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July 15, 2009

William Stephens  
Howard Spinner  
Cody Walker  
Virginia State Corporation Commission  
P.O. Box 1197  
Richmond, Virginia 23218

Re: Case No. PUE-2000-00551

Dear Messrs Stephens, Spinner and Walker:

This letter and associated report are provided in accordance with paragraph 2 of the Partial Stipulation in Case No. PUE-2000-00551, as approved on November 10, 2004 and as amended on February 6, 2007. The associated data files are being provided separately.

Paragraph 2 of the Partial Stipulation, as amended, states:

6. PJM will provide annual reports to the Commission detailing the following information:
  - (a) A description of transmission constraints impacting Dominion Virginia Power's service territory within Virginia and the events leading up to such constraints. Such description should include an estimate of the congestion costs associated with each event.
  - (b) The actual locational marginal prices by bus impacting Dominion Virginia Power's service territory within Virginia, including a separate identification of the congestion component of such prices.
  - (c) Such reports will be provided annually beginning one year from the Company's actual integration date into PJM and ending in 2010. Beginning in calendar year 2007, such reports will be filed on or before July 15 of each year for which they are due.

The Market Monitoring Unit is available to respond to questions about the report and associated data.

Please contact me if you have any questions.

Sincerely,

Joseph E. Bowring  
Independent Market Monitor for PJM  
President  
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Monitoring  
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**REPORT TO THE VIRGINIA STATE  
CORPORATION COMMISSION  
Congestion in the Dominion Service  
Territory in Virginia:  
May 1, 2008 through April 30, 2009**

The Independent Market Monitor for PJM

July 15, 2009

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## Overview of Congestion Calculations

This report provides details of congestion associated with Dominion Virginia Power's (Dominion) service territory within the state of Virginia for the periods of May 1, 2007, to April 30, 2008 (2007/2008), and May 1, 2008, through April 30, 2009 (2008/2009). Congestion calculations are for the entire territory and not for any specific organization. The total congestion is the sum of all congestion for the organizations with market activity in the area. The report also includes congestion event hours for the constraints which had the largest impact on congestion charges in Dominion, either positive or negative, and the congestion charges associated with each constraint. <sup>1</sup>

Total congestion costs equal net congestion costs plus explicit congestion costs. Net congestion costs equal load congestion payments minus generation congestion credits.<sup>2</sup> Explicit congestion costs are the net congestion costs associated with point-to-point energy transactions. Each of these categories of congestion costs is comprised of day-ahead and balancing congestion costs. Day-ahead congestion costs are based on day-ahead MW while balancing congestion costs are based on deviations between day-ahead and real-time MW priced at the congestion price in the Real Time Energy Market. <sup>3</sup>

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<sup>1</sup> Congestion event hours are hours in which a transmission constraint is binding. In day ahead, an interval equals one hour. In real time, an interval equals five minutes. In order to have a consistent metric for day-ahead and real-time congestion frequency, real-time congestion frequency is measured using the convention that an hour is constrained if any one of its component five-minute intervals is constrained.

<sup>2</sup> Prior to June 1, 2007, PJM Congestion Accounting methods included implicit congestion costs, spot congestion costs, and explicit congestion costs. After June 1, 2007, PJM no longer calculates spot congestion costs. Implicit congestion costs are now equal to the difference between load congestion payments and generation congestion credits, i.e. net congestion. Explicit congestion costs remained the same after June 1, 2007.

<sup>3</sup> See Table 10, "Congestion Definitions," for a summary of relevant definitions.

Table 1 shows a summary of the congestion costs associated with the Virginia portion of the Dominion service territory starting May 2007. Table 2 shows a monthly breakdown of congestion costs.

**Table 1 Total Dominion Virginia congestion costs (Dollars (Millions)): May 1, 2007 through April 30, 2009**

	Congestion Costs	Percent Change
2007/2008	\$300.1	NA
2008/2009	\$294.3	(2%)
Total	\$594.3	

**Table 2 Monthly Dominion Virginia congestion costs (Dollars (Millions)): May 1, 2007 through April 30, 2009**

	Total Congestion Costs		
	2007	2008	2009
Jan		\$35.7	\$15.3
Feb		\$20.7	\$7.7
Mar		\$6.8	\$9.5
Apr		\$16.6	\$1.7
May	\$16.1	\$28.6	
Jun	\$31.4	\$67.3	
Jul	\$41.1	\$71.1	
Aug	\$25.9	\$34.6	
Sept	\$33.5	\$24.3	
Oct	\$22.4	\$16.9	
Nov	\$26.3	\$8.8	
Dec	\$23.6	\$8.5	

