California ISO

California Independent
System Operator

Market Update

Presented to ISO Market Surveillance Committee Meeting

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Nov/Dec Highlights

- Approx. 4% load growth trend persisted through Q4 2004
- Real-Time Market patterns seen in Oct. continued in Nov. and Dec.
  - Short (5-10 min.) systemwide spikes due to quick ramp and market clearing
  - Longer (~30 min.) spikes within SP15 due to SCIT and Miguel congestion or other contingencies
  - Relatively few units, mostly SP15 steamers, from a small number of SC's, consistently setting spike prices, usually in \$150-\$165/MWh range
  - Spikes of either type daily during evening ramp (HE 17-18)
- ISO has not zonally split A/S procurement since early December

Key Transmission Upgrades

- Path 15
  - Rerated to 5400 MW from 3900 MW
  - In service and at full capacity December 23
- Pacific DC Intertie
  - Rerated to 2000 MW from 1300 MW
  - In service and at full capacity December 30
- Miguel Substation
  - Rerated to 1100 MW from 700 MW
  - In service and at full capacity October 31
  - Benefit will not be felt until Miguel-Mission line Upgrade
  - With reinstallation of transformers and San Onofre outage, net intrazonal congestion costs at Miguel did not significantly decrease

Load Growth trend continues; Oct was only month in 2004 to see a decrease in load, due to considerably milder weather

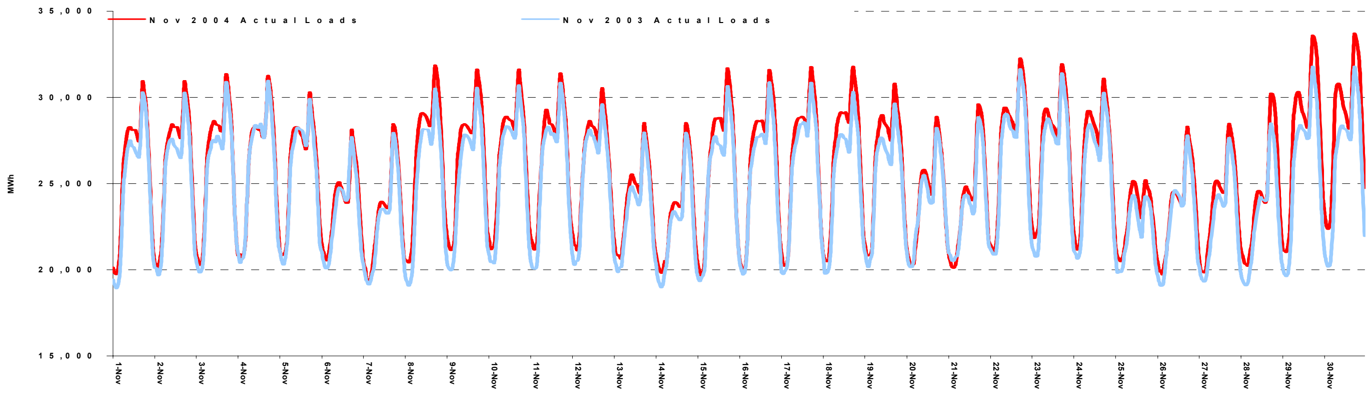
Load Growth Rates Compared to Same Month Prior Year

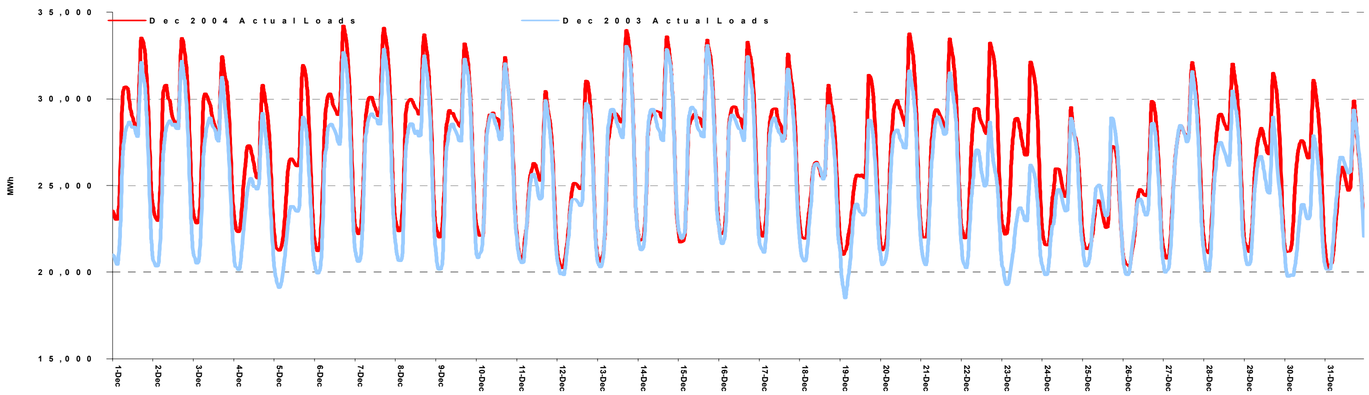
	Avg. Hrly. Load	Avg. Daily Peak	Avg. Daily Trough	Monthly Peak
January-04	4.3%	3.1%	5.1%	3.2%
February-04	4.5%	3.9%	5.4%	4.5%
March-04	4.4%	5.1%	2.5%	4.5%
April-04	7.1%	8.3%	4.8%	31.1%
May-04	7.3%	7.7%	5.5%	2.5%
June-04	6.6%	6.9%	6.1%	-4.7%
July-04	0.7%	0.3%	1.9%	4.0%
August-04	1.0%	0.6%	0.6%	5.2%
September-04	3.4%	3.5%	3.4%	10.1%
October-04	-1.4%	-2.8%	1.5%	-5.9%
November-04	4.2%	3.9%	3.9%	6.6%
December-04	4.4%	4.1%	6.5%	3.4%
Annual Average	3.7%	3.5%	3.8%	4.9%

Notes: Through 7/10/03: Actual loads at top of hour. Since 7/11/03: Hourly average loads.

