

PJM's Daily Review of Uplift

Balancing Operating Reserve Monitor Email

- Intra-Day Operating Reserve Monitoring

Energy Market Uplift Reporting

- Daily Uplift Financial Report

- Email sent to dispatch supervisor & dispatch leadership every hour
 - Greater awareness of units accumulating BOR
 - Focus is on real time operations – not necessarily after the fact
 - Developing a video wall display
- “Violating” units section – are units that dispatch can take action on
 - Minimum run is satisfied & unit is accumulating BOR payments
 - Dispatcher can try to set price, release unit or continue to run
- “Info only” section – longer term evaluation may be needed
 - Minimum run not satisfied
 - May have a day-ahead commitment



Balancing Operating Reserve Monitor Email

BORMONITOR CONTROL OPTIONS										
Min-Run Condition	Total OpRsrv Threshold	Bid/LMP Delta Threshold	Notif Interval	Last Notification	Last Solution Timestamp	Next Notification	Notify Dispatch	Notify Ops	Dispatch Email	Ops Email
TRUE	1000	999	60 min	12/07/2014 20:04:40	12/07/2014 21:04:39	12/07/2014 21:04:40	TRUE	TRUE		

* This value is the total balancing operating reserve credit for the current segment of the unit's run.

VIOLATING UNITS													
Violation	UnitID	Unit Name	Total		Current Segment								
			BalOprResv	BalOprResv*	Reason	Bid Price	RT-LMP	Sched-Rate	Min-Run Met	Call-On Time	Call-Off Time	Hours On	Min-Run
BOR			\$1,233	\$1,233	Economic-RT	42.86	42.86	@ (3 hr)	Y	12/07 17:30		3	1
BOR			\$1,214	\$1,214	Economic-RT	42.95	42.95	@ (3.1 hr)	Y	12/07 17:30		3.1	1
BOR			\$1,139	\$1,139	Economic-RT	42.95	42.95	@ (3.1 hr)	Y	12/07 17:30		3.1	1
BOR			\$1,032	\$1,032	Economic-RT	42.86	42.86	@ (3.2 hr)	Y	12/07 17:30		3.2	1
BOR			\$1,073	\$1,073	Economic-RT	42.86	42.86	@ (3.2 hr)	Y	12/07 17:30		3.2	1
BOR			\$1,094	\$1,094	Economic-RT	42.86	42.86	@ (3.2 hr)	Y	12/07 17:30		3.2	1
BOR			\$1,134	\$1,134	Economic-RT	42.19	42.19	@ (3 hr)	Y	12/07 17:30		3	1
BOR			\$1,112	\$1,112	Economic-RT	42.19	42.19	@ (3 hr)	Y	12/07 17:30		3	1
BOR			\$1,061	\$1,061	Economic-RT	42.19	42.19	@ (3.1 hr)	Y	12/07 17:30		3.1	1
BOR			\$1,047	\$1,047	Economic-RT	42.19	42.19	@ (3.1 hr)	Y	12/07 17:30		3.1	1

INFO ONLY BOR UNITS													
Violation	UnitID	Unit Name	Total		Current Segment								
			BalOprResv	BalOprResv*	Reason	Bid Price	RT-LMP	Sched-Rate	Min-Run Met	Call-On Time	Call-Off Time	Hours On	Min-Run
BOR			\$1,233	\$1,233	DA Schedule(Econ)	42.88	42.88	@ (24 hr)	Y	12/07 00:00	12/08 00:00	715.4	24
BOR			\$1,190	\$1,190	DA Schedule(Econ)	43.65	43.65	@ (24 hr)	Y	12/07 00:00	12/08 00:00	669	24
BOR			\$1,043	\$1,043	DA Schedule(Econ)	42.55	42.55	@ (24 hr)	Y	12/07 00:00	12/08 00:00	160.2	8
BOR			\$1,039	\$1,039	DA Schedule(Econ)	41.25	41.25	@ (24 hr)	Y	12/07 00:00	12/08 00:00	463.3	24
BOR			\$1,047	\$1,047	DA Schedule(Econ)	38.65	38.65	@ (24 hr)	Y	12/07 00:00	12/08 00:00	279.5	24
BOR			\$1,036	\$1,036	DA Schedule(Econ)	42.07	42.07	@ (24 hr)	Y	12/07 00:00	12/08 00:00	440.6	24
BOR			\$1,034	\$1,034	DA Schedule(Econ)	41.24	41.24	@ (24 hr)	Y	12/07 00:00	12/08 00:00	1016.5	24
BOR			\$1,038	\$1,038	DA Schedule(Econ)	38.67	38.67	@ (24 hr)	Y	12/07 00:00	12/08 00:00	952.8	24
BOR			\$1,047	\$1,047	DA Schedule(Econ)	38.47	38.47	@ (24 hr)	Y	12/07 00:00	12/08 00:00	571.6	24
BOR			\$1,042	\$1,042	DA Schedule(Econ)	41.34	41.34	@ (24 hr)	Y	12/07 00:00	12/08 00:00	461.5	24



