (IMT) during 2006. (EXH 31) Witness Heller noted that PEF has blending capability only at IMT and United Bulk Terminals (UBT). He therefore excluded shipments of coal to CR4 and CR5 from the Alabama State Docks, where PEF does not have a contract for blending. (TR 258, 589; EXH 31) Consistent with the Refund Order, the methodology is based on the requirement that coal blending for the 80/20 blend would be done off-site. (TR 589; Refund Order, p. 38)

For his quantities of coal for 2006, OPC witness Putman proposed 537,890 tons. He based this quantity on 20 percent of the waterborne coal deliveries to CR4 and CR5 for 2006. (TR 278; EXH 20, p. 1; EXH 2, p. 6) In his amended testimony, OPC witness Putman breaks the quantity down by highest cost and second highest cost coal delivered to IMT. These amounts total 407,447 tons of coal for 2006. Witness Putman adds an additional purchase to arrive at 537,890 tons for 2006. (EXH 20)

The Refund Order noted that the Sargent and Lundy report recommended that blending be done off-site, and that other studies assumed blending would be off-site. The Commission stated that on-site blending could result in operational difficulties. (Refund Order, pp. 28-31) Hence, the Refund Order methodology is based on the assumption that coal blending for the 80/20 blend would be done off-site. (TR 589; Refund Order, p. 38) The off-site blending assumption was necessary for the review in Docket No. 060658-EI, given the potential operational problems with handling PRB coal. (Refund Order, p. 38)

The Refund Order allowed for rail transportation constraints in 2005 that caused some reduction in the quantity of PRB tons shipped. (Refund Order, p. 38 and p. 51) PEF witness Heller states these rail delivery constraints for PRB coal persisted into 2006. Pursuant to witness Heller's recommendation, staff has reduced the 2006 tons from witness Heller's rebuttal testimony (440,600) by 1.9 percent to recognize reduced rail shipments of PRB coal for the first quarter of 2006. (TR 591-593; EXH 31, EXH 33)

Staff believes the assumption regarding off-site blending should continue for 2006 and 2007. Therefore, staff agrees with the tonnages from witness Heller's rebuttal testimony, adjusted for rail transportation constraints. Staff recommends 432,229 tons as the appropriate tons for purposes of calculating excessive coal costs for 2006. This quantity will be less than 20

⁷ "Compliance coals" are low sulfur coals that produce emissions in compliance with the plant's air permit. (TR 47, 49, 107, 112, 144)

percent of the tons burned at CR4 and CR5. However, staff believes the off-site blending assumption is important given the record in Docket No. 060658-EI regarding operational problems with PRB coal.

Appropriate Transportation Costs

The pricing methodology in the Refund Order is based on delivered coal costs, which requires adding transportation costs to the price of coal.⁸ For 2006 transportation costs, PEF witness Heller used transportation costs associated with an actual purchase of PRB coal delivered to IMT in 2006 as a transportation cost proxy. PEF purchased 3,300 tons of PRB for an initial test burn, which was performed in 2006. The FERC Form 423 shows this coal was delivered to IMT at a price of \$47.34 per ton. (TR 176; EXH 8; EXH 10; EXH 2, p. 482) Therefore, witness Heller's proposed transportation costs for CR4 and CR5 are based on blending at and shipping from IMT.

The transportation elements of witness Heller's 2006 proxy are as follows:

- Blend the coal with CAPP or imported coal (TR 179; EXH 8; EXH 10)
- Transload the coal blend into an ocean barge (TR 179; EXH 8; EXH 10)
- Ship the coal blend to CR4 and CR5 (TR 179-180; EXH 8; EXH 10)
- Include demurrage and other miscellaneous costs (TR 179; EXH 8; EXH 10)

To get the transportation costs of the blended coals he recommends, OPC witness Putman used transportation costs embedded in PEF's Evaluation Sheets. (TR 276) Staff notes that the transportation costs that PEF uses for its Evaluation Sheets are forecasted prices. (TR 576) PEF witness Weintraub stated that the evaluations are used to develop a short list of suppliers, which becomes the starting point for negotiating a supply contract. He noted that actual transportation costs would have differed from the forecasted costs used for evaluating bids. In its brief, and in testimony, PEF claimed that if it were to purchase the Triton North Rochelle coal from the 2004 responses to RFPs, there would be additional costs associated with leasing or maintaining those cars. Witness Weintraub testified that the typical costs for leasing and maintaining those cars would be 2 cents per mill mile if the Triton North Rochelle coal was purchased. (PEF BR at 9; TR 148) However, staff is not persuaded that these additional costs are actual costs PEF would incur if it purchased Wyoming PRB coal at average spot price. As discussed below, witness Heller provided the rail cost for PRB coal in his direct testimony. (TR 177-178; EXH 8) PEF witness Heller's costs of shipping PRB coal are closer to actual costs for the transportation segments for PRB coal. (TR 177-179) Therefore, staff believes witness Heller's transportation costs are a better transportation cost proxy for determining the delivered cost of PRB coal.

As noted above, witness Heller showed only the transportation costs from IMT for 2006. Staff believes an appropriate transportation cost proxy should include transportation costs from Wyoming as well. The record does not have specific 2006 transportation costs for riling PRB

⁸ Delivered costs of coal include costs of transporting the coal to the plant. (TR 47; EXH 4, p. 1)

coal from Wyoming to Cora Dock, transloading it to river barges, or shipping by river barges. However, the record contains 2007 costs for these segments. Staff notes that the 2006 river barge rate presented by PEF witness Weintraub in his rebuttal testimony is not significantly different from the 2007 river barge rate used by witness Heller. (TR 546, 178; EXH 8, EXH 10) Staff recommends applying 2007 costs for these segments in 2006 as a reasonable transportation cost proxy.

