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Respondent Virginia's Commitment's Motion To Reopen The Record To Accept The Results Of A Study Conducted By PJM At The Request Of The Maryland Public Service Commission And To Allow For Limited Written Discovery

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June 5, 2008

VIA E-File

Joel H. Peck, Clerk
Virginia State Corporation Commission
Document Control Center, 1st Floor
P.O. Box 1197
Richmond, VA 23218

Re:

Application of Virginia Electric and Power Company &
Trans-Allegheny Interstate Line Company:
Meadow Brook-Loudon 500 kV Transmission Line
PUE-2007-00031 & PUE-2007-00033

Dear Mr. Peck:

Enclosed in the above mentioned case please find the "Respondent Virginia's Commitment's Motion to Reopen The Record To Accept The Results Of A Study Conducted By PJM At The Request Of The Maryland Public Service Commission And To Allow For Limited Written Discovery."

Please contact me should you have any questions or concerns regarding this information filed under seal.

Sincerely,

Jeannie A. Adams

Enclosures
cc: Service List

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

JOINT APPLICATION OF)
VIRGINIA ELECTRIC AND POWER)
COMPANY D/B/A)
DOMINION VIRGINIA POWER,)
and)
TRANS-ALLEGHENY)
INTERSTATE LINE COMPANY)

For certificates of public convenience)
and necessity to construct facilities:)
500 kV Transmission Line from)
Transmission Line # 580)
to Loudoun Substation)

CASE NO. PUE-2007-00031

AND)

APPLICATION OF)
TRANS-ALLEGHENY)
INTERSTATE LINE COMPANY)

For certificates of public convenience)
and necessity to construct facilities:)
500 kV Transmission Line from)
Virginia-West Virginia Boundary)
to Virginia Electric and Power)
Company Transmission Line # 580)

CASE NO. PUE-2007-00033

**RESPONDENT VIRGINIA'S COMMITMENT'S, MOTION TO REOPEN THE RECORD TO
ACCEPT THE RESULTS OF A STUDY CONDUCTED BY
PJM AT THE REQUEST OF THE MARYLAND PUBLIC SERVICE COMMISSION AND TO
ALLOW FOR LIMITED WRITTEN DISCOVERY**

Pursuant to Rule 5 VAC 5-20-110 of the Rules of Practice and Procedure of the Virginia State Corporation Commission ("the Commission"), Virginia's Commitment hereby moves to reopen the record in the above-captioned proceeding for the limited purpose of submitting the attached presentation ("PJM Presentation") developed by PJM at the request of the Maryland Public Service Commission ("Maryland PSC") and to allow for limited written discovery to provide a foundation and brief interpretation of the PJM Presentation.

In the above referenced proceedings Applicants, Virginia Electric and Power Company d/b/a Dominion Virginia Power and Allegheny Energy (collectively referred to as "Applicants"),

request Certificates of Public Convenience and Necessity, pursuant to sections 56-265.2 and 56-46.1 of the Code of Virginia, to build the Virginia segments of a new 500kV transmission line that will traverse Pennsylvania, West Virginia and Virginia (the "Loudoun Line"). As more fully described in Virginia's Commitment's post-hearing brief submitted on May 19, 2008, the Applicants, with PJM's support, attempt to justify the construction of the Loudoun Line as necessary to relieve the projected overload on the existing Mt. Storm – Doubs line so as to maintain electric service reliability along the transmission lines east of the Doubs Substation, including portions of Maryland.

During the evidentiary hearing on these proceedings held before Hearing Examiner Alexander Skirpan from February 25 to March 18, 2008, testimony revealed that the results of PJM's 2008 Reliability Pricing Model (RPM) Base Residual Auction (BRA) for the 2011/2012 delivery year ("2011/2012 RPM/BRA") would be available soon after the record closed, and that the results of the auction would bear directly on the ultimate issues of need and public convenience and necessity of the Virginia portion of the proposed Loudoun Line.¹ The auction results were issued on May 15, 2008. Thus, on May 16, 2008, prior to the submission of post-hearing briefs, Respondents jointly filed a Motion to Lodge Results of Recent Reliability Pricing Model Auction or in the Alternative to Reopen the Record to Accept Those RPM Auction Results into Evidence. No opposition was filed in response to the May 16th Motion and the Hearing Examiner has not yet issued a ruling. Virginia's Commitment's current request relates directly to Respondents' jointly filed Motion. Thus, Virginia's Commitment requests that the Hearing Examiner consider both motions collectively.

Virginia's Commitment's Motion warrants approval for the following reasons:

1. On May 13, 2008, in the wake of the 2011/2012 RPM/BRA, the Maryland PSC asked PJM to provide it with an updated assessment of the ability of PJM and the Maryland transmission operators to provide reliable electric service to Maryland customers in the event that the Loudoun Line was not in-service during the summer of 2011. See Attachment A. In response, PJM developed the attached presentation, stating that it interprets "MD-PSC's request as comprising a set of sensitivity studies to estimate the worse case scenarios for gap in light of the ... May 2008 PJM RPM Base Residual Auction results."² See Attachment B. The "gap" PJM refers to is the difference between

¹ See Tr. at 3122 – 3127 (Herling), 3185 (Orans)

² PJM Presentation at 7. The PJM Presentation appears on the PJM web site at <http://www.pjm.com/documents/downloads/presentations/md-psc-kormos-presentation-05-21-08.pdf>.

the import capability into Maryland and the demand for imports, or equivalently, the load within Maryland that would have to be dropped to maintain reliable service.

2. The results of the analyses outlined in the PJM Presentation indicate that the resources that cleared in the 2011/2012 RPM/BRA are expected to reduce the severity of the overloads on the Mt. Storm – Doubs line in 2011 under the Load Deliverability test,³ possibly eliminating them altogether. Three of the five studies⁴ described in the PJM Presentation are relevant for the Commission's review of the Loudoun Line. First, *Scenario 4* presents a load flow simulation that included "all that generation (new AND existing) expected to bid, and that DR forecasted to bid into the 2011/2012 RPM/BRA."⁵ This indicates that the analysis of the need for the line in 2011 can be updated, and that the resources that will bid into a future Base Residual Auction can be estimated. This load flow simulation resulted in no overloaded lines, with the most limiting element being the Mt. Storm – Doubs line loaded at 99% of capacity.⁶ *Scenario 3* presents the results of a load flow simulation that incorporated all of the resources that cleared in the 2011/2012 RPM/BRA, which shows a potential gap of 3,000 MW in the Mid-Atlantic, a significant improvement over the 6,500 MW gap in 2012 projected by Scenario 1 in October. Finally, *Scenario 5* shows that using only the resources that cleared in the 2011/2012 RPM/BRA and existing generators that did not clear, all lines had loading below their emergency rating, with the Mt. Storm – Doubs line as the most limiting element. These results appear to indicate what the Respondents have been advocating all along: giving the RPM a chance to work could provide an alternative to the Loudoun Line.
3. The PJM Presentation also includes a discussion of options for maintaining reliability during the summer of 2011 if the Loudoun Line is not approved. These options constitute a "plan B" of the sort that the Applicants stated did not exist and would not be developed until the lines were rejected.⁷ This highlights the contrast in PJM's positions before the two Commissions: in Maryland, where the Maryland PSC has no jurisdiction