Congestion at any point on the system can be expressed as a component of LMP measured relative to the system marginal price (SMP). The SMP is equal to the load weighted system price for the entire footprint. The price at the load weighted reference bus is called the system marginal price SMP. At the load weighted system reference bus there is no congestion and there are no marginal losses. The congestion component of LMP (CLMP) at any point on the system is calculated with respect to the SMP. When a transmission constraint occurs, the resulting CLMP is positive on one side of the constraint and negative on the other side of the constraint and the corresponding congestion costs are positive or negative. For each transmission constraint, the CLMP reflects the cost of the constraint at a pricing node and is equal to the product of the constraint shadow price and the distribution factor at the pricing node.

The total CLMP at a pricing node is the sum of all constraint contributions to LMP at the node and is equal to the difference between the actual LMP that results from transmission constraints, excluding losses, and the SMP. This total can be either positive or negative.

Where the load weighted CLMP for an area is negative, the area is experiencing negative congestion relative to the system load weighted reference bus and the area's load weighted LMP is less than SMP. Where the load weighted LMP in an area is less than SMP, total congestion in the area will be negative. Where the load weighted CLMP for an area is positive, the area is experiencing positive congestion relative to the system load weighted reference bus and the area's load weighted LMP is less than SMP. Where the load weighted LMP in an area is more than SMP, total congestion in the area will be positive.

Table 1 and Table 2 provide a summary of the total congestion charges in the Virginia area of Dominion.

In order to provide a more detailed explanation of the congestion calculations from which the total congestion charges are derived, each category of congestion is defined and a table of the congestion charges or credits associated with each category is provided.

### ***Net Congestion***

The net congestion bill is calculated by subtracting generating congestion credits from load congestion payments. The logic is that increased congestion payments by load are offset by increased congestion revenues to generation, for the area analyzed. Whether the net congestion bill is an appropriate measure of congestion for load depends on who pays the load congestion payments and who receives the generation congestion credits. The net congestion bill is an appropriate measure of congestion for a utility that charges load congestion payments to load and credits generation congestion credits to load. The net congestion bill is not an appropriate measure of congestion in situations where load pays the load congestion payments but does not receive the generation credits as an offset.

Load congestion payments are netted against generation congestion credits on an hourly basis, by participant, and then summed for the given period. The load congestion payments for a participant may be offset by credits from its owned generation portfolio or by credits from supply purchased from another entity via a bilateral transaction.

Load congestion payments and generation congestion credits are calculated for both the Day-Ahead and Balancing Energy Markets.

- **Day-ahead Load Congestion Payments.** Day-ahead load congestion payments are calculated for all cleared demand, decrement bids, and day-ahead energy sale transactions. (Decrement bids and energy sales can be thought of as scheduled load.) Day-ahead load congestion payments are calculated using load MW and the congestion component of LMP (CLMP) for the load bus, decrement bid location, or the source of the sale transaction, as applicable.
- **Day-ahead Generation Congestion Credits.** Day-ahead generation congestion credits are calculated for all cleared generation and increment offers and day-ahead energy purchase transactions. (Increment offers and energy purchases can be thought of as scheduled generation.) Day-ahead generation congestion credits are calculated using generation MW and the CLMP for the generator bus, increment offer location, or the sink of the purchase transaction, as applicable.
- **Balancing Load Congestion Payments.** Balancing load congestion payments are calculated for all deviations between a PJM Member's real-time load and energy sale transactions and their day-ahead cleared demand, decrement bids, and energy sale transactions. Balancing load congestion payments are calculated using MW deviations and the real-time CLMP for each bus where a deviation from a member's day-ahead scheduled load exists.
- **Balancing Generation Congestion Credits.** Balancing generation congestion credits are calculated for all deviations between a PJM Member's real-time generation and energy purchase transactions and the day-ahead cleared generation, increment offers and energy purchase transactions. Balancing generation congestion credits are calculated using MW deviations and the real-time CLMP for each bus where a deviation from a member's day-ahead scheduled generation exists.

## Explicit Congestion Costs

Explicit congestion costs are the congestion costs associated with moving energy from one specific point to another across the transmission system. Point-to-point transactions may be either internal to PJM or be import or export transactions. Explicit congestion charges equal the difference between source and sink CLMPs for a point-to-point transaction.