Energy Market Uplift Reporting - Description

Daily report capturing historical and daily figures on an aggregated and on a unit basis

Report date range includes:

- Year-to-Date totals - Aggregated

- Rolling 30 days – Aggregated

- Total Uplift Monthly – Past 3 months - Top 5 units

- Daily - Unit specific - Last 10 days

Categories include:

- Day-Ahead Operating Reserve

- Balancing Operating Reserve

- Reactive (Real-Time & Day-Ahead)

- Blackstart (Real-Time & Day-Ahead)

- Lost Opportunity Cost: CT and Others

YTD totals for major uplift categories (Figures for each category are estimates)

Month	2013						2014						2014 TOTALS MINUS 2013 TOTALS					
	DA OR	BOR	REACTIVE	BLACKSTART	LOC	TOTAL UPLIFT	DA OR	BOR	REACTIVE	BLACKSTART	LOC	TOTAL UPLIFT	DA OR	BOR	REACTIVE	BLACKSTART	LOC	TOTAL UPLIFT
Jan	5,928,134	67,778,302	23,604,234	8,453,397	11,481,334	108,792,005	35,826,983	487,530,396	3,773,749	4,037,517	77,493,612	604,684,740	29,898,848	419,812,094	(19,830,486)	(4,415,879)	66,012,278	495,892,734
Feb	4,980,867	62,395,543	17,624,984	7,134,209	4,730,617	89,732,012	9,492,506	44,584,342	1,043,326	883,414	11,467,661	66,587,836	4,511,640	(17,811,202)	(16,581,658)	(6,250,795)	6,737,044	(23,144,176)
Mar	6,302,475	10,288,210	14,350,137	6,768,618	7,127,313	38,068,135	5,672,743	46,635,050	2,682,504	2,638,249	12,826,397	67,876,695	(629,731)	36,406,839	(11,667,633)	(4,130,369)	5,699,084	29,808,560
Apr	5,712,618	17,635,540	13,670,581	9,242,815	5,781,873	42,800,612	4,185,011	6,706,531	5,272,525	2,815,546	2,995,687	19,159,754	(1,527,607)	(10,929,009)	(8,398,056)	(6,427,269)	(2,786,186)	(23,640,858)
May	5,403,220	14,006,295	17,214,142	8,667,583	8,518,338	45,141,995	6,385,691	8,007,888	5,278,711	1,848,944	12,969,566	32,641,856	982,471	(5,998,408)	(11,935,431)	(6,818,640)	4,451,228	(12,500,139)
June	6,584,357	10,816,722	22,055,238	7,952,100	7,029,836	46,486,153	5,252,998	7,052,122	4,156,518	2,113,151	8,384,403	24,846,041	(1,331,359)	(3,764,601)	(17,898,720)	(5,838,949)	1,354,567	(21,640,112)
July	8,306,004	23,854,405	19,633,772	5,858,221	19,492,274	71,286,455	6,732,413	4,935,560	2,879,977	4,370,704	6,537,262	21,085,212	(1,573,592)	(18,918,845)	(16,753,795)	(1,487,516)	(12,955,012)	(50,201,243)
Aug	4,159,470	8,819,526	27,827,070	7,584,998	5,683,959	46,490,025	5,793,886	4,547,889	1,040,736	4,067,771	5,318,866	16,701,376	1,634,416	(4,271,638)	(26,786,334)	(3,517,227)	(365,093)	(29,788,649)
Sept	6,005,482	19,918,883	27,534,906	7,384,554	11,131,760	64,591,031	7,961,105	6,389,505	1,280,723	3,876,357	5,951,449	21,582,782	1,955,624	(13,529,378)	(26,254,183)	(3,508,197)	(5,180,311)	(43,008,249)
Oct	2,473,705	9,505,540	41,721,300	6,708,931	3,085,323	56,785,868	9,524,201	2,517,334	833,927	2,594,418	7,065,538	19,941,000	7,050,496	(6,988,206)	(40,887,373)	(4,114,513)	3,980,215	(36,844,868)
Nov	2,799,522	15,565,028	42,743,907	6,685,965	2,144,870	63,253,327	5,557,608	5,242,063	542,207	1,422,583	4,293,750	15,635,628	2,758,086	(10,322,965)	(42,201,700)	(5,263,383)	2,148,880	(47,617,700)
Dec	5,224,275	35,007,790	43,464,829	4,403,179	1,108,575	84,805,469												