Appropriate SO2 Allowance Costs

For the 80/20 CAPP/PRB coal blend, the Refund Order used PRB coal with a heat content of 8,800 Btu/lb and an SO2 emission rate of 0.80 lb SO2 per MMBtu. This is the commonly available PRB coal. (TR 91, 492, 562-563, 606; EXH 2, p. 2700) As such, it is a low sulfur coal. CAPP coal has relatively higher sulfur content and therefore causes PEF to incur higher SO2 allowance costs. The methodology in the Refund Order recognized the lower SO2 allowance costs associated with PRB coal and the resulting savings that would have occurred with an 80/20 CAPP/PRB blend. (Refund Order, pp. 36, 38, 40, and 52)

The Refund Order set the SO2 emission allowance expense proxy amount using (1) the displaced CAPP/Foreign coal Btus, (2) market prices for SO2 allowances, (3) PRB coal heat content of 8,800 Btu per pound, (4) PRB SO2 emission rate of 0.80 pounds per million Btu and, (5) the SO2 emission rate of actual delivered CAPP/Foreign coals. (Refund Order pp. 36 and 52) The Refund Order set the proxy amount of PRB Btus based on displacing 20 percent (by weight) of the actual delivered waterborne bituminous coal for CR4 and CR5 adjusted for actual PRB coal transportation and production limitations or constraints. (Refund Order pp. 36 and 52.)

The following analysis explains that the parties presented both forecasted and actual SO2 emission allowance prices, and explains why staff concludes that actual prices are appropriate. For purposes of completeness, staff also addresses the other inputs necessary to calculate an SO2 emission allowance expense proxy of \$750,720 for 2006.

PEF witness Heller calculated SO2 emission costs that would apply to PRB coal and included these costs in his "net operating cost penalty." (TR 180-181; EXH 8, EXH 10) Witness Heller noted that the baseline specification for CR4 and CR5 is an emission rate of 1.17 lbs. of SO2 per MMBtu. Witness Heller used forecasted prices, \$977 per ton for 2006, to calculate SO2 emissions costs. (TR 180-182; EXH 8, EXH 10)

OPC witness Putman calculated excess SO2 emissions costs using the recommended tons of his recommended substitute coals and forecasted prices for SO2 emissions - \$977 per ton of SO2 for 2006. (TR 297-299, 369, 542, 546; EXH 24, pp.1-2) When questioned regarding use of forecasted prices, witness Putman asserted that it would be retroactive ratemaking in his view to use actual costs. (TR 370)

In rebuttal testimony, witness Heller asserted that OPC witness Putman double counted SO2 emission allowance expenses. He explained that OPC used PEF's 2004 Evaluation Sheet coal price from Exhibits DJP-6 through DJP-8, which already includes SO2 emission allowance prices, and in a separate calculation estimated the same expense, and then summed the two values. (TR 550, 594) OPC witness Putman clarified that he was not certain what assumptions

were included in PEF's evaluation of the bid coal prices. (TR 506) Thus, the record shows it is possible OPC witness Putman priced each ton of SO₂ twice by adding in Exhibit 24 an additional price per ton of \$977 for 2006.

In contrast to witnesses Heller and Putman, PEF rebuttal witness Weintraub supported use of actual average SO₂ emission allowance prices of \$731 per ton for 2006 rather than projected values. (TR 552, 557, 572-573; EXH 2 pp. 2650-2652) Staff believes the forecasted prices of SO₂ emission allowances are appropriate for evaluating types of coal but are outdated for calculating excessive costs. Staff believes actual prices of SO₂ emissions allowances are the appropriate input for calculating excessive costs.

Staff notes the long-standing Commission practice in cost-recovery clauses to true-up projected cost-recovery amounts to the actual amounts that are prudently incurred. Additionally, staff notes that no party appealed the Commission's decision in the Refund Order to use actual SO₂ allowance market prices. Consequently, as a matter of policy, staff recommends the Commission continue to rely on actual cost data, where available, in determining the total cost of the proxy coal for this docket for purposes of calculating any refund. Therefore, staff recommends the Commission rely on the rebuttal testimony of witness Weintraub and use market SO₂ emission allowance prices of \$731 for 2006.

In Attachment A, staff includes the market SO₂ allowance prices and calculates the excess SO₂ emission allowance cost of \$750,720 associated with burning CAPP coal in comparison to an 80/20 PRB blend proxy for 2006.

Calculation of Excessive Coal Costs for 2006

Staff applied the methodology recommended in Issue 1A to the costs in this issue to conclude that PEF incurred excessive coal costs in 2006 amounting to \$2,196,094. This amount consists of \$1,445,374 based on the difference between the delivered prices of CAPP coal and PRB coal, and \$750,720 based on the difference between the SO₂ emissions costs of CAPP coal and PRB coal. Attachment A contains the price and emissions calculations with supporting components. Staff's explains the calculations below.

Witness Heller provided the average spot prices for PRB coal for 2006. The prices provided were for Wyoming PRB coal, with 8,800 Btu per pound and an SO₂ emission rate of 0.80 pounds per MMBtu, and were quoted FOB mine. (TR 259-260; EXH 2, p. 2919) This is the same type of Wyoming PRB used by the Commission in the Refund Order. This type of PRB coal is the standard, typical PRB coal that is offered in the market. (TR Heller 91, 606, Putman 492, Weintraub 562-563; EXH 2, p. 2700) Staff notes that the average spot price for 2006 for 8,800 Btu/lb PRB, with a 0.80 SO₂ emissions rate, was \$12.84 per ton. (TR 259-260; EXH 2, p. 2919) Staff used this price in calculating excessive coal cost for 2006. (Attachment A)

Attachment A contains information for staff's cost-effectiveness test as well as for staff's excess cost calculation using the average spot price. The cost-effectiveness test subtracts the

evaluated⁹ price of PRB coal, \$3.24/MMBtu [Column (c), Table A], from the delivered price of CAPP coal, \$3.30/MMBtu [Column (b), Table A]. The evaluated PRB coal price includes the additional capital and operating costs per MMBtu necessary for burning a blend of 20 percent PRB coal. The difference, \$0.06 [Column (d), Table A], is the test result's price component. The positive difference in 2006 and the positive difference in pounds of SO₂ per MMBtu in Column (d) of Table C indicate that the 80/20 blend was cost-effective.