³ PJM Presentation at 8 discusses the Mid-Atlantic Load Deliverability Study under the heading "Quantifying the Gap," but the presentation never explicitly states that the Load Deliverability Study produced the results shown, nor if the Mid-Atlantic was necessarily the focus area for the Load Deliverability Study.

⁴ PJM Presentation at 9.

⁵ PJM Presentation at 9.

⁶ PJM Presentation at 13.

⁷ See Tr. at 1825-1826 (Smatlak), Tr. at 1897 (Herling).

over the Loudoun Line, PJM attempts to allay fears that the lights will go out with a range of load flow simulations and backup plans; in Virginia, PJM attempts to induce the fear of rolling blackouts by relying on outdated analyses and claims that there are no backup plans.

4. The 2011 load flow simulations performed for the PJM Presentation are the exact sensitivity analyses Virginia's Commitment, other Respondents and the Hearing Examiner requested Applicants to produce at the hearing, and that Applicants refused to provide, arguing that such analyses were too time consuming and not practical.⁸ See Attachment C. These results were produced to the Maryland PSC on May 21, 2008, within eight days of the Maryland PSC's request (May 13, 2008), and within 12 days of the close of the 2011/2012 RPM/BRA (May 9, 2008).
5. The Commission's procedural rules provide that "evidentiary rules shall not be unreasonably used to prevent the receipt of evidence having substantial probative effect."⁹ Given that i) this PJM Presentation represents the sensitivity analyses the Hearing Examiner, Virginia's Commitment and other Respondents requested Applicants provide the Commission, ii) the results of the PJM Presentation bear directly on the primary issues of need in these cases, and iii) the results of the PJM Presentation were not available to Respondents prior to the close of the record, the substantial probative effect of this evidence is crucial and good cause exists to reopen the record in this proceeding for the limited purpose of submitting the attached PJM Presentation for inclusion in the record.
6. To prevent unnecessary delay, Virginia's Commitment requests that the Hearing Examiner allow for limited written discovery so that the parties may provide a foundation and brief interpretation of the PJM Presentation.
7. For the foregoing reasons, Virginia's Commitment asks that the Hearing Examiner grant this Motion to Reopen the Record to accept the PJM Presentation into evidence and to allow for limited written discovery on the same.

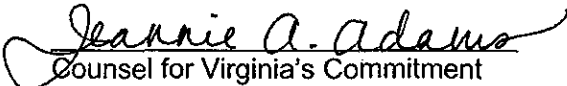
Respectfully submitted,

⁸ See Tr. at 4839, 4844 – 4846 (Herling); see also Tr. at 3033-3035 (Watts), 3094-3097 (Herling), 4800-4801 (Herling).

⁹ 5 VAC 5-20-190.

VIRGINIA'S COMMITMENT

By Counsel


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CERTIFICATE OF SERVICE

I hereby certify that a copy of the attached document was sent by U.S. Mail or e-mailed to the following on the 5th of June, 2008:

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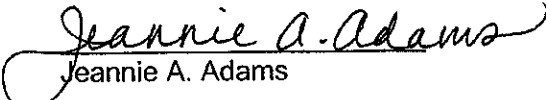
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STATE OF MARYLAND

MARTIN O'MALLEY
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PUBLIC SERVICE COMMISSION

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May 13, 2008

BY FACSIMILE AND FIRST-CLASS MAIL

Mr. W. Terry Boston
President and Chief Executive Officer
PJM Interconnection
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497

Dear Mr. Boston:

The Public Service Commission ("Commission") again wants to extend its appreciation to you and your staff in meeting with us in early April. We thought the discussions were productive.

At the April meeting, you offered PJM's continued assistance to the Commission in assessing aspects of reliability of the electricity supply in the State of Maryland. As you may know, Michael J. Kormos, Senior Vice President of Reliability Services, filed testimony with the Commission last October addressing future reliability of electric service to Maryland and PJM as a whole, and he appeared as a witness at various Commission proceedings. His testimony then indicated that both the 502 Junction to Loudon 500 KV line and the Amos to Kempton line are critical to preserving reliability in the State of Maryland, particularly in the 2011 to 2012 timeframe. The PJM testimony also indicated that if neither line is in service by its projected in-service date, the load net of generation in the Mid-Atlantic region could exceed the transfer capability of the transmission system by about 6,500 MW. The Commission has advised the Governor and the Maryland General Assembly of this potential shortfall, and its consequences for ratepayers in the State.


Since PJM's analysis was presented to the Commission last fall, however, PJM has held two Base Residual Auctions (BRA): one in January 2008, for capacity in 2010-11, and another on May 5, 2008 for capacity in 2011-12. Mr. Kormos noted in his testimony last fall that new generation and demand response resources could mitigate the expected reliability problems that will occur as early as 2011 in the event there is a delay in completing the subject transmission lines.

Mr. W. Terry Boston
May 13, 2008
Page 2

The Commission, to meet its obligations to ratepayers in Maryland, must evaluate the impact of an in-service delay of these transmission projects and the impact of Maryland electric utilities' demand response programs recently approved by the Commission in order to assess reliability within the State of Maryland. Accordingly, the Commission has asked PJM to update its reliability analysis from October 2007 to incorporate: (a) the cleared capacity commitments through the May 5, 2008 RPM auction; and (2) the impact on the reliability of Maryland's electric system if the subject transmission lines do not come on line as planned. It is my understanding that PJM will come before the Commission next Wednesday, May 21, to address these issues in light of the new auction results. In connection with that presentation, the Commission would appreciate a regional delineation of any identified shortfall as well as PJM's estimate of "Maryland's share" of the regional total.

The Commission has appreciated the cooperation and input of PJM in our prior proceedings, and looks forward to a continuing cooperative relationship in the future. Should you have any questions as to any specifics on the information that the Commission is requested, please contact Greg Carmean, the Commission's Executive Director, at (410) 767-8010, or me personally at (410) 767- 8073.