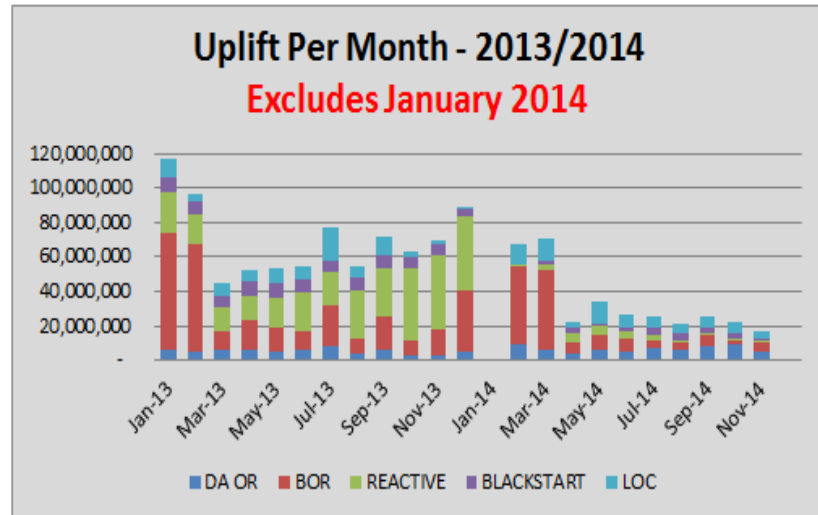
*Figures for each category are estimates

Rolling 30-days - Aggregate

DAY	DA OR	BOR	Reactive	Blackstart	LOC	TOTAL UPLIFT
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Daily aggregated values for Day-Ahead Operating Reserve, Balancing Operating Reserve, Reactive (Real-Time & Day-Ahead), Blackstart (Real-Time & Day-Ahead) and Lost Opportunity Cost for the past 30 days.

Graph



Total Uplift Monthly Top 5 Units

Month	UNITLONGNAME	DA OR	BOR	Reactive DA	Reactive RT	Blackstart DA	Blackstart RT	LOC	TOTAL UPLIFT
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Monthly aggregated values for Day-Ahead Operating Reserve, Balancing Operating Reserve, Reactive (Real-Time & Day-Ahead), Blackstart (Real-Time & Day-Ahead) and Lost Opportunity Cost.

Last 10 days Top 5 Units

DATE	UNITLONGNAME	DA OR	BOR	Reactive DA	Reactive RT	Blackstart DA	Blackstart RT	LOC	TOTAL UPLIFT
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Top 5 daily unit specific values for Day-Ahead Operating Reserve, Balancing Operating Reserve, Reactive (Real-Time & Day-Ahead), Blackstart (Real-Time & Day-Ahead) and Lost Opportunity Cost for the past 10 days.

LOC FOR CT's ONLY - TOP 10 UNITS

DATE	UNITLONGNAME	LOC
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Top 10 daily unit specific values for CT Lost Opportunity Cost for the past 9 days.