Load growth persistent in all periods, including holidays and off-peak

Comparison of Loads: November (Top) and December (Bottom) 2004 v. 2003





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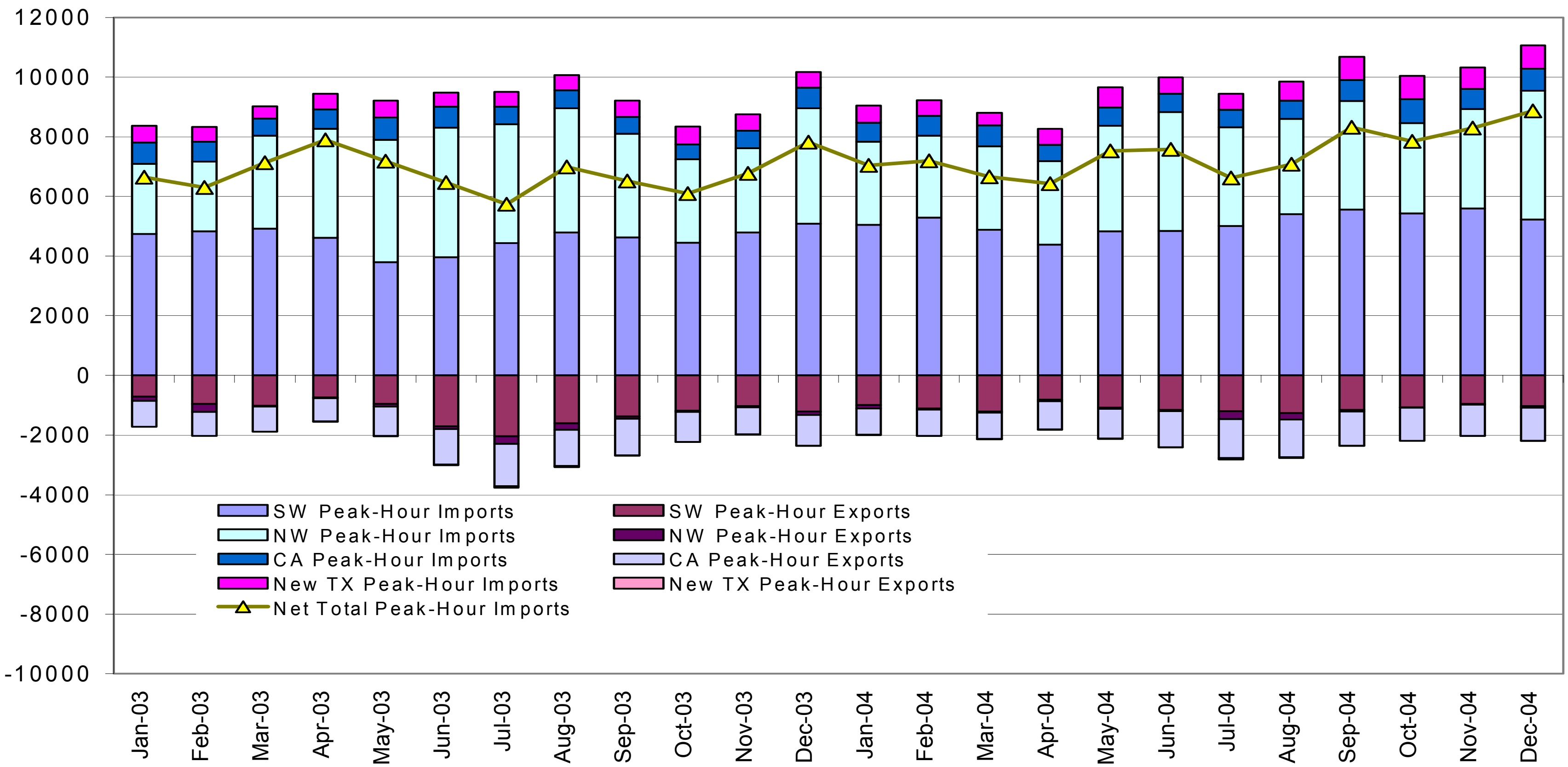
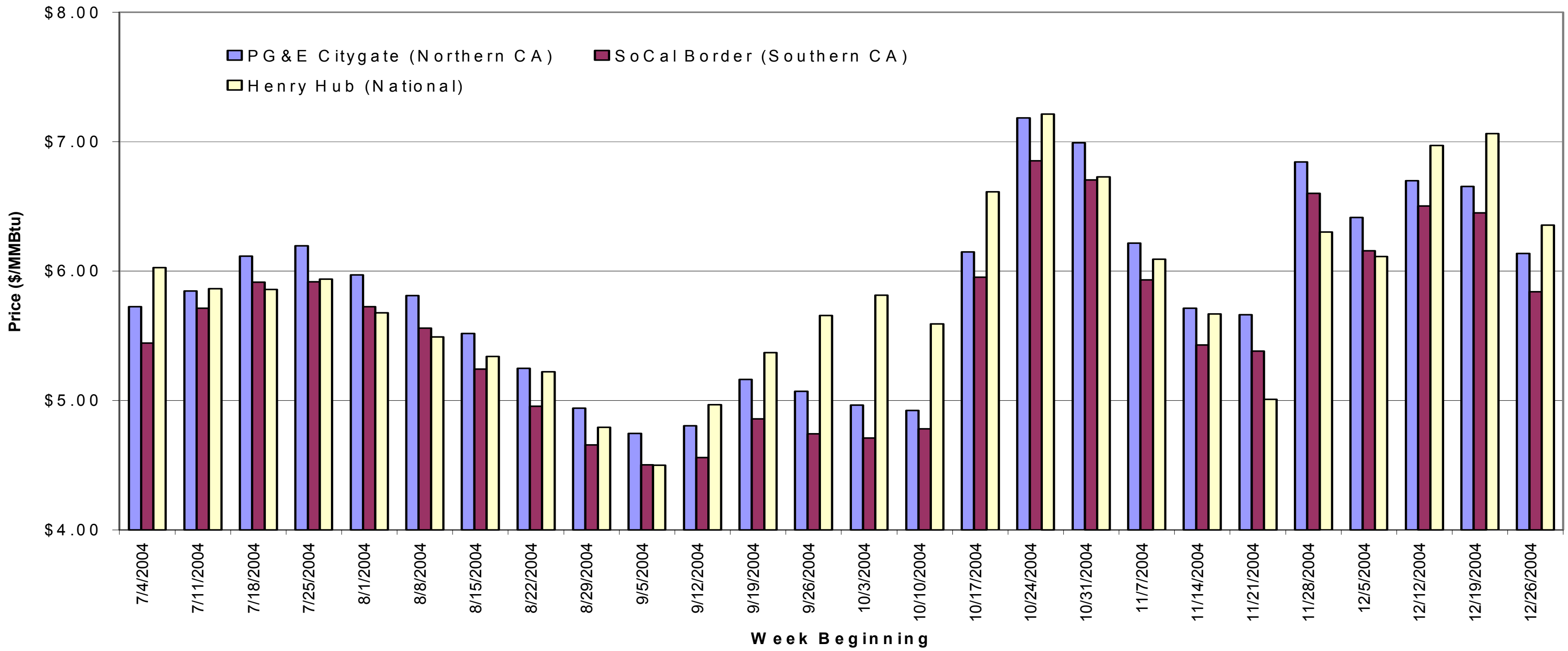
Monthly Average Peak-Period Imports and Exports: Jan-03 through Dec-04