As noted in Issue 1A, although the capital and operating costs per MMBtu are necessary for determining cost-effectiveness, fuel cost recovery amounts do not include those types of costs. (See also the Refund Order, pp. 38-39 and p. 51) Therefore, the refund calculation subtracts the delivered price of PRB coal from the delivered price of CAPP coal without including the capital component.

Staff's refund calculation for 2006 uses 432,229 tons, as noted above in this issue. The heat content of this proxy PRB coal is 17.6 MMBtus per ton (17.6 MMBtus per ton equates to 8,800 Btus per pound). Delivered price in \$/MMBtu is the variable in the refund component. The two delivered prices are \$3.30/MMBtu (CAPP) and \$3.11/MMBtu (PRB). Staff's emissions-credit refund calculation uses an additional constant, \$731/ton of SO₂. Pounds of SO₂ per MMBtu is the variable in the emissions-credit component. The SO₂ emission rates for CAPP coal and the PRB proxy coal are 1.07 pounds per MMBtu and .8 pounds per MMBtu, respectively.

Based on the above calculation, the excessive coal cost refund amount for 2006, exclusive of excess costs related to SO₂ emissions, is \$1,445,374. (Attachment A, Table A, Column j) Staff's excess SO₂ emissions costs are calculated to be \$750,720. The total excess coal and SO₂ emissions costs for 2006 are \$2,196,094. (Attachment A)

Conclusion

Staff recommends that the Commission find PEF incurred excessive coal costs of \$2,196,094 for CR4 and CR5 in 2006. This is based on 432,229 tons of PRB coal with a delivered price of \$3.11 per MMBtu and an SO₂ emission allowance price of \$731 per ton.

⁹ For purposes of this calculation, staff has used "evaluated" to mean delivered price including an allowance for capital additions needed to burn the blend.

Issue 1D: What candidates for alternative coal purchases should the Commission consider in evaluating whether more economical coal was available for delivery to Crystal River Units 4 and 5 during 2007?

Recommendation: For the 80/20 blend, the Commission should use PRB coal with a heat content of 8,800 Btu per pound and an SO₂ emission rate of 0.80 pounds of SO₂ per MMBtu as the proxy coal candidate for cost-effectiveness evaluation and excess cost calculation for 2007. (Lee, Sickel, Thompson)

Position of the Parties

PEF: None, other than the Wyoming PRB coal that the Commission heard evidence on and considered in Docket 060658.

OAG: Adopts the position stated by OPC.

OPC: Consider two Indonesian bids of sub-bituminous coal that PEF ranked as the two lowest evaluated costs in its 2006 RFP. Indonesia is a leading producer of coal for international markets. The coals had low ash and low sulfur, both valuable properties. The Indonesian bids were far more economical than Louis Dreyfus' PRB bid to the same RFP. Precisely the same reasons that prevented PEF from purchasing PRB coal during 2003-2005 precluded PEF from purchasing Indonesian sub-bituminous coal in 2006. Those reasons compelled a refund in Docket No. 060658-EI, and do so again in this proceeding.

FIPUG: Agree with OPC foreign sub bituminous coal should be considered along with Powder River Coal.

Staff Analysis: As in Issue 1B, the parties submitted two candidates for the Commission to consider in evaluating whether more economical coal was available for delivery to CR4 and CR5 during 2007. OPC submitted sub-bituminous coal from Indonesia. (TR 289) PEF submitted a Wyoming PRB based on a bid from its February 2006 RFP along with witness Heller's transportation costs. (TR 177)

OPC stated that when PEF solicited bids in 2006, two producers of Indonesian coal submitted offers. OPC claimed that PEF scored the Indonesian coal offers on the same evaluated basis as the other bids it received and ranked the bids as first and second. OPC witness Putman recommended the Commission use a sub-bituminous coal from Indonesia for evaluating cost-effectiveness. (OPC BR at 26; TR 283-285; EXH 20, p. 2 of 3, EXH 21)

PEF argued that this Indonesian coal differed from the PRB coal that the Commission considered in Docket No. 060658-EI. Therefore, PEF asserted that based on the Refund Order, the Commission should use Wyoming PRB coal as the only candidate for alternative coal purchases for delivery to CR4 and CR5 during 2006 and 2007. (PEF BR at 2, 13, TR 540-541) As discussed in Issue 1B, staff believes Wyoming PRB was the coal specified by the Refund Order. The PRB coal used in the Refund Order had a heat content of 8,800 Btu per pound and an emission rate of 0.80 pounds of SO₂ per MMBtu. (Refund Order p. 51, TR 562-563)

PEF's ability to burn Wyoming PRB is not an issue here because the Refund Order specified it as a candidate to burn. However, staff believes PEF cannot ignore other coals just because they were not specified by the Refund Order. PEF has a process to evaluate new coals, and PEF witness Weintraub testified that the process does not automatically preclude specific types of coal. (TR 114) Based on the fact that those bids ranked high in PEF's short list after initial evaluation, staff believes PEF did not automatically preclude Indonesian coals. However, because the Indonesian coal was considered a new type of coal, PEF's evaluation of the cost impact involved more than just price comparison. (Weintraub TR 44-47; Stenger TR 654-661)