- **Internal Purchases.** For internal purchases the explicit congestion costs are calculated based on the difference in CLMPs between the sink bus and source bus of the purchase.
- **Import & Export Transactions.** For point-to-point and network secondary transmission customers, the explicit congestion costs are calculated based on the difference in CLMPs between the sink bus and source bus of the purchase. Interface



pricing points are the source bus for import transactions and the sink bus for export transactions.

The explicit congestion costs calculated for the Virginia portion of Dominion represent the costs associated with point to point transactions that sink in the Virginia portion of Dominion. For example, if a transaction is sourced in Pennsylvania and sinks in Dominion Virginia, the charges would be based on the MW of the transaction multiplied by the difference between the sink CLMP and the source CLMP. The resulting congestion costs are allocated to the zone and state of the sink location, in this case Dominion Virginia.

Table 3 shows the combined day-ahead and balancing load congestion payments, generation congestion credits, and explicit congestion costs for the Dominion Virginia service territory for May 1, 2007 through April 30, 2009. Table 4 shows the congestion cost categories separated by day-ahead and balancing to show the contributions from both the day-ahead and real-time markets.

**Table 3 Total Dominion Virginia congestion costs by category: May 1, 2007 through April 30, 2009**

Congestion Costs (Millions)					
	Load Payments	Generation Credits	Net Congestion Bill	Explicit	Grand Total
2007/2008	\$597.0	\$296.2	\$300.8	(\$0.7)	\$300.1
2008/2009	\$290.1	(\$5.8)	\$295.8	(\$1.6)	\$294.3

**Table 4 Total day-ahead and balancing Dominion Virginia congestion costs by category: May 1, 2007 through April 30, 2009**

Congestion Costs (Millions)									
	Day Ahead				Balancing				Grand Total
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
2007/2008	\$578.0	\$293.9	\$17.7	\$301.7	\$19.1	\$2.3	(\$18.4)	(\$1.6)	\$300.1
2008/2009	\$284.8	\$23.4	\$29.3	\$290.7	\$5.3	(\$29.2)	(\$30.9)	\$3.5	\$294.3

Table 5 lists the top 15 constraints affecting Dominion Virginia congestion costs for the period beginning May 1, 2008 and ending April 30, 2009. Table 5 provides the type of constraint (Line, Transformer, or Interface), the location of the constraint and the congestion event hours for the period analyzed.

**Table 5 Top 15 constraints affecting Dominion Virginia congestion costs: May 1, 2008 through April 30, 2009**

No.	Constraint	Type	Location	Event Hours	
				Day Ahead	Real Time
1	Cloverdale - Lexington	Line	AEP	2,921	1,514
2	AP South	Interface	500	3,931	871
3	Mount Storm - Pruntytown	Line	AP	2,871	753
4	Bedington - Black Oak	Interface	500	873	232
5	Kammer	Transformer	500	3,215	1,633
6	Mount Storm	Transformer	AP	1,015	491
7	Bristers - Ox	Line	Dominion	77	38
8	Aqueduct - Doubs	Line	AP	312	8
9	West	Interface	500	1,953	204
10	Dickerson - Pleasant View	Line	Pepco	446	114
11	Sammis - Wylie Ridge	Line	AP	2,341	1,083
12	East	Interface	500	739	4
13	Brighton	Transformer	Pepco	153	79
14	Pleasantville - Ashburn	Line	Dominion	10	0
15	Wylie Ridge	Transformer	AP	369	428

Table 6 shows the congestion cost details of the top 15 constraints affecting Dominion Virginia for the period beginning May 1, 2008 and ending April 30, 2009. The Cloverdale – Lexington line had the largest impact on congestion costs with a total of \$93.9 million or 32 percent of total congestion costs.

**Table 6 Congestion cost details for the top 15 constraints affecting Dominion Virginia: May 1, 2008 through April 30, 2009**

