Discussion on Negative Bidding of UFR Type Resources

Demand Side Working Group Meeting
December 9, 2005

6.5.4.(8) The amount of Resources on high-set under-frequency relays providing RRS will be limited to fifty percent (50 %) of the total ERCOT RRS requirement.

ERCOT Hourly RRS Requirement: 2300 MWs

By 1300 QSE's submit their Self Arranged A/S Schedules
(schedules are resource type specific; either GEN or UFR for RRS)

2300 – SA GEN – SA UFR = Amount to Procure

New prorating methodology will be implemented

Step 1: Use standard rounding a clear all tied bids proportionately

Step 1 can create either a positive mismatch (overage) or negative mismatch (underage) and therefore an additional step is needed.

Step 2: For positive mismatch; randomly reduce all tied bids by 1 MW until overage = 0
For negative mismatch; randomly increase all tied bids by 1 MW until underage = 0

Using bid structure in previous example

Total Tie Bids = 245 MW
MW requirement from Tie Bids = 227 MW

Cleared 228 MW in Step 1 which created a 1 MW positive mismatch

Step 2: Reduced 1 bid randomly by 1 MW (happened to be the 4 MW bid

LaaR Prorating (Post R4)

Bid MW (bidmw)	Bid Price	Clearing Price	A/S Type	Proration (Step 1)	Proration (Step 2)	Struck MW
1	$0.20	$12.00	RRS	1	0	1
1	$0.20	$12.00	RRS	1	0	1
1	$0.20	$12.00	RRS	1	0	1
2	$0.20	$12.00	RRS	2	0	2
2	$0.20	$12.00	RRS	2	0	2
3	$0.20	$12.00	RRS	3	0	3
4	$0.20	$12.00	RRS	4	-1	3
5	$0.20	$12.00	RRS	5	0	5
6	$0.20	$12.00	RRS	6	0	6
10	$0.20	$12.00	RRS	9	0	9
10	$0.20	$12.00	RRS	9	0	9
11	$0.20	$12.00	RRS	10	0	10
12	$0.20	$12.00	RRS	11	0	11
30	$0.20	$12.00	RRS	28	0	28
42	$0.20	$12.00	RRS	39	0	39
50	$0.20	$12.00	RRS	46	0	46
55	$0.20	$12.00	RRS	51	0	51
245				**228**	**-1**	**227**

6.10.5.4. Responsive Reserve Services Performance Monitoring Criteria

(1)   Not less than ninety-five percent (95%) nor more than one hundred fifty percent (150%) of the RRS requested, subject to the declared capabilities of the QSE, is provided within ten (10) minutes of ERCOT's deployment Dispatch Instruction and maintained until recalled or the QSEs service Obligation expires; and

Compliance Example:

1150 MWs Maximum participation from LaaRs providing RRS.

Therefore ERCOT-Wide there should be no greater than 1725 MWs armed

ERCOT Opens an Adjustment Period Market for RRS

The engine will procure the least cost solution (if negative bids are still active they will be procured)

Unexpected consequences:
•Under 6.9.1.5. Settlement of ERCOT Ancillary Services Capacity Procured for Defaulted AS Obligations, the QSE procured in the Adjustment Period Market will be charged to provide the added services. This is a pay as bid situation.
•The QSE(s) who defaulted which was the cause for ERCOT to open an Adjustment Period Market will not only get paid for the services that were procured in the DA A/S Market but they will also now get paid for their share of the default.

•During 2004, ERCOT staff found 89 hours where LaaRs set the clearing price for RRS (1% of all hours)

•These are hours where QSEs self-arranged at least 1150 MWs of the RRS requirement with Generation Resources. If 1150 MW are self-arranged, *any* RRS bids can be procured to fill the remaining portion of the 2300 MW hourly requirement.

•LaaR bids are generally less than Generation Resource bids

•In 2004 the LaaR bid portion of the bid stack was generally less than $1. During most of the hours mentioned above the clearing price was $0.01 or $0.02.