As discussed in Issue 1B, witness Putman agreed that new coals should be evaluated based on test burns, evaluation of operational issues, etc. (TR 320, 329, 392) Witness Putman noted that a coal switch can be very expensive in terms of equipment and operating costs, and fuel savings are compared with this hurdle over the long term, not just one year. (TR 342-343) He agreed that to burn Indonesian coal, which has extremely low sulfur content, some coal units may need new incremental capital additions such as a sulfur injection system. (TR 390-391)

Indonesian Coals Evaluated Cost

Based on OPC witness Putman's review of PEF's 2006 RFP Evaluation Sheet, OPC and the intervenors argued that Indonesian coal had the lowest delivered cost for 2007. (OPC BR at 25-28; TR 283-284; EXH 21) Witness Putman admitted that he focused solely on price comparison. (TR 282) However, he agreed that the projections in the 2006 RFP Evaluation Sheet were based on a set of circumstances that may differ from what ultimately occurs, and he did not dispute a supplier may place a bid and then find a better deal elsewhere. (TR 369-370; TR 384)

PEF countered that a RFP evaluation is not the only decision point for the 2007 delivery and that PEF's process considers price as well as non-price factors that affect total cost. (Weintraub TR 44-47; Stenger TR 654-661). The PEF witness accused OPC witness Putman of making incorrect assumptions, and asserted that after adjusting the penalty impact for underutilization provisions in PEF's barge contract, double-counting of SO₂ allowance costs, and other incorrect assumptions, the actual costs of Indonesian coals would be significantly higher. (Weintraub TR 372-375, 546-552)

Availability of Indonesian Coal

PEF stated that Indonesian coal may not have been available to purchase for 2007. According to PEF witness Weintraub, the prospective Indonesian supplier became unresponsive regarding its 2006 bid. (TR 58, 344, 385; EXH 2, p. 2722)

OPC noted that witness Weintraub stated that PT Adaro became unresponsive during the second of two meetings between PEF and PT Adaro. OPC claimed that the second meeting occurred in May of 2006. OPC believed that such a decline in interest, if it existed, would not have meant that PT Adaro would not have signed a contract. OPC explained that a respondent to an RFP who was found to have submitted a bid without having coal to sell would see its reputation damaged in the industry. OPC concluded that it is highly unlikely that PT Adaro would have risked its reputation by submitting anything other than a real bid. OPC asserted that

PT Adaro was a substantial player in the international market. OPC also opined that PT Adaro may have concluded that PEF was not a serious buyer at the time of PT Adaro's bid. (OPC BR at 30-32)

Witness Putman agreed with PEF that the Indonesian coal suppliers may have sold the coal elsewhere that they had offered to PEF. (TR 385-387) Regarding the coal supply reliability issue, witness Putman agreed that Asia is a better place for Indonesia to sell their coal; only occasionally is there a competitive advantage to bringing it to the United States. (TR 385)

OPC witness Putman testified that while Indonesia's primary markets are India and parts of Asia, they do offer coal to other markets when additional opportunity presents itself. OPC gave the example that Tampa Electric Company purchased Indonesian coal from PT Adaro in commercial quantities for several years in the 1990s. (OPC BR at 28, TR 349)

Staff does not believe Indonesian coal is an appropriate proxy coal for 2007. As noted in Issue 1B, staff does not believe prices from an RFP evaluation reflect what actual cost would have been. Staff also notes that Indonesian coal, while a sub-bituminous coal, is different from typical PRB coal. As demonstrated by PEF, a new coal with new characteristics would require testing. PEF would not have been able to test Indonesian coal, based on the price signal it received from the 2006 RFP, so that it could have been burned during 2007. Further, staff believes the record is inconclusive regarding whether Indonesian coal would have been available for PEF to purchase in 2007.

Choice of PRB Coal

For his 2007 proxy coal price, PEF witness Heller used the "least costly" bid price of \$10.75 a ton, which is based on the Louis Dreyfuss bid with a two-year term from PEF's February 2006 RFP. The heat content of this coal was 8,200 Btu per pound and the SO₂ emission rate was 1.2 pounds per MMBtu. (TR 176-177; EXH 2, pp. 2909-2910, EXH 8, EXH 10, EXH 21) Witness Heller states that his 2007 PRB coal proxy price is below the 2007 index price. (TR 177) Staff disagrees with witness Heller's proxy coal choice because, as noted in Issue 1B, prices from bid responses are used to rank bids and are the beginning point for negotiating a contract price. A bid price is not the final price but is a stepping off point for negotiations between the bidder and the potential purchaser.

Staff further disagrees with witness Heller's proxy 2007 PRB coal because it has high sulfur content for PRB coal – 1.2 pounds of SO₂ per MMBtu. (TR 180) Staff notes that PRB coal is typically low in sulfur content. (TR 173, 631) The proxy coal that staff recommends has a SO₂ emission rate of 0.80 pounds per MMBtu. As discussed in Issue 1C, this is the typical, low sulfur PRB coal.

Conclusion

Staff believes the appropriate proxy coal for 2007 is PRB coal with a heat content of 8,800 Btu per pound and an emission rate of 0.80 pounds of SO₂ per MMBtu. This is the standard, typical PRB coal that is offered in the market and it is the type of PRB coal used in the Refund Order. (TR Weintraub 91, 562-563, Putman 492, Heller 606; EXH 2, p. 2700)

Issue 1E: By what amount, if any, were the costs of coal actually delivered to Crystal River Units 4 and 5 unreasonably high in 2007?

Recommendation: Staff recommends that the Commission find PEF incurred excessive coal cost of \$5,502,813 for Crystal River 4 and 5 in 2007. This is based on 462,200 tons of PRB coal with a delivered price of \$2.88 per MMBtu and an SO₂ emission allowance price of \$524 per ton. (Thompson, Matlock, Breman)

Position of the Parties

PEF: None. To the contrary, PEF's coal procurement activities saved PEF's customers millions of dollars in fuel costs during 2006 and 2007.