Sincerely,


Steven B. Larsen
Chairman

cc: Malcom D. Woolf, Director, Maryland Energy Administration



Public Service Commission of Maryland

PJM Status Reports

- (1) 2011/2012 Base Residual Auction Results Summary
- (2) “Gap” Generation Analysis Estimates
w/o 502 Junction – Loudoun 500 kV Line in 2011
- (3) 2010 Update / Expectations

Michael J. Kormos
Senior Vice President
Reliability Services
May 21, 2008



May 2008 PJM RPM Base Residual Auction: Results and Comparison

Auction Results	RIO			EMAAC			SWMAC		
	2009/2010	2010/2011	2011/2012	2009/2010	2010/2011	2011/2012	2009/2010	2010/2011	2011/2012
Resource Clearing Price [\$/MW-Day]	102.04	174.29	110.00	191.32	174.29	110.00	237.33	174.29	110.00
NEW Generation Offered [MW]	439.2	403.6	2,203.7	92.9	124.5	693.2	0.0	0.0	220.8
NEW Generation Cleared [MW]	300.3	285.1	1,916.1	92.9	6.0	535.2	0.0	0.0	0.0
DIFFERENCE - NEW Generation that did not clear [MW]	138.9	118.5	287.6	0.0	118.5	158.0	0.0	0.0	220.8
UPDATES & REACTIVATED Generation Offered [MW]	590.1	727.3	1,243.8	128.6	178.0	205.1	32.0	0.8	186.9
UPDATES & REACTIVATED Generation Cleared [MW]	590.1	727.3	1,002.3	128.6	178.0	198.5	32.0	0.8	106.5
DIFFERENCE - Updates & Reactivated Generation that did not clear [MW]	0.0	0.0	241.5	0.0	0.0	6.6	0.0	0.0	80.4
ALL Generation Offered [MW]	132,614.2	132,124.8	136,067.9	31,307.6	30,926.9	31,740.2	9,955.4	10,409.2	10,871.9
ALL Generation Cleared [MW]	131,338.9	131,251.4	130,856.6	31,278.2	30,508.6	29,146.4	9,558.3	10,354.4	10,039.3
DIFFERENCE - All Generation that did not clear [MW]	1,275.3	873.4	5,211.3	29.4	418.3	2,953.8	397.1	54.8	832.6



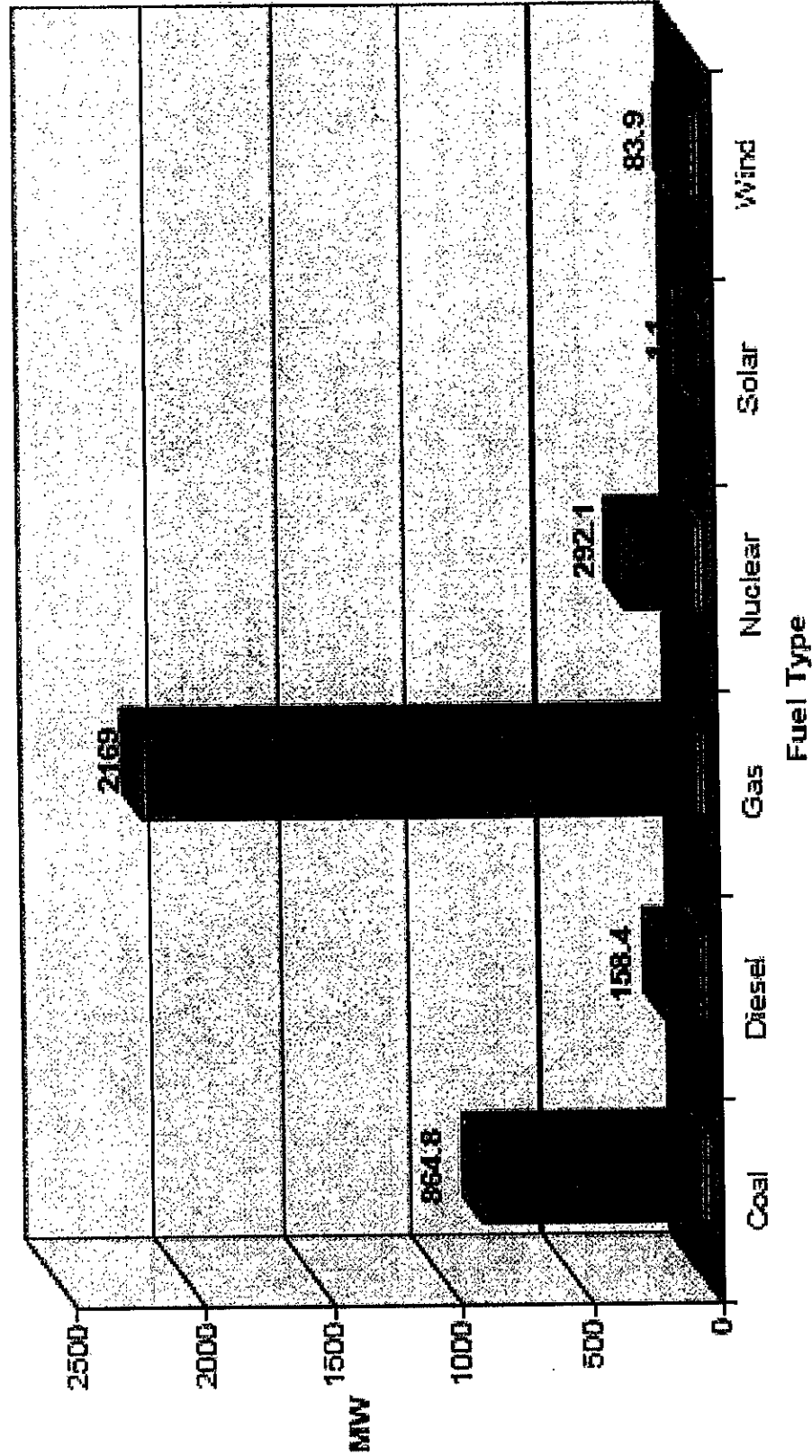
May 2008 PJM RPM Base Residual Auction: Incremental Capacity Resource Additions Comparison by Fuel Type