Constraint	Congestion Costs (Millions)								
	Day Ahead				Balancing				Grand Total
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
Cloverdale - Lexington	\$81.0	(\$1.2)	\$9.2	\$91.4	\$3.5	(\$8.2)	(\$9.1)	\$2.5	\$93.9
AP South	\$75.8	\$14.7	\$5.0	\$66.1	\$4.5	(\$7.3)	(\$4.0)	\$7.8	\$73.9
Mount Storm - Pruntytown	\$48.6	\$16.5	\$6.0	\$38.2	(\$0.7)	(\$6.6)	(\$5.6)	\$0.3	\$38.5
Bedington - Black Oak	\$17.2	\$2.6	\$1.2	\$15.8	\$0.5	(\$0.6)	(\$0.7)	\$0.4	\$16.1
Kammer	\$15.0	\$2.0	\$2.2	\$15.2	\$0.7	(\$1.5)	(\$2.1)	\$0.1	\$15.3
Mount Storm	\$18.4	\$7.1	\$3.4	\$14.7	(\$1.4)	(\$2.7)	(\$4.5)	(\$3.1)	\$11.6
Bristers - Ox	(\$0.4)	(\$11.1)	(\$0.4)	\$10.3	\$0.4	\$0.9	\$0.4	(\$0.1)	\$10.2
Aqueduct - Doubs	\$9.5	(\$0.1)	\$0.2	\$9.8	\$0.0	(\$0.0)	(\$0.0)	\$0.0	\$9.8
West	(\$10.2)	(\$3.8)	\$0.1	(\$6.3)	\$0.2	\$0.5	\$0.1	(\$0.1)	(\$6.4)
Dickerson - Pleasant View	(\$6.2)	(\$0.7)	(\$0.2)	(\$5.7)	(\$0.3)	\$0.2	\$0.2	(\$0.2)	(\$5.9)
Sammis - Wylie Ridge	\$4.9	\$0.4	\$0.8	\$5.3	\$0.1	(\$1.1)	(\$1.5)	(\$0.4)	\$4.9
East	(\$4.0)	(\$0.8)	(\$0.4)	(\$3.6)	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$3.6)
Brighton	\$3.5	\$1.0	\$0.2	\$2.7	\$0.0	(\$0.9)	(\$0.4)	\$0.4	\$3.1
Pleasantville - Ashburn	\$3.2	\$0.2	\$0.0	\$3.0	\$0.0	\$0.0	\$0.0	\$0.0	\$3.0
Wylie Ridge	\$2.3	\$0.4	\$0.3	\$2.1	\$0.2	(\$0.1)	(\$0.3)	(\$0.0)	\$2.1

Table 7 lists the top 15 constraints affecting Dominion Virginia congestion costs for the period beginning May 1, 2007 and ending April 30, 2008. Table 7 provides the type of constraint (Line, Transformer, or Interface), the location of the constraint and the congestion event hours for the period analyzed.

**Table 7 Top 15 constraints affecting Dominion Virginia congestion costs: May 1, 2007 through April 30, 2008**

No.	Constraint	Type	Location	Event Hours	
				Day Ahead	Real Time
1	Cloverdale - Lexington	Line	AEP	3,554	1,666
2	Bedington - Black Oak	Interface	500	3,751	1,335
3	AP South	Interface	500	1,204	461
4	Kammer	Transformer	500	2,329	1,173
5	Dickerson - Pleasant View	Line	Pepco	446	163
6	Central	Interface	500	1,289	43
7	Bedington	Transformer	AP	904	446
8	Meadow Brook	Transformer	AP	1,245	320
9	Branchburg - Readington	Line	PSEG	2,152	546
10	Mount Storm - Pruntytown	Line	AP	226	214
11	Cloverdale	Transformer	AEP	187	148
12	Halifax - Clover	Line	Dominion	130	5
13	Ox	Transformer	Dominion	39	43
14	Aqueduct - Doubs	Line	AP	266	21
15	Wylie Ridge	Transformer	AP	516	344

Table 8 shows the congestion cost details of the top 15 constraints affecting Dominion Virginia for the period beginning May 1, 2007 and ending April 30, 2008. The Cloverdale – Lexington line had the largest impact on congestion costs with a total of \$110.6 million or 37 percent of total congestion costs.

**Table 8 Congestion cost details for the top 15 constraints affecting Dominion Virginia: May 1, 2007 through April 30, 2008**