OAG: Adopts the position stated by OPC.

OPC: Comparing the evaluated costs of the 2006 Indonesian bids with the 20 percent highest costing tons actually delivered in 2007, the 2007 coal costs at CR4 and CR5 were unreasonably high by the amount of \$13 million – \$13.6 million, excluding interest. In addition, the Indonesian coal contained far less sulfur than the coal actually delivered in 2007, and would have enabled PEF to save customers \$5 million – \$5.3 million in the form of lower costs of emissions allowances.

FIPUG: \$13,647,445 in coal charges, \$5,337,520 in environmental charges.

Staff Analysis: Based on the methodology recommended in Issue 1A and the recommendation of PRB coal in Issue 1D, the calculation of the cost-effectiveness test and any excess coal costs for 2007 is presented in this issue. Staff discusses necessary inputs to the methodology such as quantities of coal, the price of the PRB proxy coal, transportation costs, and SO₂ allowance prices. The calculations are presented in Attachment A.

For this issue, the parties arguments regarding the inputs to the methodology are similar to their arguments in Issue 1C.

Appropriate Coal Costs

As discussed in Issue 1C, staff believes that the average spot price for PRB coal is the most appropriate proxy. This spot price is based on actual market transactions.

Staff recommends using the average spot price for 8,800 Btu/lb PRB coal with 0.80 SO₂ emissions rate, as this is a price that could be reasonably obtained by PEF for the necessary quantity needed for an 80/20 blend. In 2007, staff notes that the average spot price for 8,800 Btu/lb PRB with 0.80 SO₂ emissions rate was \$9.65. (TR 259-260; EXH 2, p. 2920)

Appropriate Tons of Coal

As discussed previously in Issue 1C, the Refund Order assumed that coal blending would be done off-site. (Order No. PSC-07-0816-FOF-EI, pp. 28-31) Therefore, staff agrees with the

tonnages from witness Heller's rebuttal testimony and recommends 462,200 tons as the appropriate tons for purposes of calculating excessive coal costs for 2007. (TR 589; EXH 31)

Appropriate Transportation Costs

The Refund Order methodology is based on delivered costs, which requires adding transportation costs to the price of coal. PEF witness Heller developed transportation costs for 2007 for shipping PRB coal from origins in Wyoming to CR4 and CR5. Witness Heller used costs based on the necessary transportation segments as proxies for the costs of shipping PRB coal to CR4 and CR5. He obtained the specific costs from FERC Form 423 data, his own estimates, and material provided by PEF. (TR 172, 177-180; EXH 8, EXH 10)

The transportation segments included:

- Ship the coal by rail to Cora Dock near St. Louis, MO (TR 178; EXH 8; EXH 10)
- Transload the coal into a river barge (TR 178; EXH 8; EXH 10)
- Ship the coal to Davant, LA or to International Marine Terminal (IMT) near New Orleans, LA (TR 178; EXH 8; EXH 10)
- Blend the coal with CAPP or imported coal (TR 179; EXH 8; EXH 10)
- Transload the coal blend into an ocean barge (TR 179; EXH 8; EXH 10)
- Ship the coal blend to CR4 and CR5 (TR 179-180; EXH 8; EXH 10)
- Include demurrage and other miscellaneous costs (TR 179; EXH 8; EXH 10)

As addressed in Issue 1C, staff believes PEF witness Heller's transportation calculations are an appropriate proxy in determining the delivered cost of PRB coal. These calculations are closer to actual transportation costs for transportation segments for PRB coal than that of OPC witness Putman's transportation costs which were embedded in PEF's Evaluation Sheets.

Appropriate SO2 Allowance Costs

As discussed in Issue 1C, staff recommends that the appropriate proxy coal for the 80/20 blend is PRB coal with a heat content of 8,800 Btu per pound and an SO2 emission rate of 0.80 pounds SO2 per MMBtu. The calculation of the excess SO2 allowance costs is the same as in Issue 1C. Staff used the recommended tons of PRB coal for 2007 and the actual 2007 market price of \$524 per ton for SO2 emission allowances. (TR 552, 589; EXH 31) The excess SO2 allowance costs for 2007 is \$703,328.

Calculation of Excessive Coal Costs for 2007

Staff applied the methodology recommended in Issue 1A to the costs in this issue to conclude that PEF incurred excessive coal costs of \$5,502,813 in 2007. This amount consists of

\$4,799,485 based on the difference between the delivered prices of CAPP coal and PRB coal, and \$703,328 based on the difference between SO₂ emissions allowances of CAPP coal and PRB coal. Attachment A contains the price and emissions calculations with supporting components. Staff explains the calculations below.

Staff's refund calculation for 2007 uses 462,200 tons, as noted above in this issue. The heat content of this proxy PRB coal is 17.6 MMBtus per ton (17.6 MMBtus per ton equates to 8,800 Btus per pound). Delivered price in \$/MMBtu is the variable in the refund component. The two delivered prices are \$3.47/MMBtu (CAPP) and \$2.88/MMBtu (PRB). Staff's emissions-credit refund calculation uses an additional constant, \$524/ton of SO₂. Pounds of SO₂ per MMBtu is the variable in the emissions credit component. The SO₂ emission rates for CAPP coal and the PRB proxy coal are 1.13 pounds per MMBtu and .8 pounds per MMBtu, respectively.

Based on the above calculation, the excessive coal cost refund amount for 2007, exclusive of excess costs related to SO₂ emissions, is \$4,799,485. (Attachment A, Table A, Column j) Staff's excess SO₂ emissions costs are calculated to be \$703,328. The total excess coal and SO₂ emissions costs for 2007 are \$5,502,813. (Attachment A)

Conclusion

Staff recommends that the Commission find PEF incurred excessive coal costs of \$5,502,813 for CR4 and CR5 in 2007. This is based on 462,200 tons of PRB coal with a delivered price of \$2.88 per MMBtu and an SO₂ emission allowance price of \$524 per ton.