Average Monthly Gas Prices
Dec-02 through Dec-04



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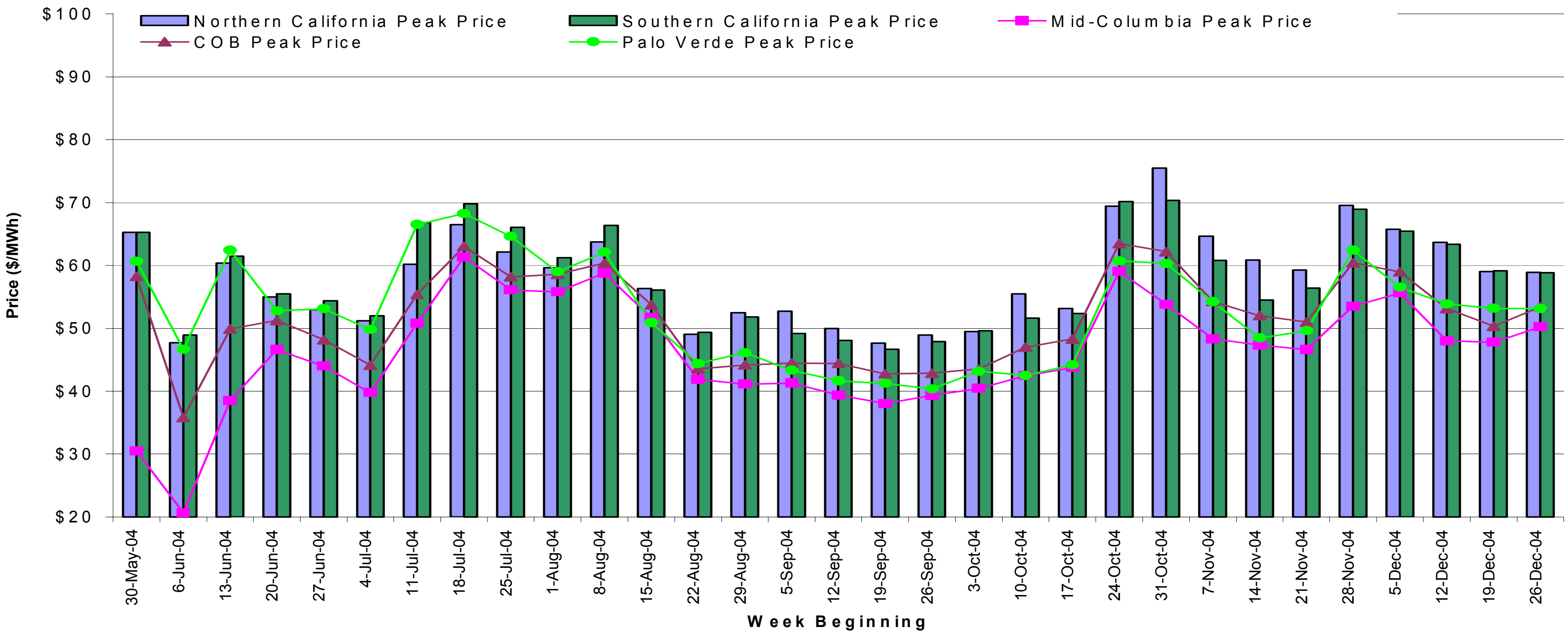
Price spreads tend to reflect congestion on Palo Verde, COI, and PDCI