Constraint	Congestion Costs (Millions)								
	Day Ahead				Balancing				Grand Total
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
Cloverdale - Lexington	\$147.7	\$44.8	\$7.7	\$110.6	\$9.2	\$4.2	(\$5.1)	(\$0.0)	\$110.6
Bedington - Black Oak	\$296.3	\$216.8	\$5.1	\$84.6	\$8.2	(\$8.5)	(\$3.5)	\$13.2	\$97.8
AP South	\$51.0	\$14.9	\$1.0	\$37.0	\$1.9	(\$3.5)	(\$0.7)	\$4.8	\$41.8
Kammer	\$29.4	\$15.8	\$1.4	\$14.9	\$1.1	(\$1.2)	(\$1.0)	\$1.2	\$16.1
Dickerson - Pleasant View	(\$3.8)	\$0.4	(\$0.1)	(\$4.3)	(\$1.2)	\$0.5	\$0.0	(\$1.6)	(\$5.9)
Central	(\$14.3)	(\$8.6)	(\$0.1)	(\$5.8)	(\$0.0)	\$0.0	\$0.0	(\$0.1)	(\$5.9)
Bedington	\$16.6	\$11.8	\$0.2	\$5.1	\$0.0	(\$1.0)	(\$0.3)	\$0.7	\$5.8
Meadow Brook	(\$2.3)	(\$8.0)	(\$0.1)	\$5.6	(\$0.3)	(\$0.2)	\$0.1	\$0.1	\$5.7
Branchburg - Readington	(\$12.4)	(\$8.6)	(\$0.3)	(\$4.1)	(\$0.7)	\$0.7	\$0.3	(\$1.1)	(\$5.2)
Mount Storm - Pruntytown	\$7.5	\$1.4	\$0.3	\$6.4	\$0.7	\$1.1	(\$0.9)	(\$1.3)	\$5.1
Cloverdale	\$7.0	\$3.5	\$0.3	\$3.8	\$0.6	(\$0.1)	(\$0.3)	\$0.4	\$4.1
Halifax - Clover	(\$0.2)	(\$4.2)	(\$0.0)	\$4.0	\$0.0	\$0.0	\$0.0	\$0.0	\$4.0
Ox	\$2.4	(\$1.7)	\$0.0	\$4.1	\$0.5	\$0.7	\$0.0	(\$0.2)	\$3.9
Aqueduct - Doubs	\$4.4	\$1.8	\$0.1	\$2.7	\$0.1	(\$0.1)	(\$0.0)	\$0.1	\$2.8
Wylie Ridge	\$5.6	\$3.2	\$0.2	\$2.6	(\$0.0)	(\$0.0)	(\$0.1)	(\$0.0)	\$2.6

Table 9 shows the largest deltas by constraint for the period ending April 30, 2009 compared to the period ending April 30, 2008. Congestion costs for the Bedington – Black Oak interface decreased from the 2007/2008 period to the 2008/2009 period by \$81.6 million. The decrease in congestion costs and frequency on the Bedington – Black Oak interface is largely due to transmission system upgrades on the Bedington – Black Oak circuit and also the updated definition of the AP South interface. These two upgrades have shifted both congestion costs and frequency from the Bedington – Black Oak interface to the AP South interface. The AP South interface congestion costs increased by \$32.1 million from the 2007/2008 period to the 2008/2009 period. In addition, congestion costs for the Mount Storm – Pruntytown line increased by \$33.4 million from the 2007/2008 period to the 2008/2009 period. The increases on the AP South interface and the Mount Storm – Pruntytown line, coupled with smaller increase from other constraints, offset the large decrease in congestion costs from the Bedington – Black Oak interface.

**Table 9 Top 15 constraint congestion cost deltas from the prior period: May 1, 2008 through April 30, 2009 minus May 1, 2007 through April 30, 2008**