Generation	Delivery Year	CT/GT	Combined Cycle	Diesel	Hydro	Steam	Nuclear	Solar	Wind	TOTAL
New Capacity Units (ICAP MW)	2009/2010	399.5		23.8		53.0				476.3
	2010/2011	283.3		23.0					141.4	447.7
	2011/2012	416.4	1,135.0			704.8		1.1	75.2	2,332.5
Upgrades to Existing Capacity Resources (ICAP MW)	2009/2010	152.2	209.0		162.5	61.4	194.4		16.5	796.0
	2010/2011	117.3	743.0		48.0	89.2	160.3			1,157.8
	2011/2012	369.2	148.6	57.4		186.8	292.1		8.7	1,062.8
TOTAL		1977.9	2235.6	114.9	210.5	1196.2	646.8	1.1	241.8	6624.8



May 2008 PJM RPM Base Residual Auction: 2011 / 2012 Comparison by Fuel Type

2011/2012 Installed Capacity Increase By Fuel Type

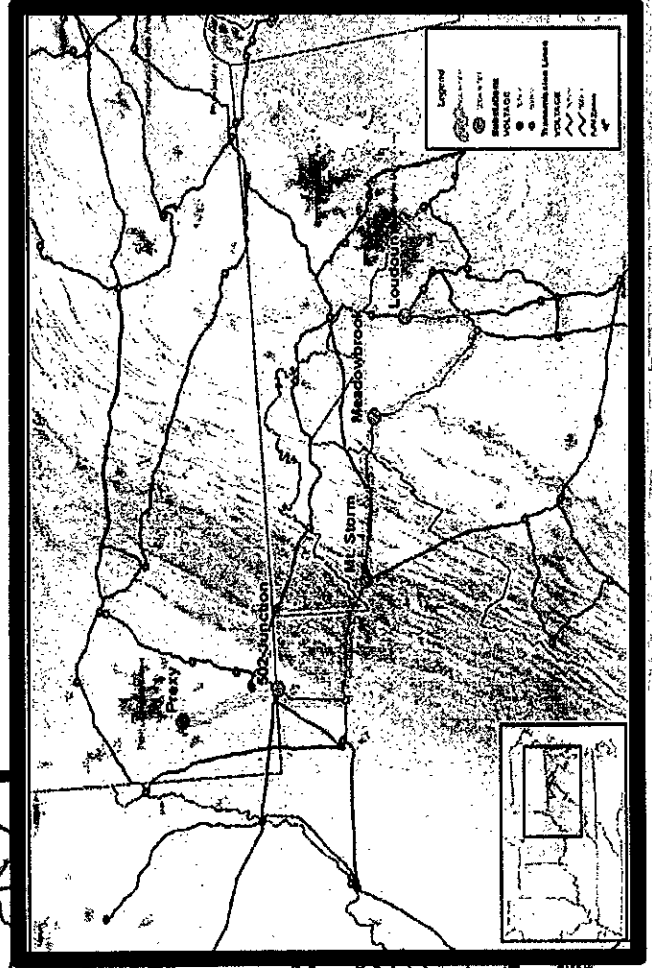
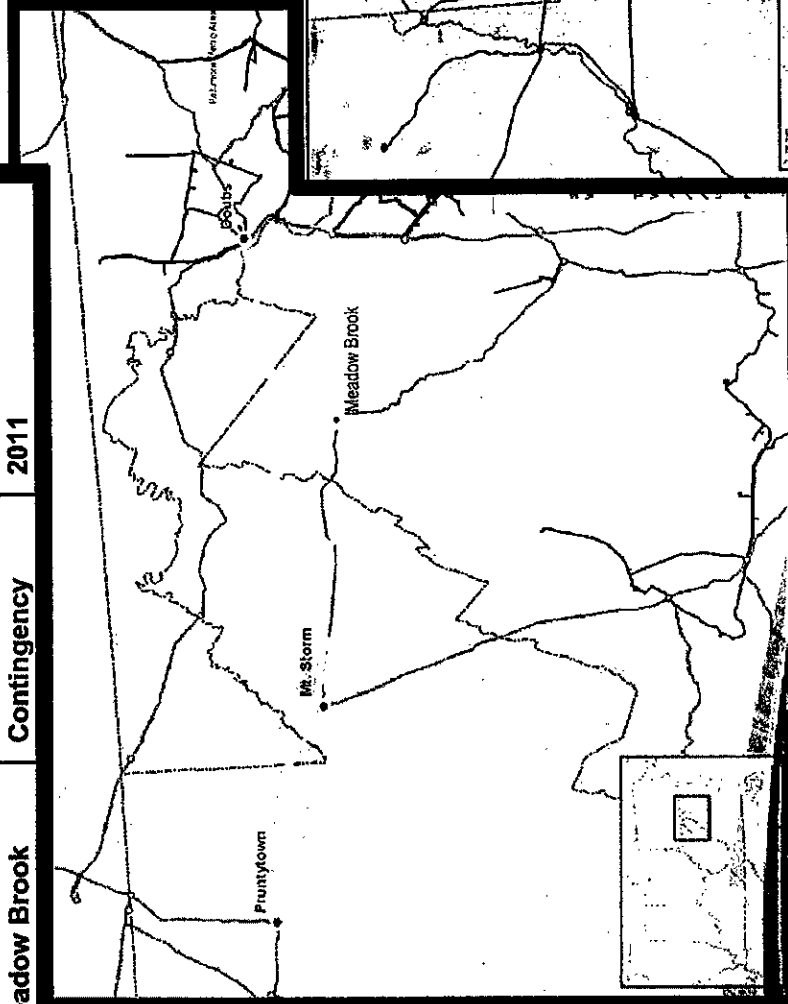




PJM 2006 RTEP

- PJM identifies reliability criteria violations, need for additional transmission capability
- PJM Board approves new Loudoun Line

Overloaded Facility	Test Resulting in Highest Overload	Year that Facility Loading Exceeds Conductor Rating
Mt. Storm - Doubts 500 kV Line	Load Deliverability	2011
Pruntytown - Mt. Storm 500 kV Line	Generator Deliverability	2014
Meadow Brook	'N - 2' Contingency	2011





PJM Approach to MD-PSC Gap Analysis Request

- With Loudoun line in service, PJM system reliability criteria are within limits.
- Presently, PJM has no indication that the Loudoun cannot be completed by 2011 when reliability criteria violations driving the need for the line are first observed.
- PJM's October 2007 initial gap estimate for Mid-Atlantic PJM of 6,500 MW included approximately 1,500 MW for Maryland. PJM's gap estimate represents that amount of area load in excess of area generation that exceeds the transmission capability needed to transfer power into an area to serve that load at risk.
- PJM interprets MD-PSC's request as comprising a set of sensitivity studies to estimate worse case scenarios for gap in light of the October 2007 initial estimate, updated case numbers, and May 2008 PJM RPM Base Residual Auction (BRA) results.



