California Independent
System Operator

CONGESTION REVENUE RIGHTS SENSITIVITY STUDY REPORT

An Addendum to the Congestion Revenue Rights Preliminary Study Report Dated October 1, 2003

December 15, 2003

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Congestion Revenue Rights Sensitivity Analysis Report

1 Introduction

The California ISO released the "Congestion Revenue Rights Preliminary Study Report" in October 2003. The October study (CRR Study 1) was the first installment of a comprehensive study undertaken by the ISO to assess the availability of CRRs to hedge congestion charges under the ISO's Market Design 2002 (MD02) Proposal. The sensitivity analysis described in this report, which is an addendum to the CRR Study 1 report, was undertaken to develop additional useful information for Market Participants and the ISO in assessing CRR allocations under MD02.

The sensitivity analysis consists of two sensitivity runs -- Sensitivity Run 1 and Sensitivity Run 2. Sensitivity Run 1 (SR1) treats existing contracts (ETCs) as obligations, consistent with the ISO's July 22, 2003 Conceptual Design filing[1]. Sensitivity Run 2 (SR2) treats all allocation requests as options, for comparative purposes, as requested by Market Participants.

Prior to conducting market runs for the sensitivity analysis, certain changes were made to the data set that was used for CRR Study 1. These changes are described below.

2 Data Set Modifications

The following modifications were made to the original data set used in CRR Study 1 before the sensitivity analysis market runs were made.

- In some cases existing contracts provide for rights in both the source to sink direction and the sink to source direction. Since the use of ETCs in the sink to source direction is highly unlikely, these ETC rights were eliminated from the data set prior to running the simultaneous feasibility test for market runs 1 and 2 of the sensitivity analysis. This resulted in additional capacity in the network for CRR allocations.

- The ETCs associated with the Mohave No.1 generation were incorrectly modeled as coming 100 percent from Unit No. 1. This was changed such that 50 percent of the ETCs are coming from Unit No.1 and 50 percent from Unit No.2.

- A small quantity of Converted rights was mistakenly modeled as going over Sylmar_2_NOB in the October Study and was modified to go over Sylmar_2_LDWP.

- A small quantity of converted rights on Palo Verde, Mead, and Sylmar/NOB that was inadvertently left out of the October Study was included in the sensitivity analysis runs.

[1] Note that CRR Study 1 treated ETCs as CRR options. The change of the option hedge type to an obligation hedge type for ETCs is consistent with the Conceptual Design filing. However, the MW values of the ETCs used in this sensitivity study remained the same as in CRR Study 1, whereas the Conceptual Design filing implies that the MW value will be based on actual usage rather than the contractual right.

- The San Diego In and Out interface limits were changed from 2450 MW to the correct 2850 MW value. Please note that the original value (i.e., 2450 MW) had no impact on the original results from CRR study 1 since this constraint was never binding. The new value of 2850 MW also did not have any impact on either CRR Sensitivity Run 1 or CRR Sensitivity Run 2 since again this constraint was never binding.

3 Market Runs

The sensitivity analysis consisted of running the same ten markets described in the CRR Study 1 Report. In Sensitivity Run 1, the 10 market runs were conducted while treating all CRRs as obligations. In the CRR Sensitivity Run 2, for comparative purposes, the 10 market runs were made while treating all CRRs as options.

4 Sensitivity Run Results

The following bar graphs show a comparison of results for the two sensitivity runs, along with the results from CRR Study 1[2]. The data sets for the two sensitivity runs reflect the changes noted in Section 2 above, while the original data set does not. Consequently, the reader is advised to recognize these differences when comparing the original study results with the results of the sensitivity study runs.

Each of the graphs below is separated into the annual plus respective monthly allocation results for on and off-peak periods and reflects the percentage of cleared allocation requests by participant[3]. The last column of the graph shows the total percentage cleared for all participants in each of the markets. For example, the results shown in the first graph reflect the results of the annual on-peak allocation combined with the monthly on-peak allocation for March.

[2] Referred to as "Original" on the graphics.
[3] Please note that participant names have been replaced by numbers to maintain confidentiality.

