



Public Service Commission of the District of Columbia

Electric Reliability and Power Supply Adequacy

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Operations
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May 2008 PJM RPM Base Residual Auction: Results and Comparison

Auction Results	RTO			EMAAC			SWMAAC		
	2009 / 2010	2010 / 2011	2011 / 2012	2009 / 2010	2010 / 2011	2011 / 2012	2009 / 2010	2010 / 2011	2011 / 2012
NEW Demand Response Offered [MW]	221.0	31.1	684.5	0.0	0.0	0.0	42.2	162.7	260.2
NEW Demand Response Cleared [MW]	356.7 *	46.1 *	425.9	0.0	0.0	0.0	47.1 *	162.7	221.6
DIFERENCE -- NEW Demand Response that did not clear [MW]	(135.7) *	(15.0) *	258.6	0.0	0.0	0.0	(4.9) *	0.0	38.6
TOTAL Demand Response Offered [MW]	936.8	967.9	1,652.4	376.6	318.9	306.9	356.3	519.0	779.2
TOTAL Demand Response Cleared [MW]	892.9	939.0	1,364.9	372.4	306.4	231.2	356.3	519.0	740.6
DIFFERENCE -- all Demand Response that did not clear [MW]	43.9	28.9	287.5	4.2	12.5	75.7	0.0	0.0	38.6

* NOTE: DR values appear counter-intuitive, but are correct. In previous year, not all "new" DR cleared; current year new cleared thus exceeds new offered

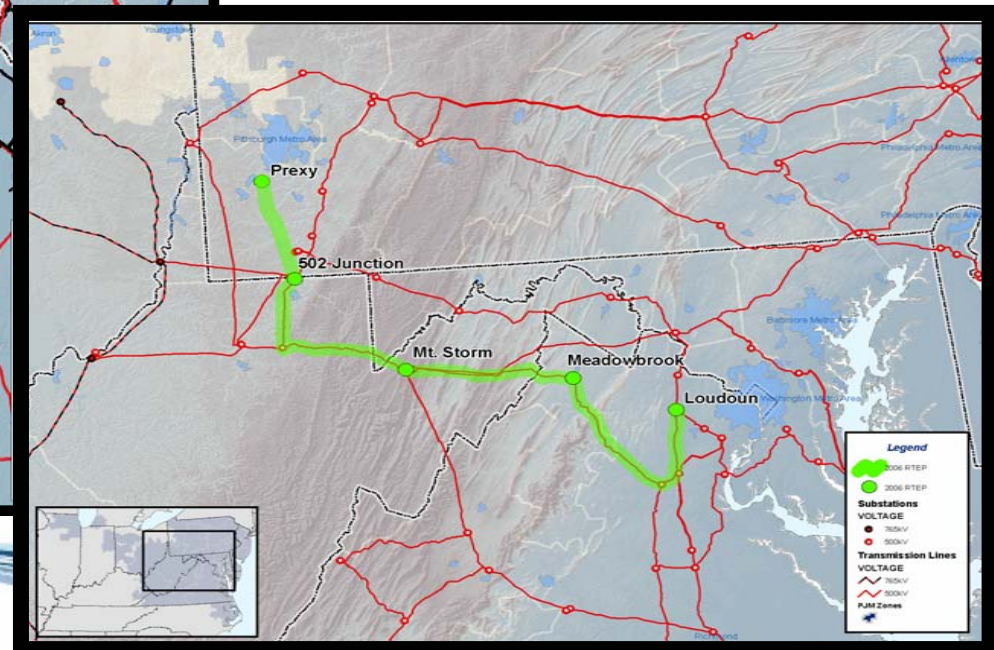
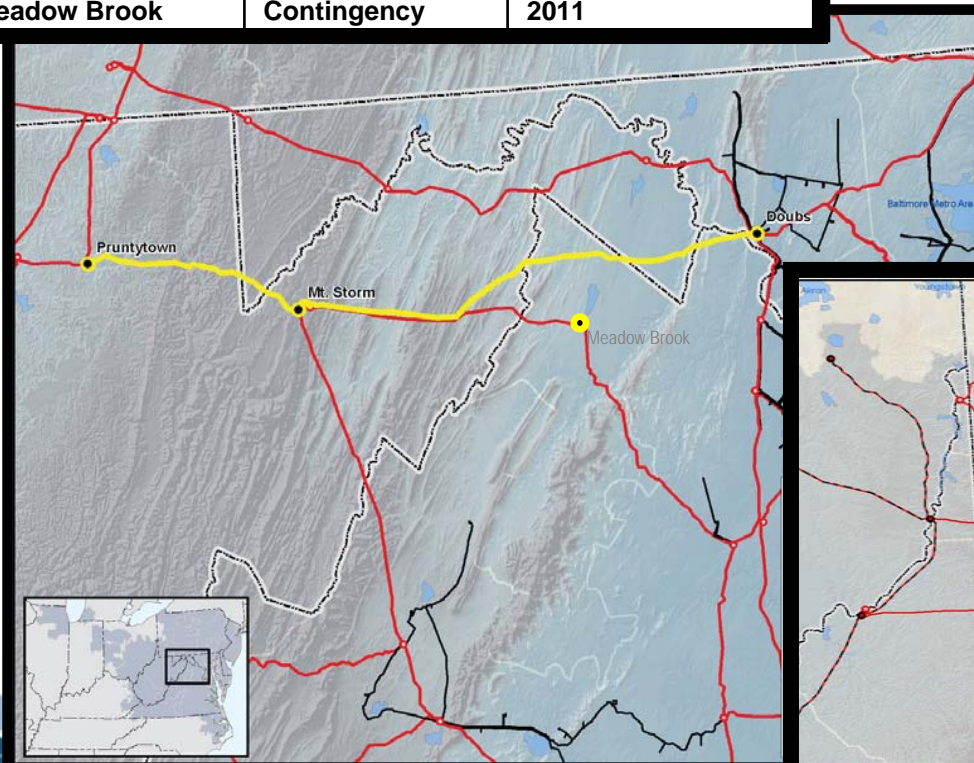