Quantifying Resource "Gap"

- Mid-Atlantic Load Deliverability...ability of transmission to import power into a specific area when sufficient generation is NOT available in that area to supply load.
- Resource "Gap" ...two ways of understanding the concept:
 - Generation Resource Perspective... PJM's estimate of that generation necessary in 2011 - if the Loudoun and Kemptown lines are not in-service - to reduce loading on the most limiting transmission facility down to 100 %, based on reliability criteria violations identified during RTEP analysis.
 - Load-Serving Perspective... PJM's estimate of area load at risk; i.e., area load - in excess of area generation - that exceeds an area's transmission capability to transfer needed power into an area.
- Key Factors impacting Gap:
 - Generation availability
 - Load growth
 - Demand side response



Summary of Gap Analysis Scenarios Studied

Scenario	Short Description	Gap Approximations	PJM Assessment
1	October 2007 PJM analysis on 2012 case results without Loudoun (2011) or Kempton (2012) lines	Mid-Atlantic = 6,500 MW Maryland = 1,500 MW	Would require remedial action by PJM.
2	March 2008 VA results...Gap analysis on updated 2012 PJM RTEP case	Mid-Atlantic = 2,000 - 5,000 MW Maryland = 460 - 1,200 MW	Would require remedial action by PJM.
3	PJM 2011 case with <u>ONLY</u> that generation and DR that cleared in the 2011/2012 RPM BRA.	Mid-Atlantic = 2,600 – 3,000 MW Maryland = 600 – 690 MW	Would require remedial action by PJM.
4	PJM 2011 case with <u>all that generation (new AND existing) expected to bid, and that DR forecasted to bid</u> into the 2011/2012 RPM BRA.	Approximately, line loading under limiting reliability criteria test at 99% of facility rating.	Virtually no remaining line loading capability; virtually no reliability margin.
5	PJM 2011 case with 2011/2012 RPM BRA Gens/DR that <u>cleared + any existing gen that did not clear</u> . (i.e., does not include new generation that did not clear)	Approximately, line loading under limiting reliability criteria test at 100% of facility rating.	No remaining line loading capability; no reliability margin.



Scenario 1

Scenario	Short Description	Gap Approximations	PJM Assessment
1	October 2007 PJM analysis on 2012 case results without Loudoun (2011) or Kempton (2012) lines	Mid-Atlantic = 6,500 MW Maryland = 1,500 MW	Would require remedial action by PJM.

Load Growth... January 2007 Forecast for 2007 – 2017
(10-year load growth rates)

- BGE... 1.2%, 7,745 MW in 2011
- PEPCo... 1.4%, 7,439 MW in 2011
- Mid-Atlantic PJM... 1.5%, 63,887 MW in 2011
- Dominion... 1.9%, 20,746 MW in 2011
- PJM RTO... 1.6%, 146,404 MW in 2011

Demand Response... January 2007 Load Forecast

- BGE... 227 MW modeled
- PEPCo... 0 MW modeled
- Mid-Atlantic... 794 MW modeled

Most Limiting Reliability Criteria Violation

- Mt. Storm-Doubs 500 kV line

Generation Highlights

- RTEP07 model.
- Existing generation + that with signed ISAs through January 2007.

Status of Key Generators

- Catoctin - not modeled.
- Benning 15, 16 – not modeled.
- Buzzard (all units) – not modeled.



Scenario 2

Scenario	Short Description	Gap Approximations	PJM Assessment
2	March 2008 VA results...Gap analysis on updated 2012 PJM RTEP case	Mid-Atlantic = 2,000 - 5,000 MW Maryland = 460 - 1,200 MW	Would require remedial action by PJM.

Load Growth...January 2008 Forecast for 2008 – 2018:

- (10-year load growth rates...January 2008 vs January 2007)
- BGE... down 0.2% to 1.0%...-119 MW in 2011
 - PEPCo... down 0.1% to 1.3%...-104 MW in 2011
 - Mid-Atlantic PJM... no change; ...1.5%...+33 MW in 2011
 - Dominion... down 0.1% to 1.8%... -208 MW in 2011
 - PJM RTO... down 0.1 % to 1.5%... -1,343 MW in 2011

Demand Response... January 2008 Load Forecast

- BGE... 260 MW modeled
- PEPCo... 28 MW modeled
- Mid-Atlantic... 1,018 MW modeled

Most Limiting Reliability Criteria Violation

- Mt Storm-Doubs

Generation Highlights

- RTEP07 2012 model.
- Existing generation + that with signed ISAs as of February 29, 2008

Status of Key Generators

- Catoctin – in model.
- Benning 15, 16 – not modeled.
- Buzzard (all units) – not modeled.
- Indian River 1,2 – not modeled.
- Bergen 2 – not modeled.
- Parlin – in model.
- B. L. England 1, 2, 3 – in model.
- Sewaren 1-4 – in model.



Scenario 3

Scenario	Short Description	Gap Approximations	PJM Assessment
3	PJM 2011 case with <u>ONLY</u> that generation and DR that cleared in the 2011/2012 RPM BRA.	Mid-Atlantic = 2,600 – 3,000 MW Maryland = 600 – 690 MW	Would require remedial action by PJM.

Load Growth... January 2008 Forecast for 2008 – 2018:
 (10-year load growth rates... January 2008 vs January 2007)

- BGE... down 0.2% to 1.0%... -119 MW in 2011
- PEPco... down 0.1% to 1.3%... -104 MW in 2011
- Mid-Atlantic PJM... no change; ... 1.5%... +33 MW in 2011
- Dominion... down 0.1% to 1.8%... -208 MW in 2011
- PJM RTO... down 0.1 % to 1.5%... -1,343 MW in 2011

Demand Response

- BGE... 655 MW modeled
- PEPco... 154 MW modeled
- Mid-Atlantic... 1,635 MW modeled

Most Limiting Reliability Criteria Violation

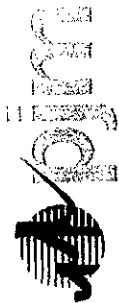
- Mt. Storm – Doubts 500 kV line

Generation Highlights

- 2011 model.
- All generation (both existing and new) that CLEARED in the 2011/2012 BRA

Status of Key Generators

- Catoctin – not modeled
- Benning (all units) – in model
- Buzzard 15, 16 – in model
- Indian River 1, 2 – not modeled
- Bergen 2 – in model
- B. L. England 1, 2, 3 – in model
- Sewaren 1-4 – in model
- Parlin – in model



Scenario 4

Scenario	Short Description	Gap Approximations	PJM Assessment
4	PJM 2011 case with all that generation (new AND existing) expected to bid, and that DR forecasted to bid into the 2011/2012 RPM BRA.	Approximately, line loading under limiting reliability criteria test at 99% of facility rating.	Virtually no remaining line loading capability; virtually no reliability margin.