Regional Day-Ahead Forward Electric Prices - Weekly Averages



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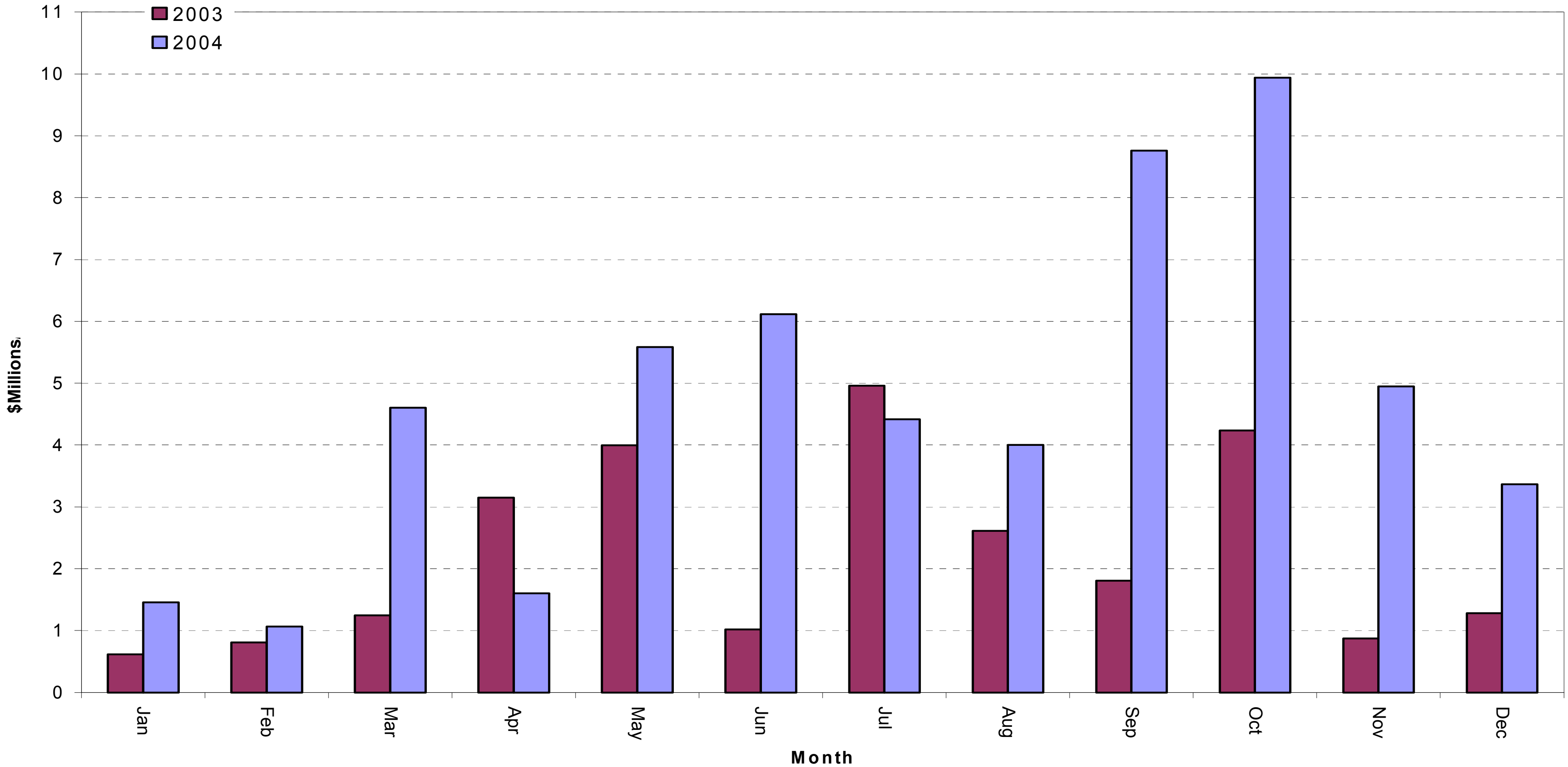
Congestion costs high, thanks in part to transmission outages and Nuke derates