•Also during 2004, ERCOT staff found approximately 1800 additional hours where QSEs self-arranged at least 1150 MWs from Generation Resources.

•The LaaR bids did not set the clearing price during these hours only because the LaaR portion of the bid stack was completely procured and the higher Generation Resource bids set the price.

•Today, under similar circumstances, due to the current depth of the LaaR portion of the bid stack, in many of these hours, the price would have been set by a LaaR bid.

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Currently, the LaaR portion of the bid stack is ranging from $0 to -$17,500 per MW.

If a current bid stack were used to clear the market under the same type conditions, the cost to LaaRs could easily be $50MM* for that one day.
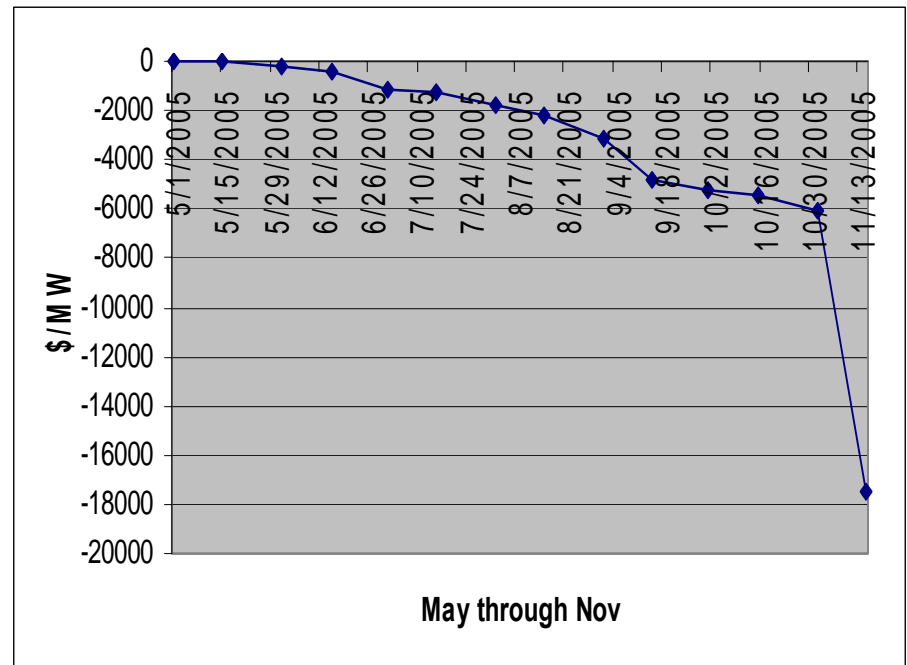
*The $50MM estimate is based on the bid stack for 11/15/05. LaaR bids are still dropping rapidly.*

Who Sets the Clearing Price for Responsive?

	No Gen Procured for the Interval (also means LaaR set the MCPC)	Gen Self Arranged was ≥1150 MW
2004 1st Quarter	4	849
2004 2nd Quarter	37	601
2004 3rd Quarter	49	478
2004 4th Quarter	0	1
2004 Yearly Total	90	1929
2005 Yearly Total	0	0

•The best solution is likely to take many months to implement. ERCOT staff recommends implementing a temporary solution quickly to guard against very large negative bids setting the clearing price for RRS.

•The risk of prolonging a "fix" can have a significant impact on the entire market and not just the QSEs with negative LaaR bids:

➤If a QSE representing a LaaR also represents Load, the QSE may default if faced with a large bill for providing LaaR service. If such a QSE defaults, a mass drop could result.

➤In the event of a default due to a nonpayment resulting from a negative LaaR-set clearing price, uplift provisions require ERCOT to collect funds from QSEs on a Load Ratio Share basis and distribute them to the QSEs owed money (this would be only those QSEs who are not fully self-arranged for RRS).