Load Growth... January 2008 Forecast for 2008 – 2018:

- (10-year load growth rates... January 2008 vs January 2007)
- BGE... down 0.2% to 1.0%... -119 MW in 2011
 - PEPCo... down 0.1% to 1.3%... -104 MW in 2011
 - Mid-Atlantic PJM... no change; ...1.5%... +33 MW in 2011
 - Dominion... down 0.1% to 1.8%... -208 MW in 2011
 - PJM RTO... down 0.1 % to 1.5%... -1,343 MW in 2011

Demand Response... January 2008 Load Forecast

- BGE... 260 MW modeled
- PEPCo... 28 MW modeled
- Mid-Atlantic... 1,018 MW modeled

Most Limiting Reliability Criteria Violation

- Mt Storm – Doubts 500 kV Line (line loading at 99% of rating)

Generation Highlights

- 2011 model.
- All generation – new AND existing – expected to bid into the 2011/2012 RPM BRA.

Status of Key Generators

- Catoctin – not modeled
- Benning (all units) – in model
- Buzzard 15, 16 – in model
- Indian River 1, 2 – not modeled
- Bergen 2 – in model
- B. L. England 1, 2, 3 – in model
- Sewaren 1-4 – in model
- Parlin – in model



Scenario 5

Scenario	Short Description	Gap Approximations	PJM Assessment
5	PJM 2011 case with 2011/2012 RPM BRA Gens/DR that <u>cleared + any existing gen that did not clear</u> ; (i.e., does not include new generation that did not clear)	Approximately, line loading under limiting reliability criteria test at 100% of facility rating.	No remaining line loading capability; no reliability margin.

Load Growth... January 2008 Forecast for 2008 – 2018:

- (10-year load growth rates... January 2008 vs January 2007)
- BGE... down 0.2% to 1.0%... -119 MW in 2011
 - PEPCo... down 0.1% to 1.3%... -104 MW in 2011
 - Mid-Atlantic PJM... no change; ... 1.5%... +33 MW in 2011
 - Dominion... down 0.1% to 1.8%... -208 MW in 2011
 - PJM RTO... down 0.1 % to 1.5%... -1,343 MW in 2011

Demand Response

- BGE... 655 MW modeled
- PEPCo... 154 MW modeled
- Mid-Atlantic... 1,635 MW modeled

Most Limiting Reliability Criteria Violation

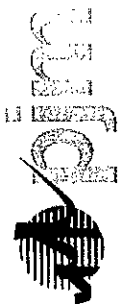
- Mt Storm – Doubts 500 kV Line (line loading at 100% of rating)

Generation Highlights

- 2011 model.
- Generation (both existing and new) that CLEARED in the 2011/2012 BRA + that existing gen that did not clear

Status of Key Generators

- Catoctin – not modeled
- Benning (all units) – in model
- Buzzard 15, 16 – in model
- Indian River 1, 2 – not modeled
- Bergen 2 – in model
- B. L. England 1, 2, 3 – in model
- Sewaren 1-4 – in model
- Parlin – in model



Addressing Reliability in Maryland if Lines are Delayed

- Absent lines, options include:
 - Incremental enhancements with 1 to 3 years needed
 - Upgrades to lower voltage facilities
 - Flexible AC flow shifting control devices & other new technologies
 - Incremental RPM auction concept under consideration for planning parameter changes (i.e., proposed lines delayed)
 - Reliability Must Run contracts on requested deactivations
 - Operating procedures / system reconfigurations to minimize risk

- Options depend on several factors:
 - Length of line delay
 - Available time to implement incremental transmission enhancements
 - Expected generation availability
 - Expected demand response over delay period
 - Expected load over delay period; impacts of slowing US/regional economy and how it rebounds



Status of Major Upgrades in BGE and PEPCo

Location	Project Description	Equipment	Completion Date	Status
Palmers Corner - Blue Plains	Two new 230kV circuits	Circuits		In-service
Waugh Chapel	Install Waugh Chapel 230kV 360MVAR capacitor bank	Capacitor Bank		In-service
Various Substations, 138 kV and below	Add 275+ MVAR of capacitors on underlying system, 138 kV and below.	Capacitor Banks		In-service
Doubs - Dickerson and Doubs - Aqueduct - Dickerson	Upgrade 230kV lines to 1200MVA	Lines	5/2009	
Waugh Chapel	Add 4th 500/230kV transformer in a new 500kV transformer bay. Operate the existing in-service spare transformer on standby and other associated configuration changes.	Transformer	6/2009	
Brighton Substation	Add 2nd 1000 MVA 500/230kV transformer; 2, 500kV circuit breakers and miscellaneous bus work	Transformer	6/2009	
Conastone	Upgrade both 500/230kV transformer banks with larger transformers, replace breakers #4 & #7 and other configuration changes	Transformer	5/2009	
Burches Hill	Burches Hill Substation - Add 2nd 1000 MVA 500/230kV Transformer	Transformer	6/2011	
Bells Mill	Add 100 MVAR of reactive capability.	Capacitor	6/2010	
Bells Mill	Add 100 MVAR of reactive capability.	Capacitor	6/2010	
Mt. Storm - 502 Junction	Build new 500 kV line.	Circuit	6/2011	
Doubs	Replace Transformer #2.	Transformer	5/2011	
Doubs	Replace Transformer #3.	Transformer	12/2010	
Doubs	Replace Transformer #4.	Transformer	6/2010	



Status of Major Upgrades in BGE and PEP Co, continued...