Constraint	Congestion Cost Deltas (Millions)								
	Day Ahead				Balancing				Grand Total
	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	
Bedington - Black Oak	(\$279.1)	(\$214.2)	(\$3.9)	(\$68.8)	(\$7.7)	\$7.9	\$2.8	(\$12.8)	(\$81.6)
Mount Storm - Pruntytown	\$41.1	\$15.0	\$5.7	\$31.8	(\$1.4)	(\$7.7)	(\$4.7)	\$1.7	\$33.4
AP South	\$24.9	(\$0.2)	\$4.0	\$29.1	\$2.5	(\$3.8)	(\$3.3)	\$3.0	\$32.1
Cloverdale - Lexington	(\$66.7)	(\$46.0)	\$1.5	(\$19.2)	(\$5.7)	(\$12.3)	(\$4.1)	\$2.5	(\$16.7)
Mount Storm	\$18.4	\$7.1	\$3.4	\$14.7	(\$1.4)	(\$2.7)	(\$4.5)	(\$3.1)	\$11.6
Bristers - Ox	(\$0.4)	(\$11.0)	(\$0.4)	\$10.2	\$0.7	(\$0.4)	\$0.3	\$1.4	\$11.6
Aqueduct - Doubs	\$5.1	(\$1.9)	\$0.1	\$7.1	(\$0.1)	\$0.0	\$0.0	(\$0.1)	\$7.0
Meadow Brook	\$2.2	\$7.7	\$0.0	(\$5.4)	\$0.2	\$0.3	(\$0.1)	(\$0.1)	(\$5.6)
West	(\$8.0)	(\$2.1)	\$0.1	(\$5.8)	\$0.5	\$0.3	\$0.1	\$0.4	(\$5.4)
Branchburg - Readington	\$12.4	\$8.6	\$0.3	\$4.1	\$0.7	(\$0.7)	(\$0.3)	\$1.1	\$5.2
Central	\$13.0	\$8.4	\$0.0	\$4.7	\$0.0	\$0.0	\$0.0	\$0.0	\$4.7
Bedington	(\$15.9)	(\$12.1)	(\$0.1)	(\$3.9)	(\$0.0)	\$0.8	\$0.1	(\$0.7)	(\$4.6)
Sammis - Wylie Ridge	\$4.3	\$0.3	\$0.7	\$4.7	\$0.0	(\$1.0)	(\$1.3)	(\$0.3)	\$4.4
Halifax - Clover	\$0.2	\$4.2	\$0.0	(\$4.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$4.0)
Ox	(\$2.2)	\$1.6	\$0.0	(\$3.8)	(\$0.5)	(\$0.7)	(\$0.0)	\$0.2	(\$3.7)

## Conclusion

Congestion costs in the Dominion service territory of Virginia decreased from 2007/2008 to 2008/2009 by \$5.8 million or two percent. Load congestion payments decreased by \$306.9 million from 2007/2008 to 2008/2009, while generation congestion credits decreased by \$302 million from 2007/2008 to 2008/2009. The decrease in generation congestion credits and load congestion payments was primarily due to the decrease in congestion event hours on the Bedington – Black Oak interface. The Bedington – Black Oak interface load congestion payments decreased by \$286.8 million or 93.4 percent of

the total decrease in load congestion payments. Similarly, the Bedington – Black Oak interface generation congestion credits decreased by \$206.3 million or 68.3 percent of the total decrease in generation congestion credits. Explicit congestion costs decreased by \$0.9 million from 2007/2008 to 2008/2009.

Although congestion on the Cloverdale – Lexington 500 kV line decreased \$16.7 million from 2007/2008 to 2008/2009, it remained the largest contributor to congestion costs in the Dominion service territory of Virginia during the 2008/2009 period. The transmission upgrades on Bedington – Black Oak circuit and the change to the AP South interface definition resulted in a large decrease in both congestion costs and congestion event hours on the Bedington – Black Oak interface. However, congestion costs and frequency increased on the AP South interface as well as the Mount Storm – Pruntytown line which offset the majority of the decrease in congestion cost from the Bedington – Black Oak interface.

## Congestion Definitions

Table 10 Congestion Definitions

Congestion Category	Calculation
DA Load Congestion Payments	DA Demand MWh * DA CLMP
DA Generation Congestion Credits	DA Supply MWh * DA CLMP
DA Net Congestion Bill	DA Load Congestion Payments - DA Generation Congestion Credits
DA Explicit Congestion Costs	DA Transaction MW * (DA Sink CLMP - DA Source CLMP)
DA Total Congestion Costs	DA Load Congestion Payments - DA Generation Congestion Credits + DA Explicit Congestion Costs
BAL Load Congestion Payments	BAL Demand MWh * RT CLMP
BAL Generation Congestion Credits	BAL Supply MWh * RT CLMP
BAL Net Congestion Bill	BAL Load Congestion Payments - BAL Generation Congestion Credits
BAL Explicit Congestion Costs	BAL Transaction MW * (RT Sink CLMP - RT Source CLMP)
BAL Total Congestion Costs	BAL Load Congestion Payments - BAL Generation Congestion Credits + BAL Explicit Congestion Costs
Total Congestion Costs	DA Total Congestion Costs + BAL Total Congestion Costs

  

MWh Category	Definition
DA Demand MWh	Cleared Demand, Decrement Bids, Energy Sale Transactions
DA Supply MWh	Cleared Generation, Increment Bids, Energy Purchase Transactions
RT Demand MWh	Load and Energy Sale Transactions
RT Supply MWh	Generation and Energy Purchase Transactions
BAL Demand MWh	RT Demand MWh - DA Demand MWh
BAL Supply MWh	RT Supply MWh - DA Supply MWh