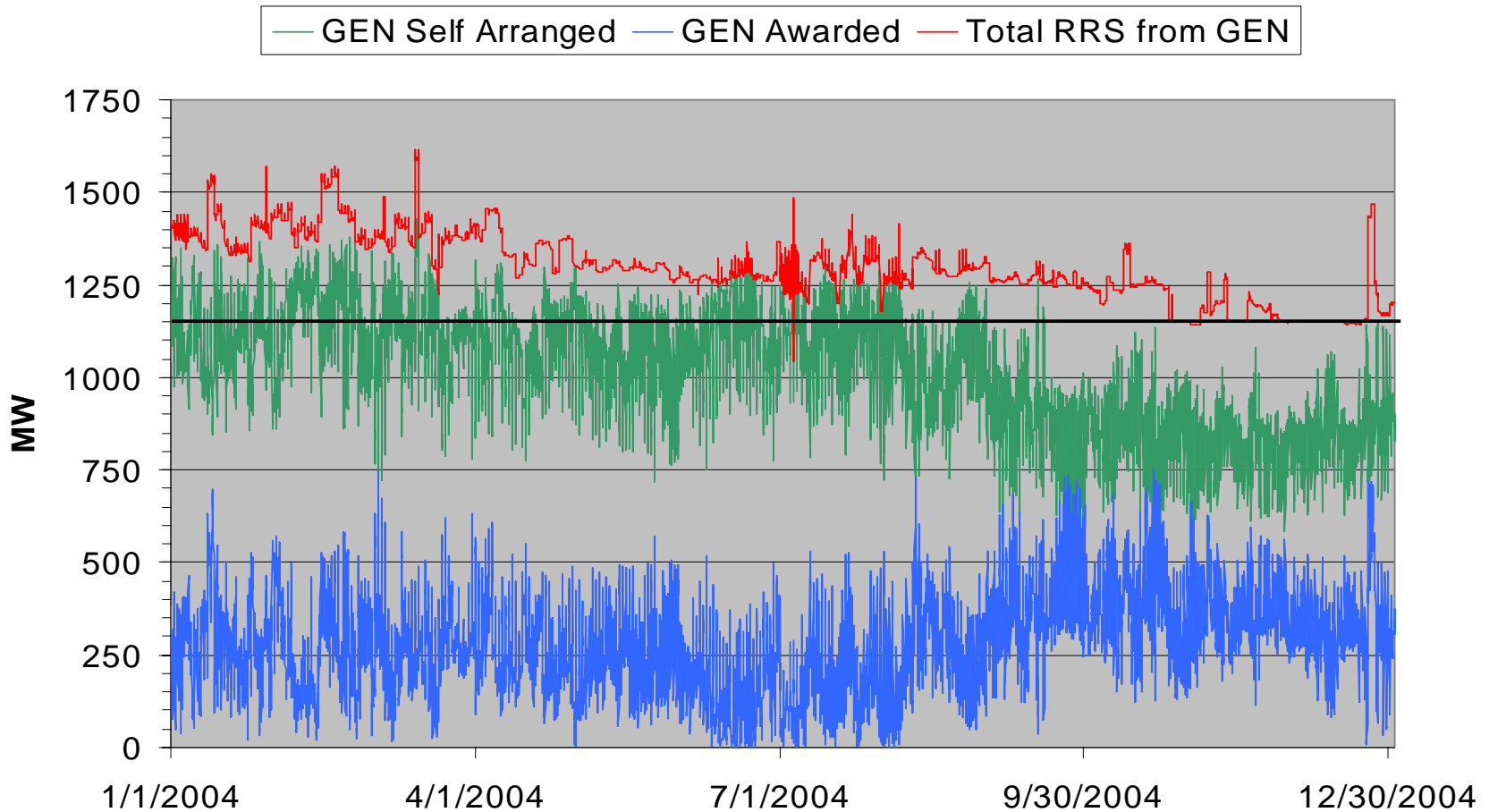# LaaR Registration Summary

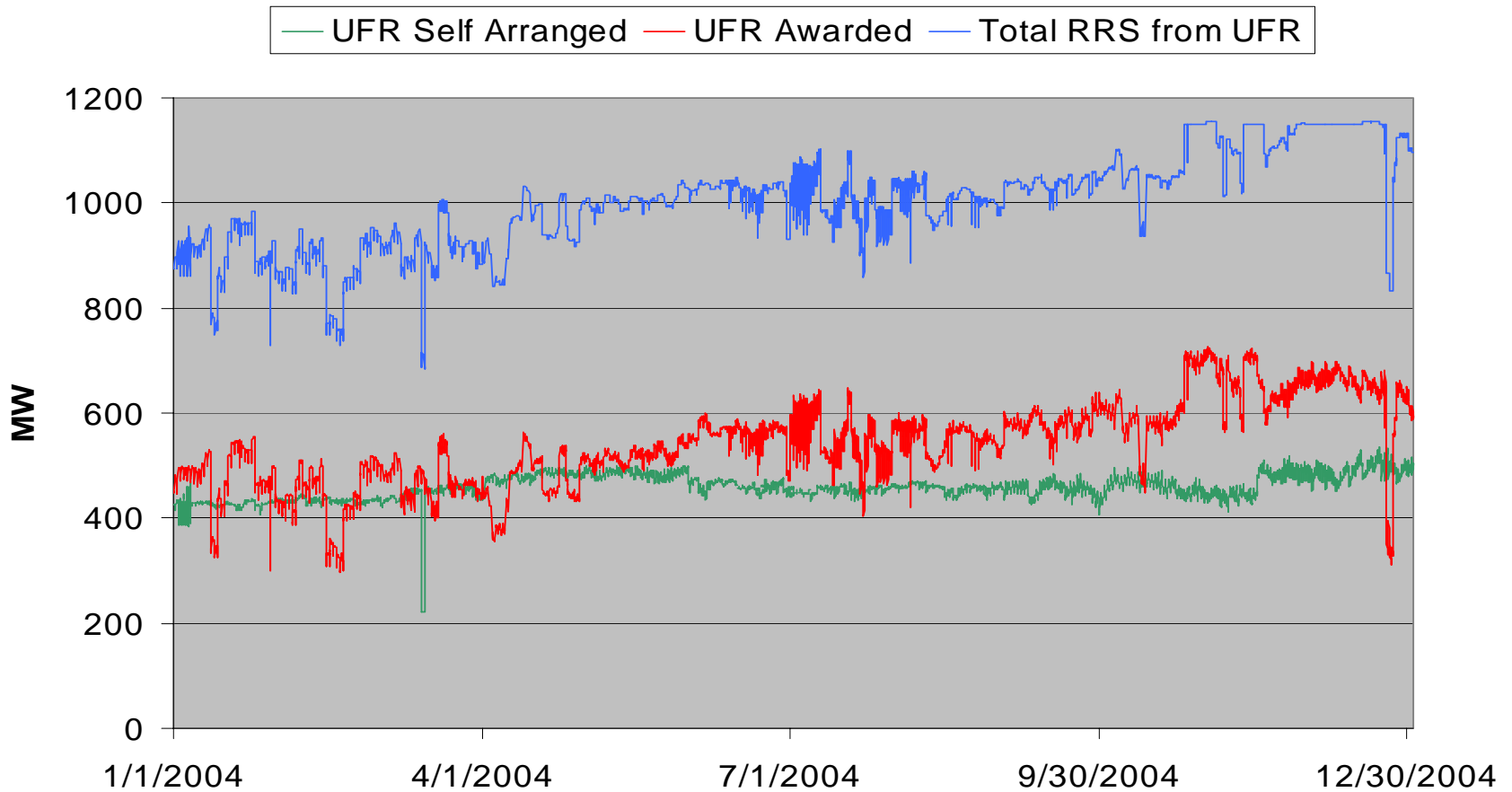LaaR's Registered for ERCOT AS Market

2004 RRS Summary

RRS Summary (2004)