Dickerson - Pleasant View	Circuit	Reconductor 230kV line.	6/2011
Dickerson - Pleasant View	Circuit	Reconductor 230kV line.	6/2011
Brighton	Transformer	Replace existing 500/230 kV transformer at Brighton	6/2012
Conastone and Graceton	Second Circuit and Circuit Breaker	Install a second Conastone - Graceton 230 kV circuit and replace Conastone 230 kV breaker 2323/2302	6/2012
Burches Hill	Transformer	Install third Burches Hill 500/230 kV transformer	6/2012
Ritchie & Benning Sta. "A"	Circuits	Two new 230 kV circuits between Ritchie - Benning Sta. "A"	6/2012
Bedington - Kempton	Circuit	Bedington to Kempton 500 kV lines (twin circuit) and associated 765/500 kV terminal upgrades at Bedington and 500 kV station establishment at Kempton - (APS portion)	6/2012
Possom Point - Calvert Cliffs	New transmission line and associated equipment	MAPP Project Phase 1: install new Possum Point to Calvert Cliffs 500 kV	6/2013
Possom Point - Calvert Cliffs	New transmission line and associated equipment	MAPP Project Phase 1: install new Possum Point to Calvert Cliffs 500 kV	6/2013
Calvert Cliffs - Salem	New transmission line and associated equipment	MAPP Project Phase 2: install new Calvert Cliffs - Salem 500 kV	6/2013
Calvert Cliffs - Salem	New transmission line and associated equipment	MAPP Project Phase 2: install new Calvert Cliffs - Salem 500 kV	6/2013

Herly

4839

1 A. Well, it is related to the prior
2 analysis. And the analysis that we did here for 2012,
3 which is significantly worse than the 2006 analysis,
4 although, somewhat better than the 2007 analysis, that
5 is the basis for our conclusion. Because these
6 results are so much worse than what we saw earlier,
7 that we expect that there will still be significant
8 violations in 2011.

9 Q. Am I right that in the model run that you
10 presented last Thursday, you didn't run the 2011 case
11 and, therefore, you can't quantify the amount of the
12 violations that would occur in 2011?

13 A. That is correct. We had discussed that
14 there would be a significant number of transmission
15 upgrades that would have to be extracted from the case
16 and that would take a lot of time. So we only studied
17 2012.

18 Q. Okay. In the model that you presented
19 last week, you included the 2008 load forecast for
20 2012; is that right?

21 A. Yes.

22 Q. And that included the updated forecasts
23 for all areas in PJM including BG&E, Pepco and VEPCo
24 service territories, among others?

25 A. Yes.

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2 analysis. And the analysis that we did here for 2012,
3 which is significantly worse than the 2006 analysis,
4 although, somewhat better than the 2007 analysis, that
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19 last week, you included the 2008 load forecast for
20 2012; is that right?

21 A. Yes.

22 Q. And that included the updated forecasts
23 for all areas in PJM including BG&E, Pepco and VEPCo
24 service territories, among others?

25 A. Yes.

1 that will have been shut down prior to 2011. The bulk
2 of them will be retired on June 1, 2012.

3 Q. Okay. Such as the --

4 A. The Benning.

5 Q. -- the Benning and Buzzard units; right?

6 A. Some of the Buzzard units are already
7 retired. Some of them will be retired prior to the
8 remainder of the units, which will be shut down on
9 June 1, 2012.

10 Q. And just like in your 2012 case, any
11 resources resulting from the RPM auctions that have
12 occurred by then would be included in a 2011 case
13 provided they are not scheduled to be taken out of
14 service before that time; is that right?

15 A. Well, to be clear, at this point, the
16 only auction that we have is the 2010 auction, and you
17 are correct. Other than units that are expected to be
18 retired, anything that cleared in the 2010 auction, we
19 would assume would be in service in 2011 and 2012, as
20 well.

21 Q. Okay. So still focussing on this
22 bulleted item that you gave us last week, we have a
23 combination of the most-recent 2011 generation data
24 and the lower load forecasts for 2011 and the presence
25 of both the Buzzard and the Benning plants that

1 wouldn't be deactivated by the summer of 2011. You
2 have not quantified the effect all of those would have
3 on 2011 violations; is that right?

4 A. No. We are basing our conclusion on the
5 comparison of the original results in the 2006 RTEP to
6 2007 RTEP and then this analysis. The severity of
7 those results, it is our judgment, our engineering
8 judgment, that we will still have those violations in
9 2011.

10 Q. If you wanted to reach greater certainty
11 about that, could you take the 2012 case that you just
12 presented to us and back down the loads to 2011 levels
13 and assess which generators to put in and which
14 generators to take out? Could that be done?

15 A. No. That could not be done. The more
16 critical factor would be having to remove the
17 transmission upgrades that will be put in place
18 between 2011 and 2012, and there are a significant
19 number of those. It is not immediately clear as to
20 whether any of those upgrades could be accelerated to
21 be in service prior to 2011. So what we would have to
22 do is strip that out, adjust the load, adjust the
23 generation, rerun the criteria, determine what
24 violations exist.

25 And this is what we will be doing, just

1 to be clear, later this year in the course of the
2 RTEP. We will determine what violations remain, then
3 we will look at whether or not any of those upgrades
4 can be accelerated. Occasionally, that is the case,
5 but not -- often not. But that is what will be
6 required to make a complete assessment of 2011.

7 Q. There has been a lot of discussion in
8 this hearing about the inherent uncertainty in the
9 models and their forecasts of overloads. Would you
10 agree that what we have seen with the runs you
11 presented to us last Thursday show that this
12 uncertainty diminishes as we get closer to the date we
13 are examining?

14 A. Certainly, things become more known. By
15 the time we get to 2011, we will know what generators
16 are going to be in service, we will have a pretty fair
17 idea what the load forecast will be. We certainly
18 won't have any idea what the actual loads will be in
19 the summer of 2011. We will know much more than we
20 know today. That is really the fundamental problem
21 with planning. You have to make assumptions, and you
22 have to essentially take your best shot at what the
23 violations are and what the solutions need to be.

24 We have changes still out on the horizon
25 that could make things better or worse for 2011. And

Watts

1 testimony.

2 MR. WATTS: And I believe that you will
3 receive that on Wednesday.

4 THE HEARING EXAMINER: Okay. Which on
5 Wednesday I believe I will receive the -- I'm not sure
6 if it's the most current available, whether it has the
7 current ISAs in them, you know --

8 MR. WATTS: I believe -- I believe it
9 will be.

10 THE HEARING EXAMINER: Okay. And that
11 will show the need for the line in 2000 -- what's the
12 output going to look like? I mean, am I going to see
13 Mr. Gass' schedule for 2011, 2012, and 2016, or what's
14 the output going to look like?

15 MR. WATTS: Well, the specific request
16 was for Amos-Kempton versus 502 junction to Loudoun
17 in 2011 -- perhaps it was 2012 -- I'm sorry -- 2012.
18 And that's what the study will address. But it is the
19 most recent study for the 2012 case, the most recent
20 information with respect to the 2012 case.