Issue 2: If the Commission determines that costs of coal delivered to Crystal River Units 4 and 5 during 2006 and 2007 were unreasonably high, should it require PEF to issue a refund to its customers? If so, in what amount?

Recommendation: Yes. If the Commission finds the costs of coal delivered to Crystal River Units 4 and 5 during 2006 and 2007 were unreasonably high in issues 1C and 1E, the Commission should require PEF to issue a refund to its customers. The amount of the refund is addressed in Issue 1C and Issue 1E. Staff recommends recognizing the refund amount, plus interest, during the 2009 fuel proceeding. This approach would affect customer bills in 2010 and not require administrative filings to implement. (A. Roberts)

Position of the Parties

PEF: No. Based on the evidence that the Commission heard in this matter, such a determination would not be based on competent, credible evidence and would constitute reversible error.

OAG: Adopts the position stated by OPC.

OPC: Yes. One of the Commission's most important functions is to insulate customers from having to bear costs that have been made unreasonably high as a consequence of utility imprudence. In this instance, the Commission should order Progress Energy to refund to customers the amount of \$35,575,517 plus interest.

FIPUG: Yes, it should order a \$35,575,517 one time summer credit on customer bills plus additional accrued interest.

Staff Analysis: There are three principal options for implementing a refund: (1) issue a one-time credit, (2) refund the amount over the remaining months of 2009, or (3) incorporate the refund amount in the 2009 fuel hearing to be reflected in customer bills in 2010. The three options are discussed below.

PEF does not believe a refund is warranted in this case. However, in response to staff's interrogatory No. 45 (EXH 2, p. 472) PEF stated that any refund should be handled in the same manner the Commission ordered the refund in Docket No. 060658-EI. In the Refund Order, the Commission determined that the refund take place through the 2007 fuel clause proceeding and be deducted from PEF's 2008 fuel factors. OAG and OPC did not express an opinion about how the refund should be made. While in its position statement FIPUG stated that the Commission should order a one time credit, in its actual brief, FIPUG asserted that beginning the refund in August of 2009 for the remainder of the year would reduce PEF customer's average fuel charge and help offset the base rate increase the Commission approved for interim rates in PEF's base rate case (Docket No. 090079-EI) and the Bartow plant (Docket No. 090144-EI). (FIPUG BR at 2-3)

One-time Credit

Florida Power & Light Company was recently ordered to refund customers in the form of a one-time refund on customers' bills for a power outage at Turkey Point Unit 3.¹⁰ If a similar approach is approved in this docket, the one-time credit option would be applied to PEF retail customers of record as a cent per kilowatt-hour credit in the month the refund is made. If a refund is ordered, PEF should notify its customers of the Commission's decision through a bill insert or note added to a customer bill stating that a credit was made and the amount of the credit. If the Commission chooses the one-time credit option, the refund should be issued beginning with the first day of the first billing cycle 30 days after the final order is issued.

Remaining Months

The second option would be to require PEF to implement the refund over the remaining months of 2009. This option would require the company to resubmit its approved 2009 factors to incorporate the refund amount; this could result in a small reduction in customers' monthly bills depending on the amount of refund ordered by the Commission. If exercised, staff seeks the Commission's approval for administrative authority to review and approve PEF's filing.

2010 Adjustment

The third option, which staff is recommending, is to recognize the refund amount, including interest, during the 2009 fuel proceeding. This approach would affect customer bills in 2010, and not require administrative filings to implement, or additional changes to customers' bills in 2009. PEF customers are already scheduled to see base rate changes beginning with the first billing cycle in July 2009, due to the rate case interim and the Bartow Repowering project. Unless the refund could be effective with the first billing cycle in July 2009 as well, customers will see their bill increase then decrease within a short period, which could cause confusion. Previously, in the Refund Order, the Commission ordered a refund that was implemented in this manner. Treatment in the 2010 fuel factor has the advantages of administrative simplicity, rate stability, and grants refunds to customers shortly after the issuance of the order.

Staff notes that the recommended excess cost amounts from Issue 1 are based on total system costs. Therefore, for purposes of a refund, the excess cost amount is a system number and should be jurisdictionalized in the fuel proceeding.

Conclusion

If the Commission finds the costs of coal delivered to Crystal River Units 4 and 5 during 2006 and 2007 were unreasonably high in issues 1C and 1E, the Commission should require PEF to issue a refund to its customers. The amount of the refund is addressed in Issue 1C and Issue 1E. Staff recommends recognizing the refund amount, plus interest, during the 2009 fuel proceeding. This approach would affect customer bills in 2010 and not require administrative filings to implement.

¹⁰ Order No. PSC-09-0024-FOF-EI, issued January 7, 2009, in Docket No. 080001-EI, In re: Fuel and purchased power cost recovery clause with generating performance incentive factor.

Issue 3: Based on the evidence of PEF's fuel procurement approach and activities as they relate to Crystal River 4 and 5, what additional action, if any, should the Commission take in this docket?

Recommendation: The Commission should order PEF to file a report as part of its projection testimony due on September 1, 2009, in the fuel docket, Docket No. 090001-EI. The report should address the current status of plant modifications and any remaining issues that were recognized in the Refund Order. Further, the report should address PEF's additional efforts, including test burns of new coals that create opportunities to achieve the lowest fuel costs. PEF should demonstrate how its coal procurement activities are continually looking for short-term and long-term opportunities in the coal markets, including continually exploring coal markets and new coal supply worldwide. Any future application of the methodology should compare total actual costs for a period to the total costs that would have resulted from a particular blend, taking into account the coal that would have actually been displaced. (Lester, Breman, Sickel)

Position of the Parties

PEF: The Commission should close this docket.