Monthly Interzonal Congestion Costs: 2004 vs 2003



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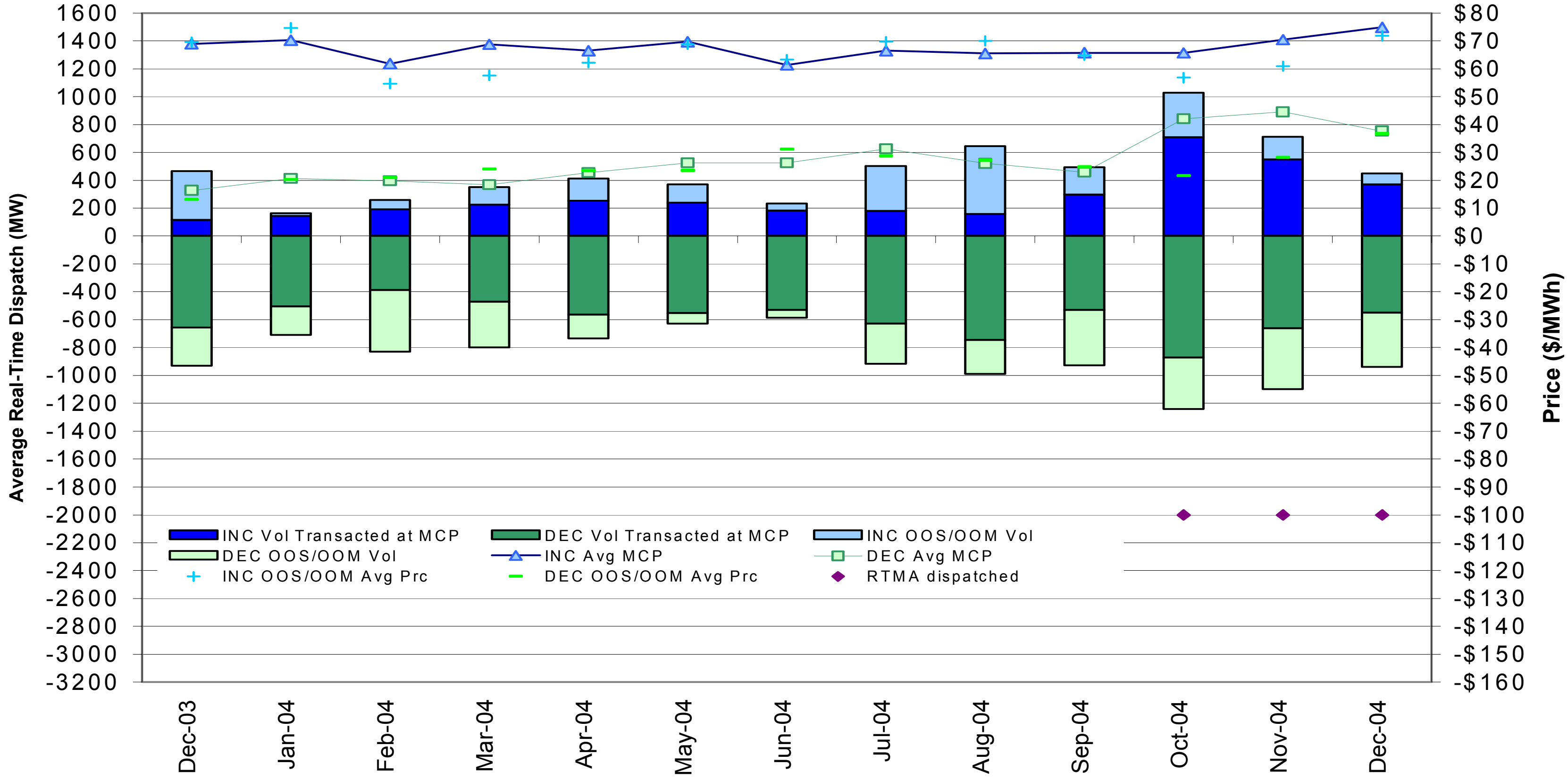
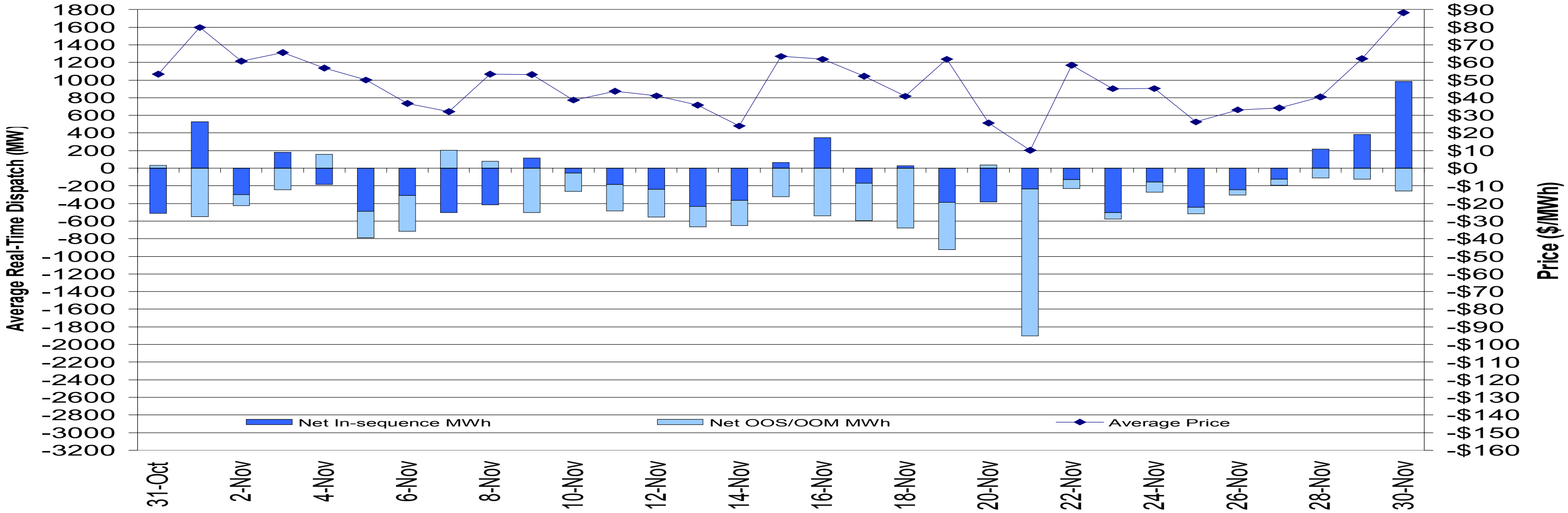