21 THE HEARING EXAMINER: Okay. Now,
22 when -- if the Company was to say the day before
23 construction of this line after all the approvals and
24 everything is gathered and the Company was going --
25 PJM was going to take one last look to make sure that

1 the line was still needed, those runs, would they look
2 at 2011 again?

3 MR. WATTS: I can't answer that. If I
4 can respond briefly. What Mr. Herling testified to in
5 terms of PJM's process is and when they are looking at
6 a backbone addition, significant addition, that they
7 model it and then they go and look at the previous
8 projects, previously approved projects which have not
9 yet been built and take them out and see what happens
10 and put them back if the violations are still there
11 and so forth. They do that project -- they don't do
12 that every week. I mean, that is a part of their
13 orderly structured process.

14 And they certainly will do that at a
15 minimum annually, but they may do it more often than
16 that if they approve a backbone project during the
17 course of an RTEP during the course of the year. That
18 was Mr. Herling's testimony.

19 And so that's why I can't really respond
20 to how often -- for example, if they were to go
21 into -- this is a supposition on my part. If they
22 were to go into the next RTEP and no backbone
23 additions were approved, then -- on the 500 kV system,
24 then I don't know that they would go back until the
25 end of their annual process and look at whether all

1 the projects that were previously approved would still
2 be needed. I don't know when they would do that in
3 their cycle if they didn't approve a backbone project
4 during the course of the cycle.

5 Are you with me?

6 THE HEARING EXAMINER: I think.

7 MR. WATTS: I'm not clear enough on their
8 process to tell you when that would occur. I can only
9 tell you that it's my understanding that what will be
10 available on Wednesday is the most recent available
11 2012 case. It's the final 2012 case.

12 THE HEARING EXAMINER: Okay.

13 MR. WATTS: And that is it for 2012 in
14 terms of all of the data, all the inputs, all the
15 additions, retirements, you know, everything. And so
16 it will be up through the end of 2007 because that's
17 the end of the 2007 RTEP.

18 THE HEARING EXAMINER: Okay. And that
19 will use the 2008 load forecast?

20 MR. WATTS: I expect it will use the 2007
21 load forecast because that's part of the 2007 RTEP.
22 So in other words, it is all matched up within the
23 course of the RTEP cycle so that they are not taking
24 stuff that's out of sequence and layering it on so
25 that the data is all contemporaneous.

1 would be, "Yes."

2 We also wanted to have Mr. Herling
3 address with you your request for the study, and let's
4 move on to that phase, if that's okay with you.

5 THE HEARING EXAMINER: Okay, yes.

6 MR. WATTS: And perhaps we can have
7 Mr. Herling respond to what he understands you have
8 wanted, and if there are differences, we can resolve
9 them.

10 THE HEARING EXAMINER: Okay.

11 THE WITNESS: My understanding from the
12 transcripts is that you are looking for a range of
13 analyses across the time frame from 2011 potentially
14 out to 2017.

15 THE HEARING EXAMINER: Right.

16 THE WITNESS: There are a number of ways
17 that we can approach this.

18 The case that we have provided with the
19 material we just discussed, as I said, is roughly a
20 mid-2007 vintage case for 2012. We can fairly quickly
21 update that case, as I understood from the
22 transcripts, to represent the latest load and
23 generation information as of, say, the end of February
24 and rerun this analysis. That would give us -- for
25 the different combinations of transmission lines, the

1 90 percent --

2 THE WITNESS: Okay.

3 THE HEARING EXAMINER: -- for the
4 generators.

5 THE WITNESS: We'll update everything
6 possible to -- I think you had suggested the end of
7 February of this year?

8 THE HEARING EXAMINER: Yes. I mean, that
9 seems to be the -- just as a way of looking at what
10 the current environment looks like.

11 THE WITNESS: Absolutely.

12 THE HEARING EXAMINER: One thing that I
13 didn't talk about that I had intended to the other day
14 was the possibility of reflecting the load flows
15 assuming that the line is not built in Pennsylvania,
16 with 502 taken out of West Virginia but still, you
17 know, if it was built in Virginia, and what that would
18 do to the load flows. How difficult would that be? I
19 mean --

20 THE WITNESS: I think the best thing for
21 me to do would be to spend a little time later this
22 morning with my staff and give you some ideas as to
23 what we can and can't do and how quickly -- we'll be
24 working on this effort immediately, so we could layer
25 those in as sensitivity analyses once we can present

1 MR. GARY: Your Honor, Mr. Herling is
2 available for cross. I have one question I wanted to
3 ask him to clarify from Thursday.

4 STEVEN R. HERLING, recalled as a witness
5 on behalf of TrAILCo, having been previously duly
6 sworn, was examined and testified as follows:

7 DIRECT EXAMINATION (Recall)

8 BY MR. GARY:

9 Q. Mr. Herling, when you were discussing on
10 Thursday the updated study, before we get into that, I
11 want to make sure, for the record, you explained
12 exactly what is in that study and what is not in that
13 study.

14 A. Certainly. When I discussed Exhibit 139,
15 I think this was clear, but I just wanted to make sure
16 that everyone is aware, we, for the purpose of this
17 analysis only, performed the Mid-Atlantic
18 load-deliverability criteria analysis. The RTEP is
19 comprised of a pretty significant body of analysis
20 that we will be doing, you know, in 2008, as we did in
21 the previous years. That will include load
22 deliverability for 23 different areas as well as
23 generator deliverability and all of the NERC Category
24 C criteria tests, N-1-1, double circuit tower lines
25 and a number of others. That analysis obviously takes

1 considerably longer.

2 This year, because of the number of
3 projects in the RTEP currently that we will have to go
4 back and revisit, we won't even be getting to approval
5 with the PJM board until October of this year. So it
6 is a significant body of analysis. What we did a week
7 ago was just one of those tests, the Mid-Atlantic
8 load-deliverability test. I just wanted to make sure
9 that was clear.

10 MR. GARY: Thank you. Mr. Herling is
11 available for cross-examination.

12 CROSS-EXAMINATION (Recall)

13 BY MR. SUTLIFF:

14 Q. Good morning again, Mr. Herling. For the
15 record, I am Randy Sutliff representing the Board of
16 Supervisors for Fauquier County, Virginia. Seems like
17 we ought to get in the same Cub Scout pack or
18 something. For me, I have a relatively few questions.

19 Thursday, I asked a couple of questions
20 about the survival rate of items in the queue. Do you
21 remember that discussion?

22 A. Yes.

23 Q. I have gone back and sort of looked at my
24 notes and I want to flesh it out a bit. As I
25 understand it, you did an analysis that showed, on a