OAG: Adopts the position stated by OPC.

OPC: To prevent PEF from wasting a valuable asset for which its customers have been paying, the Commission should direct PEF to conduct a test burn of blends designed to ascertain the highest percentage of sub-bituminous coal that can be used in a blend while maintaining 105 percent overpressure and satisfying all environmental requirements. The tests should be overseen by an independent engineering firm. The report should be furnished to the Commission by a date certain. If the results support the use of a blend containing more than 20 percent sub-bituminous coal, PEF should apply to the FDEP to have its permit amended.

FIPUG: Customers have suffered four ways from PEF's imprudence. These are: higher fuel costs; higher emission costs; higher returns and annual depreciation charges on the over built portion of two power plants. To avoid a multiplicity of annual actions to calculate and litigate fuel cost refund credits every year until PEF gets the proper permits FIPUG recommends that PEF be required to continue to operate CR 1, 2, 4, and 5 without further capital carrying costs until the proposed Levy County Nuclear plant becomes operational.

Staff Analysis: PEF obtained a permit to burn PRB coal and other sub-bituminous coal in May 2007. (EXH 2, pp. 71 and 484) Since then, PEF has not conducted a test burn of any sub-bituminous coals.

OPC witness Putman stated that PEF's Crystal River plants can burn a variety of coals and that the facility is in a good location for obtaining coal from all over the world. He stated that PEF's fuel procurement activities have not been energetic and proactive in taking advantages of the location of CR4 and CR5 to lower fuel costs. (TR 300-302) According to witness Putman, fuel procurement practices should attempt to establish competition among supply basins and transportation modes. (TR 302) He noted that new barge unloading capacity at Crystal River would lower fuel costs, and he suggests that PEF has been slow in installing new

barge unloading capacity. (TR 303) He further suggested that PEF could have applied to DEP to burn a sub-bituminous coal blend greater than 20 percent, but PEF has not conducted a test burn for such blends. (TR 304-306; EXH 27, 28, 29) Witness Putman indicated that installing scrubbers at CR4 and CR5 will enhance, and not detract from, PEF's fuel flexibility with these units. (TR 306)

PEF witness Stenger noted that the evaluation of opportunity coals takes time and involves predictive modeling, planning for test burns, and conducting test burns of various lengths. The timeline for test burns involves permitting and engineering studies. (TR 624-625, 666; EXH 45, EXH 46)

Witness Stenger noted that PEF has a fuel flexibility program. The program is exploring burning different types of coal at CR4 and CR5. Witness Stenger indicated that high sulfur Illinois Basin coal that could be used after PEF installs scrubbers and other environmental equipment at CR4 and CR5. The scrubbers are expected to become operational during 2010. (EXH 2, pp. 2732-2733; EXH 2, p. 81) Prospectively, PEF believes that blends with high sulfur Illinois Basin coal will be significantly more economical than blends with sub-bituminous coals. However, PEF stated that it will resume testing blends with sub-bituminous coals if such blends would be economical on a sustained basis. (EXH 2, p. 476)

The Refund Order stated that PEF had not sought the appropriate revisions to its environmental permit, had not conducted test burns of PRB coal, had not modified CR4 and CR5 to burn PRB coal on a long-term basis, and had not purchased PRB coal. (Refund Order, pp. 34-35) Since the issuance of the Refund Order, as noted above, PEF has obtained the appropriate environmental permitting for burning an 80/20 CAPP/PRB blend. In addition, PEF conducted a May 2006 test burn of a blend with PRB coal and proceeded with a fuel flexibility program. (TR 633; EXH 59)

PEF has made capital improvements to CR4 and CR5 to allow for the option of burning different types of coal, including PRB coal. (TR 692-694; EXH 59) According to witness Stenger, PEF has made the following improvements to CR4 and CR5 to allow for burning sub-bituminous coal:

- Modifying the air permit
- Making soot blowers operational
- Installing a mill inerting system
- Funded the installation of fogging and misting in the cascade room
- Refurbishment of the conveyor (TR 692-693, 695-697; EXH 59, p. 4)

However, at the time of the hearing, PEF had not begun installation of dust suppression systems in the north and south coal yards, and PEF had not conducted a longer test burn with PRB coal. (TR 696-697; EXH 59, p.4)

In its brief, FIPUG argued that PEF should not be permitted to profit from its failure to improve CR4 and CR5. (FIPUG BR at 2-3). FIPUG's position holds that carrying costs should

not be recovered until PEF has restored CR4 and CR5's capability to burn cost-effective coal. It is staff's opinion that FIPUG's suggestion is an issue more appropriate to a base rate proceeding rather than a spin off of the fuel clause.

OPC argued in its brief that the Commission should require PEF to take all actions necessary to ensure that it can utilize the fuel flexibility customers paid for. (OPC BR at 36) In its position statement, OPC argued that PEF should be directed to conduct a test burn of blends to ascertain the highest percentage of sub-bituminous coal that can be blended. Once the test has been conducted, PEF should be required to amend its Federal Air Permit. (OPC BR at 35)

Staff believes the appropriate policy requirement is that PEF should utilize the full capability and flexibility of CR4 and CR5 in a way that results in the lowest costs consistent with safety and reliability. To achieve this, the Commission should order PEF to file a report as part of its projection testimony due on September 1, 2009, in Docket No. 090001-EI.

This report should specifically address full compliance with Order No. 07-0816-FOF-EI regarding plant modifications including proposed timelines and any other efforts such as test burns of coals from various supply basins having variant content or characteristics, which may create opportunities and allow PEF to achieve lowest cost fuels. PEF should include summary information on the current status of modifications and any remaining issues that were recognized in the Refund Order. This information should begin with the modifications PEF has done and comprehensively explain what PEF currently plans to do, with justification and projected timelines included.