RTMA prices higher in December, due in part to lower volume, Market clearing, and resultant volatility

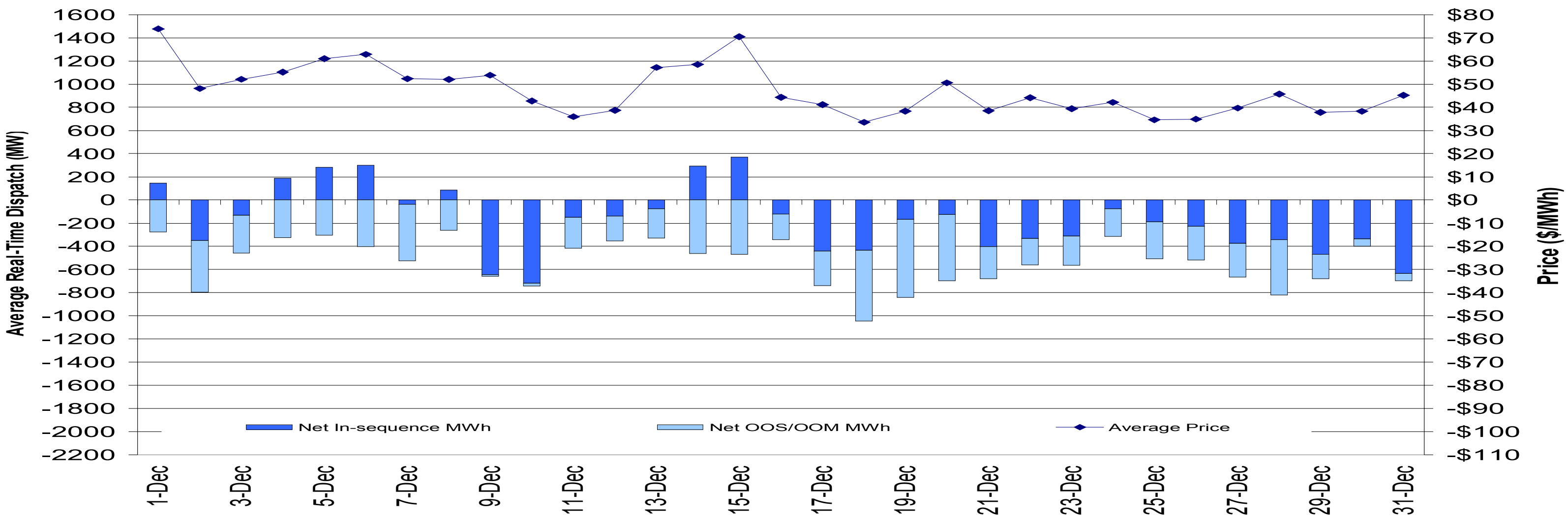
Weekly Average ISO RTMA In-Sequence and OOS/OOM Volumes and Prices: Dec-03 through Dec-04