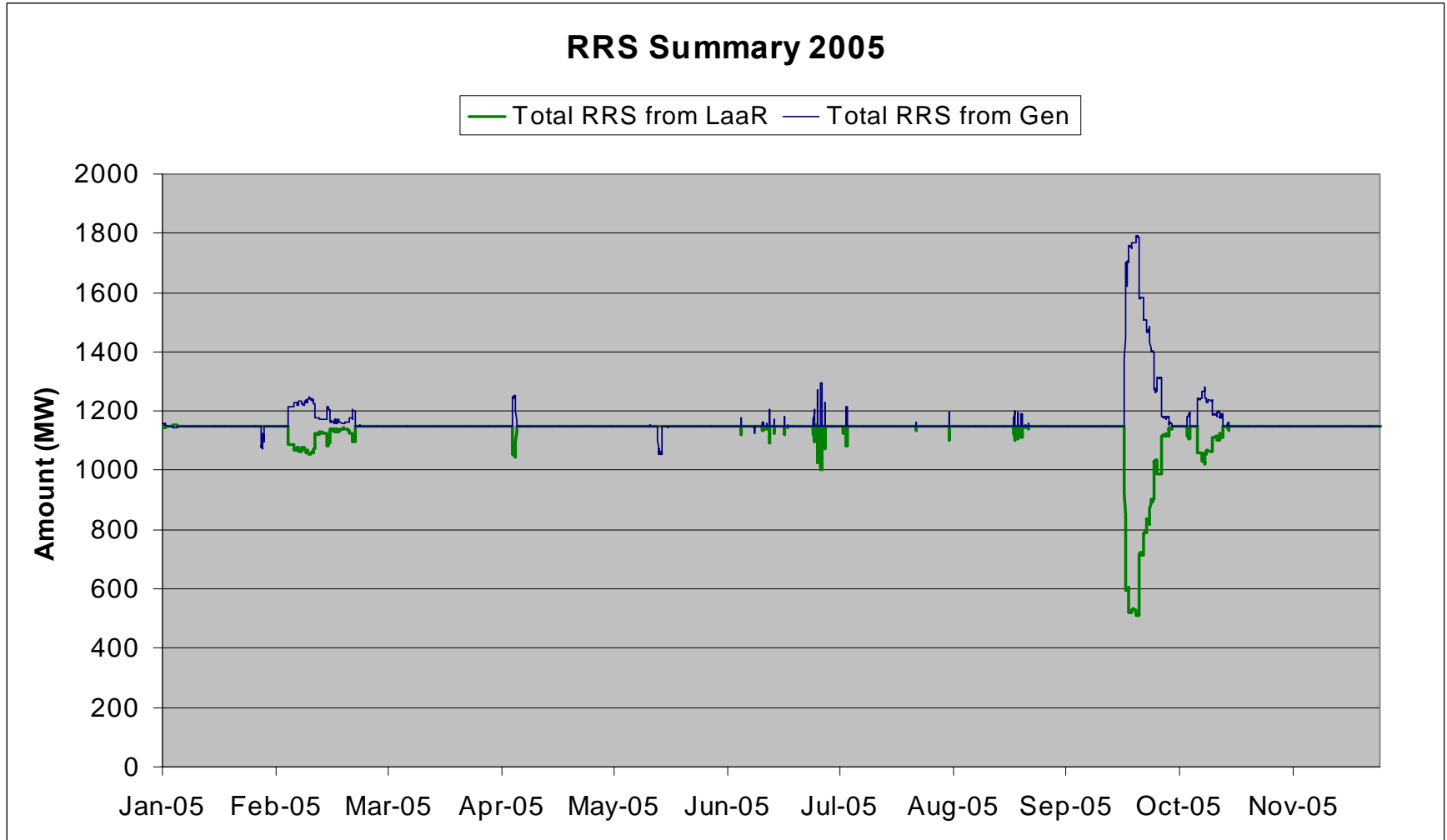Legend: RRS from UFR (blue) — RRS from GEN (red)
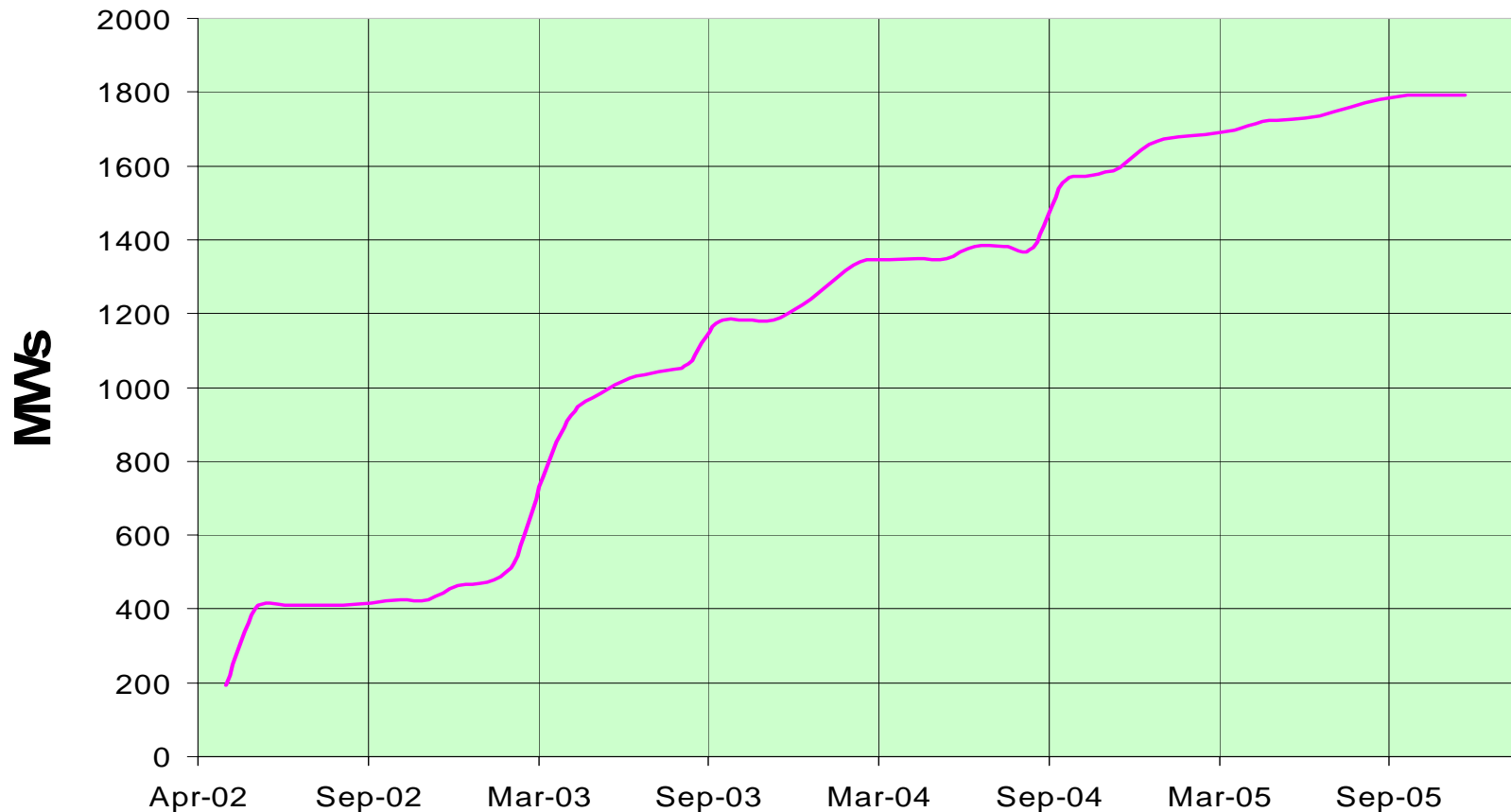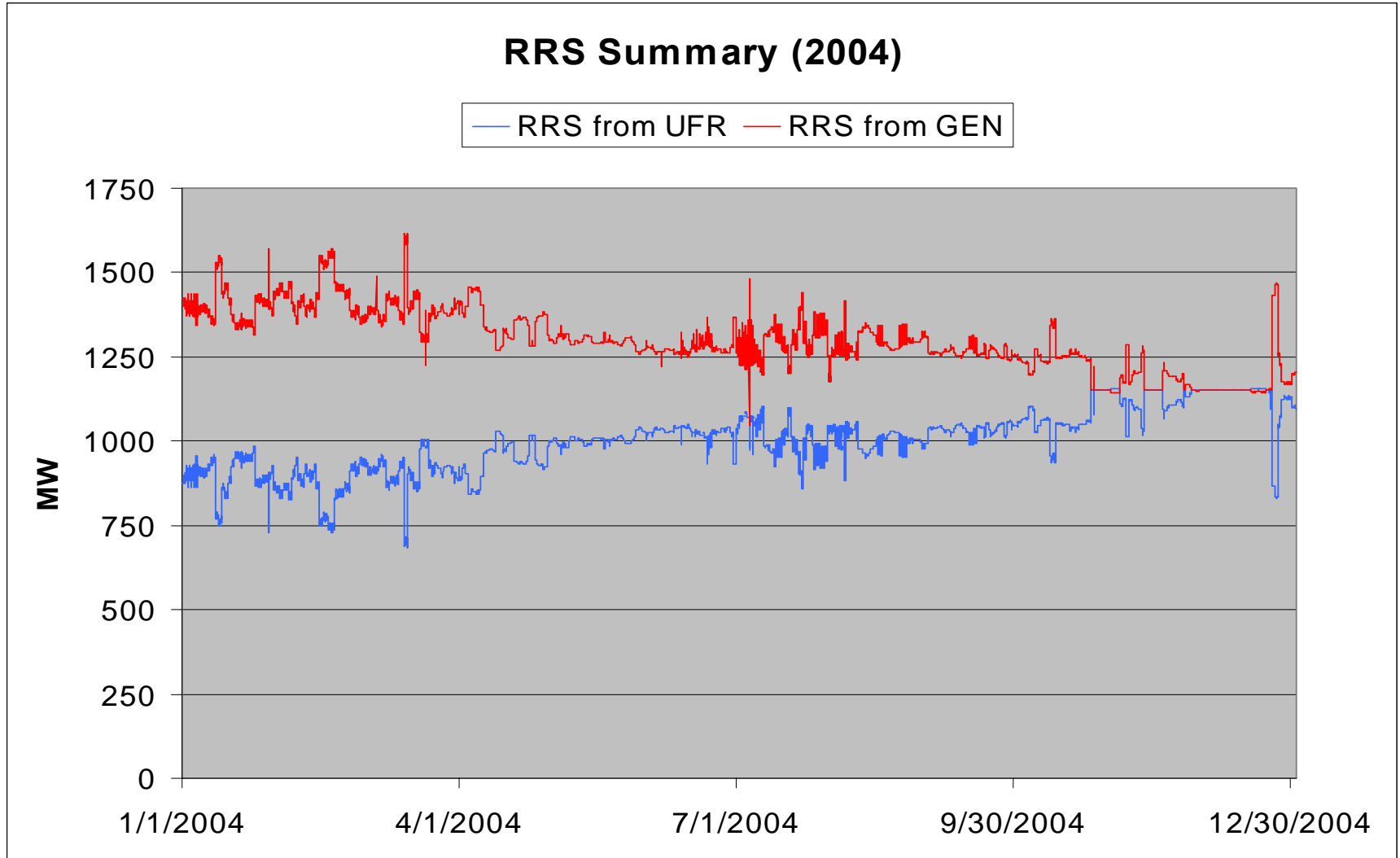
2004 RRS Summary

RRS from GEN (2004)

Legend: GEN Self Arranged — GEN Awarded — Total RRS from GEN

2004 RRS Summary

RRS from UFR (2004)

RRS Summary 2005

2005 RRS Summary

Responsive Reserve Service from Generation

Legend: GEN Awards — GEN Self Arranged — Total RRS from Gen

2005 RRS Summary

Responsive Reserve Service from LaaR's