PEF should demonstrate how its coal procurement activities are continually looking for short-term and long-term opportunities in the coal markets, including continually exploring coal markets and coal supply basins worldwide. The results of initial procurement activities should flow into the evaluation activities that have been described by witness Stenger. (TR 624-625, 666; EXH 45, EXH 46)

As noted in Issue 1A, the cost-effectiveness/refund methodology assumed that the blend coal, i.e., the 20 percent part of the blend, displaces the most expensive coal that was actually burned. (TR 176, 287; OPC BR at 3) PEF stated that this could introduce bias into the methodology because the most expensive coal may not always be the coal that could have been displaced. (EXH 2, p. 54 and p. 62) Staff notes that both PEF witness Heller and OPC witness Putman applied the methodology in the same manner: The blend coal was assumed to displace the most expensive coal that was actually burned. (TR 171, 182-183; TR 274-275, 278-309) Staff believes that this assumption may introduce bias to the methodology. Therefore, any future application of the methodology should compare total actual costs for a period to the total costs that would have resulted from a particular blend, taking into account the coal that would have actually been displaced.

Conclusion

The Commission should order PEF to file a report as part of its projection testimony due on September 1, 2009 in the fuel docket, Docket No. 090001-EI. The report should address the current status of plant modifications and any remaining issues that were recognized in the

Refund Order. Further, the report should address PEF's additional efforts, including test burns of new coals that create opportunities to achieve the lowest fuel costs. PEF should demonstrate how its coal procurement activities are continually looking for short-term and long-term opportunities in the coal markets, including continually exploring coal markets and new coal supply worldwide. Any future application of the methodology should compare total actual costs for a period to the total costs that would have resulted from a particular blend, taking into account the coal that would have actually been displaced.

Docket No. 070703-EI

Date: June 18, 2009

Issue 4: Should this docket be closed?

Recommendation: Yes. The docket should be closed after the time for filing an appeal has run.
(Bennett)

Staff Analysis: The docket should be closed 32 days after issuance of the order, to allow the time for filing an appeal to run.

Excess 2006-2007 Coal and SO2 Costs at CR4 and CR5 and Recommended Fuel Refund

A. Excess 2006-2007 Coal Costs at CR4 and CR5 and Recommended Fuel Refund (exclusive of SO2 credit adjustment and interest adjustment)

a Year	b CAPP Delivered Price (\$/MMBtu)	c PRB Adjusted Evaluated Price (\$/MMBtu)	d Price Difference (\$/MMBtu)	e PRB in Tons	f MMBtu	g Net Excess Costs	h PRB (Proxy) Delivered Price (\$/MMBtu)	i Difference of CAPP and PRB Delivered Prices	j Coal Costs Refund (via Fuel Clause)
2006	3.30	3.24	0.06	432,229	7,607,230	\$445,374	3.11	0.19	\$1,445,374
2007	3.47	3.00	0.47	462,200	8,134,720	\$3,799,485	2.88	0.59	\$4,799,485
TOTAL EXCESS COAL COSTS, 2006-2007						\$4,244,860			\$6,244,859

- b: Delivered price of CAPP coal per witnesses Putman and Heller. See EXH 9 and EXH 20.
- c: EXH 13, \$1 million annual revenue requirement divided by PRB MMBtus in column F plus the PRB coal costs in column H.
Staff's adjustment to recognize estimated capital recovery requirement.
- d: b - c
- e: EXH 31 JNH-8 Column 1 + JNH 10
- f: Column E tons x 2,000 lb/ton x .0088 MMBtu/lb, equal to the MMBtus derived from PRB coal at 20% blend
- g: d x f
- h: EXH 8 JNH-2 offers the transportation prices for each year. The 2006 total of \$41.87 is calculated using 2007 rail rate, rail to barge transloading and barge to deviant charges in conjunction with the transloading, blending, and other costs as well as the Gulf Barge Transport rate. \$41.87 + \$12.84 (FOB mine price for PRB) = \$54.71/ton \$54.71/17.6 = \$3.11/MMBtu. For 2007, the transportation price is \$40.98 + \$9.65 = \$50.63. \$50.63/17.6 = \$2.88/MMBtu.
- i: (b - h)
- j: ix f

B. Excess 2006-2007 Costs Related to SO2 Allowances at CR4 and CR5 and Recommended Fuel Refund

a Year	b Avg. Lbs SO2 per MMBtu (CAPP)	c Avg. Lbs SO2 per MMBtu (PRB Proxy)	d Increased SO2 (lbs. per MMBtu)	e MMBtu	f Excess SO2 lbs.	g Excess SO2 tons	h SO2 Price (\$/ton)	i Excess SO2 Cost
2006	1.07	0.80	0.27	7,607,230	2,053,952	1,026,976	731	\$750,720
2007	1.13	0.80	0.33	8,134,720	2,684,458	1,342,229	524	\$703,328
TOTAL EXCESS SO2 COSTS, 2006-2007								\$1,454,048

- b: EXH 24, Witness Putnam
- c: the SO2 emission rate for PRB assumed in Order No. PSC-07-0816-FOF-EI.
- d: b - c
- e: Attachment A Page 1 of 2
- f: (d x e)
- g: (b x c)/2,000 lbs
- h: The average market price of SO2 emission allowances for 2006 and 2007 (EXH 30)
- i: (g - h)

C. Excess 2006-2007 Coal and SO2 Costs and Recommended Fuel Refund

a Year	b	c	d	e	f Coal Costs Refund (via fuel clause)	g Excess SO2 Cost	h Refund Total
2006					\$1,445,374	\$750,720	\$2,196,094
2007					\$4,799,485	\$703,328	\$5,502,813
TOTAL EXCESS COAL AND SO2 COSTS (ADJUSTED) AND FUEL (exclusive of interest adjustment)							\$7,698,907