Net remains heavily decremental

Daily Average Net ISO RTMA In-Sequence and OOS/OOM Volumes and Average Prices: November (Top) and December (Bottom)





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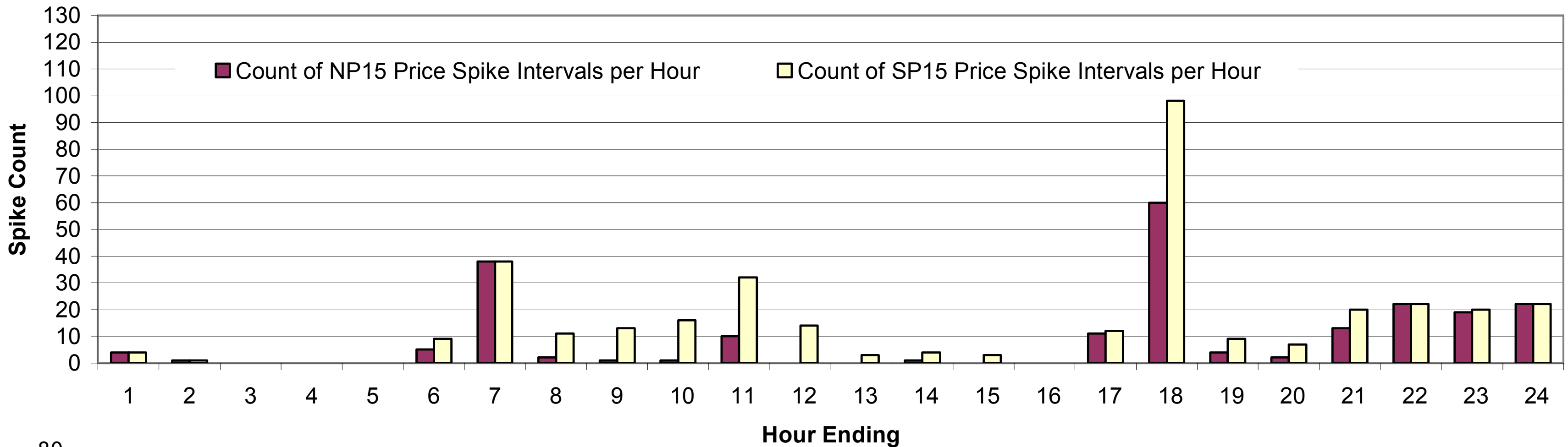
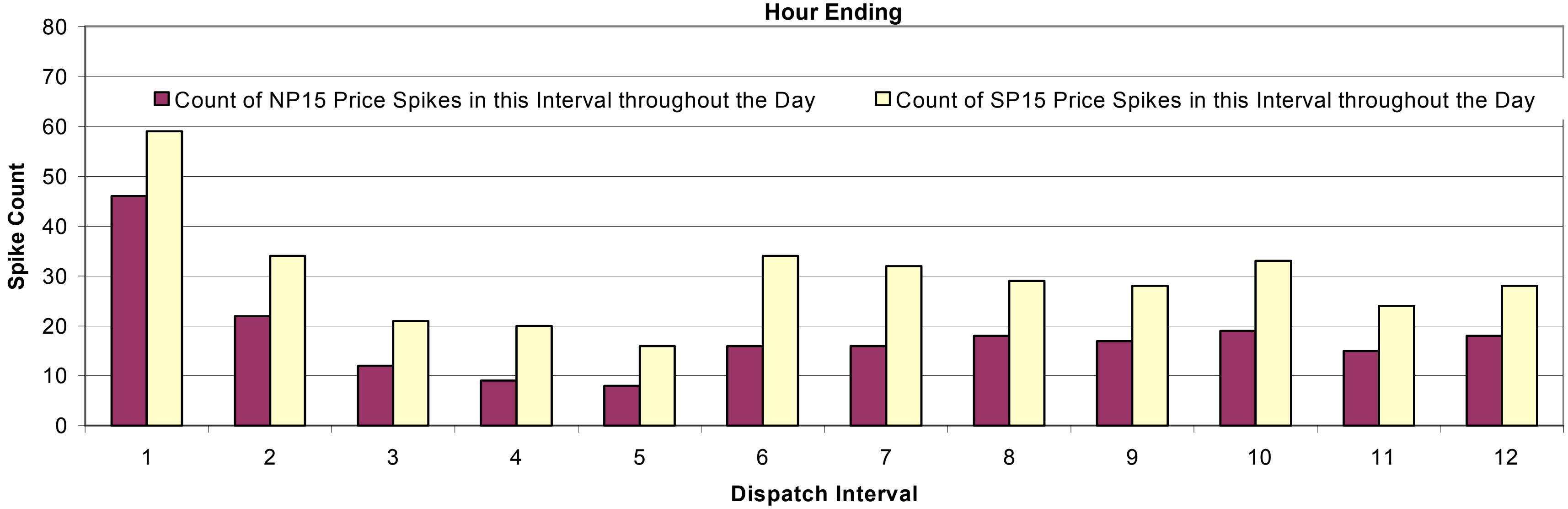
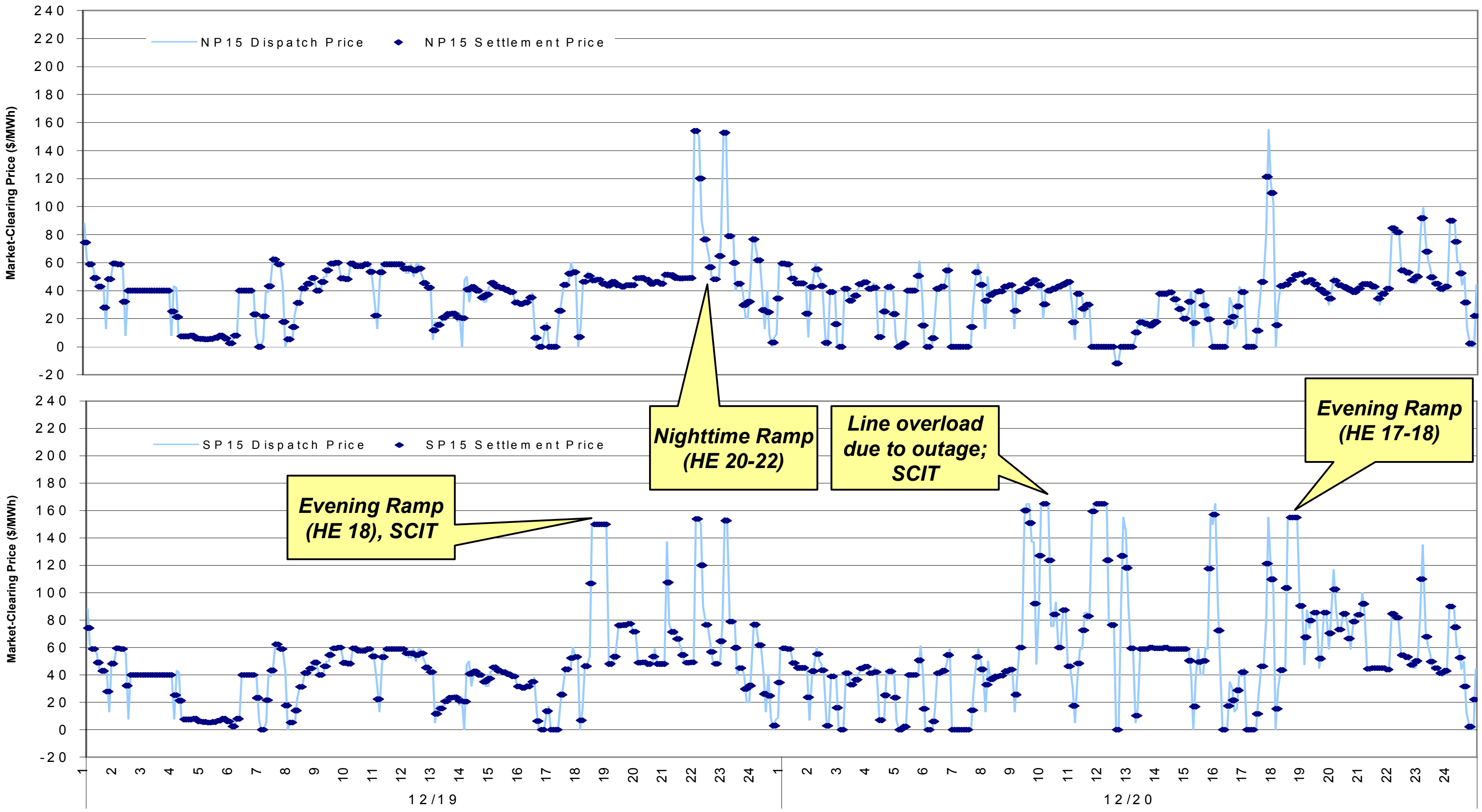
Spikes occur regularly during ramp hours, especially HE 18 (evening ramp).