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Resource Clearing Price [\$/MW-Day]	102.04	174.29	110.00	191.32	174.29	110.00	237.33	174.29	110.00
NEW Generation Offered [MW]	439.2	403.6	2,203.7	92.9	124.5	693.2	0.0	0.0	220.8
NEW Generation Cleared [MW]	300.3	285.1	1,916.1	92.9	6.0	535.2	0.0	0.0	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
UPRATES & REACTIVATED Generation Offered [MW]	590.1	727.3	1,243.8	128.6	178.0	205.1	32.0	0.8	186.9
UPRATES & REACTIVATED Generation Cleared [MW]	590.1	727.3	1,002.3	128.6	178.0	198.5	32.0	0.8	106.5
DIFFERENCE -- Uprates & 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

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

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





- 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 DC = 325 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 DC = 100 – 250 MW	Would require remedial action by PJM.
3	PJM 2011 case with ONLY that generation and DR that cleared in the 2011/2012 RPM BRA.	Mid-Atlantic = 2,100 – 2,500 MW DC = 105 – 125 MW	Would require remedial action by PJM.
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.
5	PJM 2011 case with 2011/2012 RPM BRA Gens/DR that cleared + any existing gen that did not clear; (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.

- 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 PEPCo

UpgradeID	Description	Transmission Zone	PJM Required Date
b0228	Upgrade Burtonsville - Sandy Springs 230kV circuit	PEPCO	01-Jun-10
b0238.1	Modify Dickerson Station H 230 kV	PEPCO	01-Jun-09
b0251	Install 100 MVAR of 230kV capacitors at Bells Mill	PEPCO	01-Jun-09
b0252	Install 100 MVAR of 230kV capacitors at Bells Mill	PEPCO	01-Jun-09
b0288	Brighton Substation - Add 2nd 1000 MVA 500/230kV transformer, 2 500kV circuit breakers and miscellaneous bus work	PEPCO	01-Jun-09
b0319	Burches Hill Substation - Add 2nd 1000 MVA 500/230kV Transformer	PEPCO	01-Jun-11
b0366	Install 4th Ritchie 230/69kV transformer	PEPCO	01-Jun-11
b0367	Reconductor 230kV Quince Orchard to Dickerson circuits 33 & 35	PEPCO	01-Jun-11
b0375	Upgrade Dickerson - Pleasant View 230kV Circuit	PEPCO	01-Jun-11
b0467.1	Reconductor the Dickerson - Pleasant View 230kV circuit	PEPCO	01-Jun-11
b0478	Reconductor the three circuits from Burches Hill to Palmers Corner and replace terminal equipment	PEPCO	01-Jun-12
b0496	Replace existing 500/230 kV transformer at Brighton	PEPCO	01-Jun-12
b0499	Install third Burches Hill 500/230 kV transformer	PEPCO	01-Jun-12
b0512.2	MAPP Project Phase 1: install new Possum Point to Calvert Cliffs 500 kV	PEPCO	01-Jun-13
b0512.3	MAPP Project Phase 2: install new Calvert Cliffs - Salem 500 kV	PEPCO	01-Jun-13
b0526	Two new 230 kV circuits between Ritchie - Benning Sta. "A"	PEPCO	01-Jun-12
b0561	Install a 300 MVAR capacitor at Dickerson Station "D" 230 kV substation	PEPCO	01-Jun-12
b0562	Install a 500 MVAR capacitor at Brighton 230 kV substation	PEPCO	01-Jun-12