Count of Price Spikes in Dispatch Intervals per Hour (top) and Frequency by Dispatch Interval (bottom): December 2004





Five-Minute NP15 (Top) and SP15 (Bottom) RTMA In-Sequence Prices:19-Dec through 20-Dec



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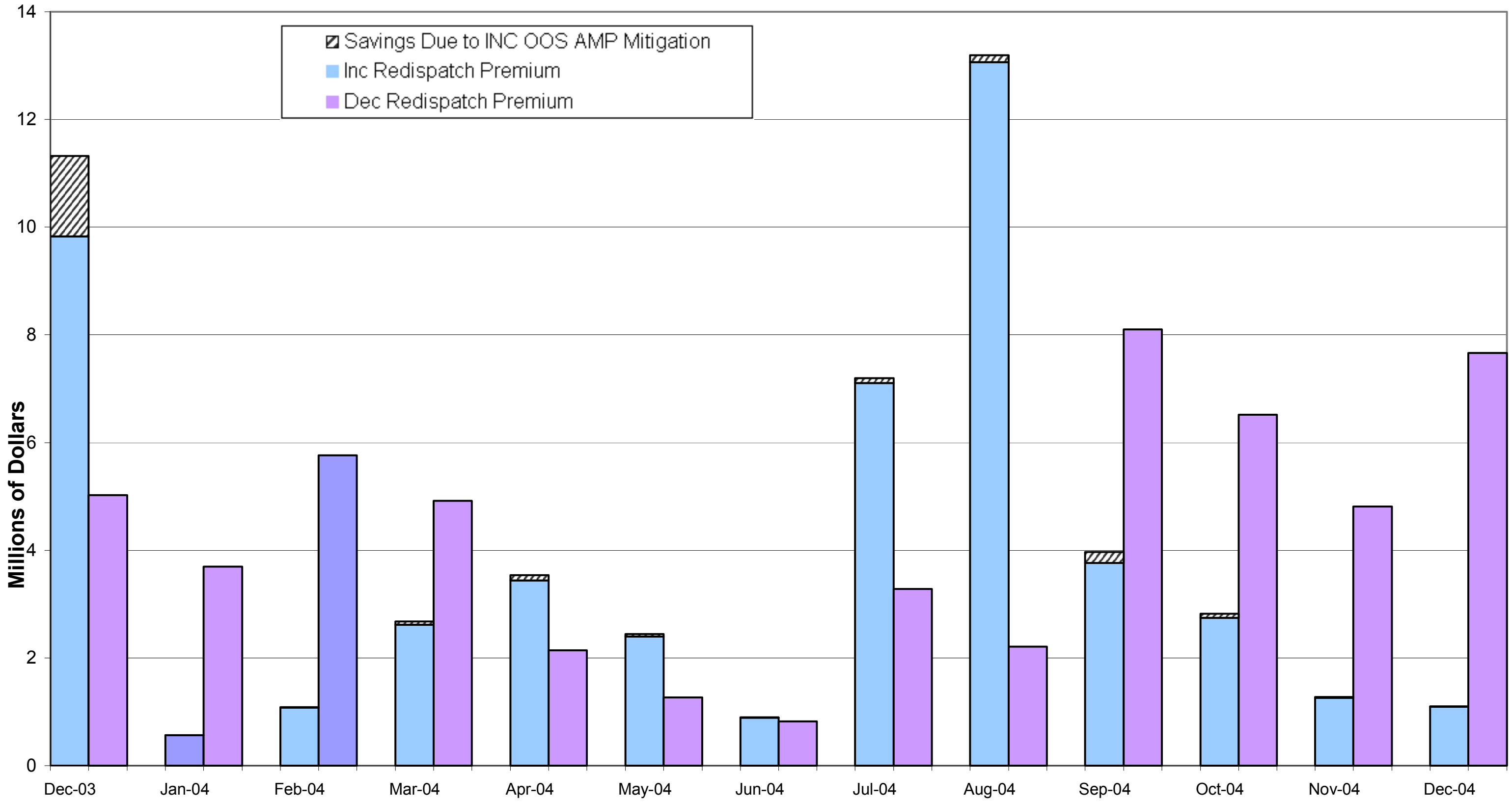
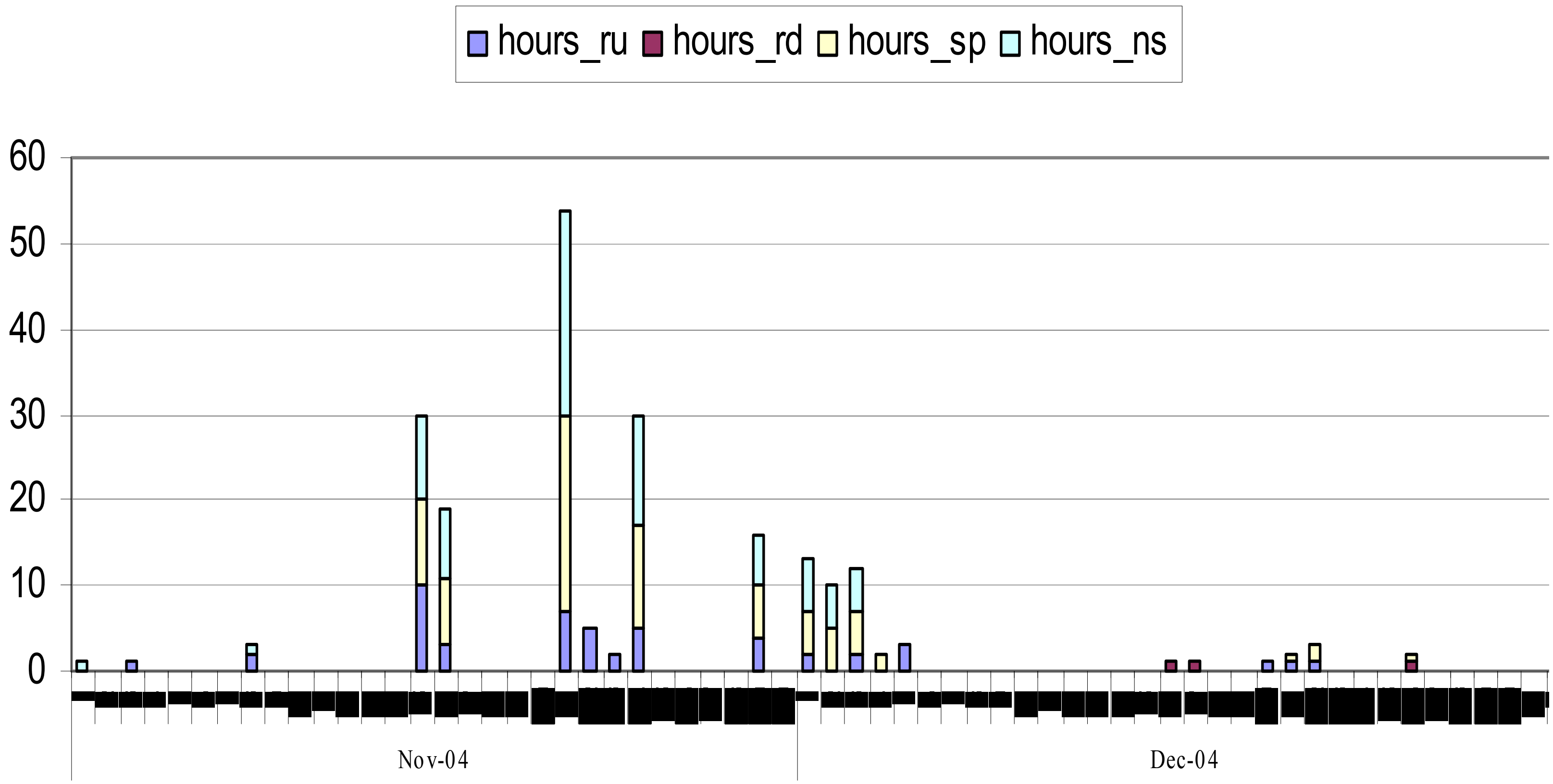
Intrazonal dispatches primarily decremental for mitigation of SCIT and Miguel congestion, often concurrent with counterbalancing INC dispatches and price spikes

Monthly redispatch costs through December



Nov. shoulder season: Large units out of service for seasonal maintenance, limiting supply in Ancillary Services markets. Meanwhile, grid conditions often necessitated zonal procurement, resulting in price spikes when offers were not sufficient to meet reserve requirements.
December: Improving grid conditions allowed operators to procure on a systemwide basis.

Count of Hours with Bid Insufficiency in November and December



Improved grid conditions in December resulted in decreased market splitting; no splits since 12/3/04.