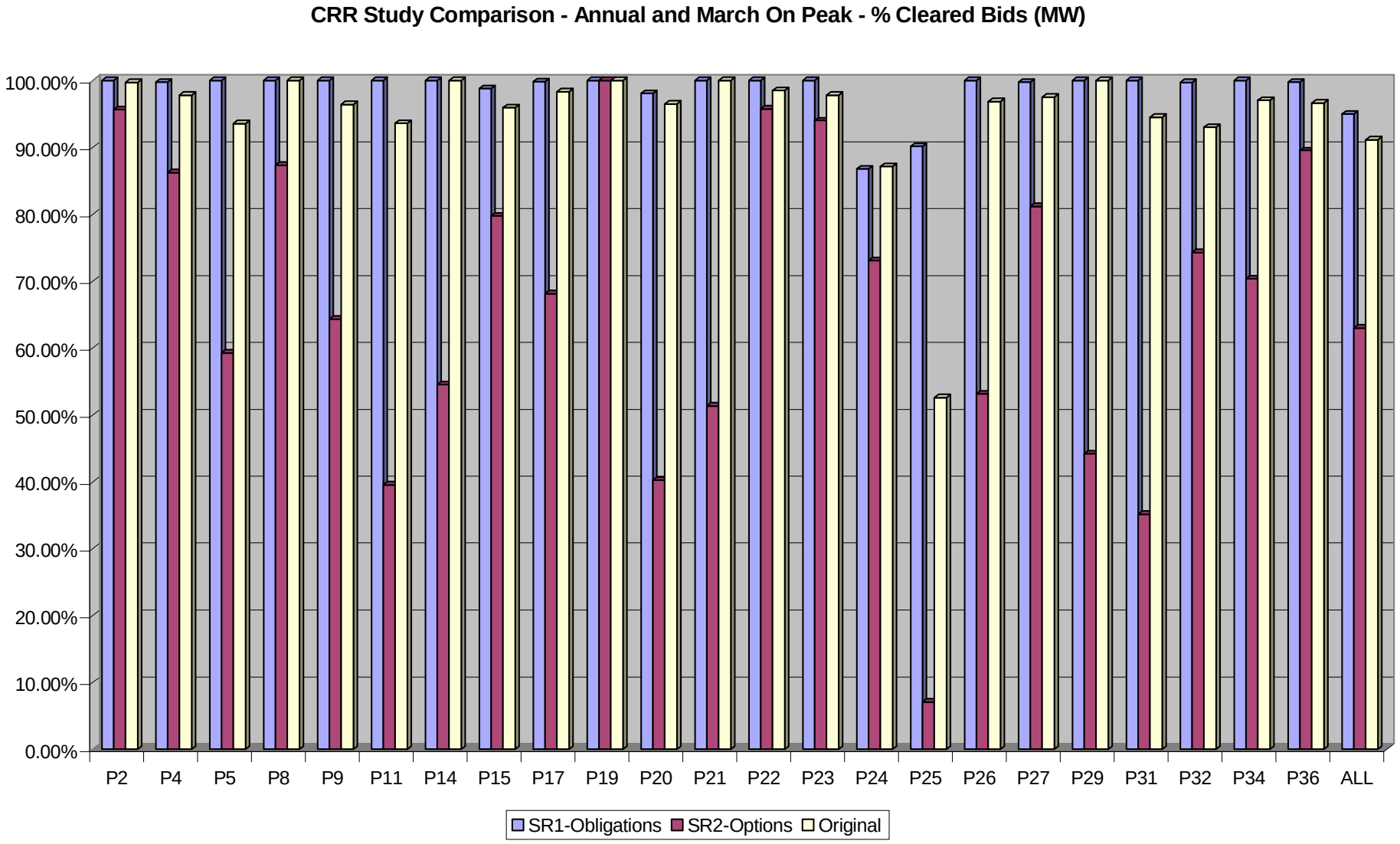
5 Observations

The following observations can be made about the two market runs from the graphics.

- A comparison of SR1 and SR2 is reasonable since they are both based on the same set of data. But, the Original study reflects a different data set making a comparison without qualification difficult.
- The total quantity of cleared CRR obligations ranges from about 30 to 40 percent higher than the quantity of cleared CRR options.
- When viewed from a total market perspective, the comparison of the SR1 and SR2 results show an average of around 96% clearing in SR1-Obligations versus approximately 63% clearing in SR2-Options.

6 Conclusion

The Sensitivity Analysis has provided additional information to Market Participants and the ISO as to the effects of treating CRR requests as obligations, when performing the simultaneous feasibility test, as compared to running a SFT with all CRR options. When comparing the results of Sensitivity Run 1 (all Obligations) with Sensitivity Run 2 (all Options), the quantity of CRR obligations that cleared was greater than or equal to the quantity of CRR options that cleared for each CRR participant.


CRR Study Comparison - Annual and March On Peak - % Cleared Bids (MW)
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SR1-Obligations
SR2-Options
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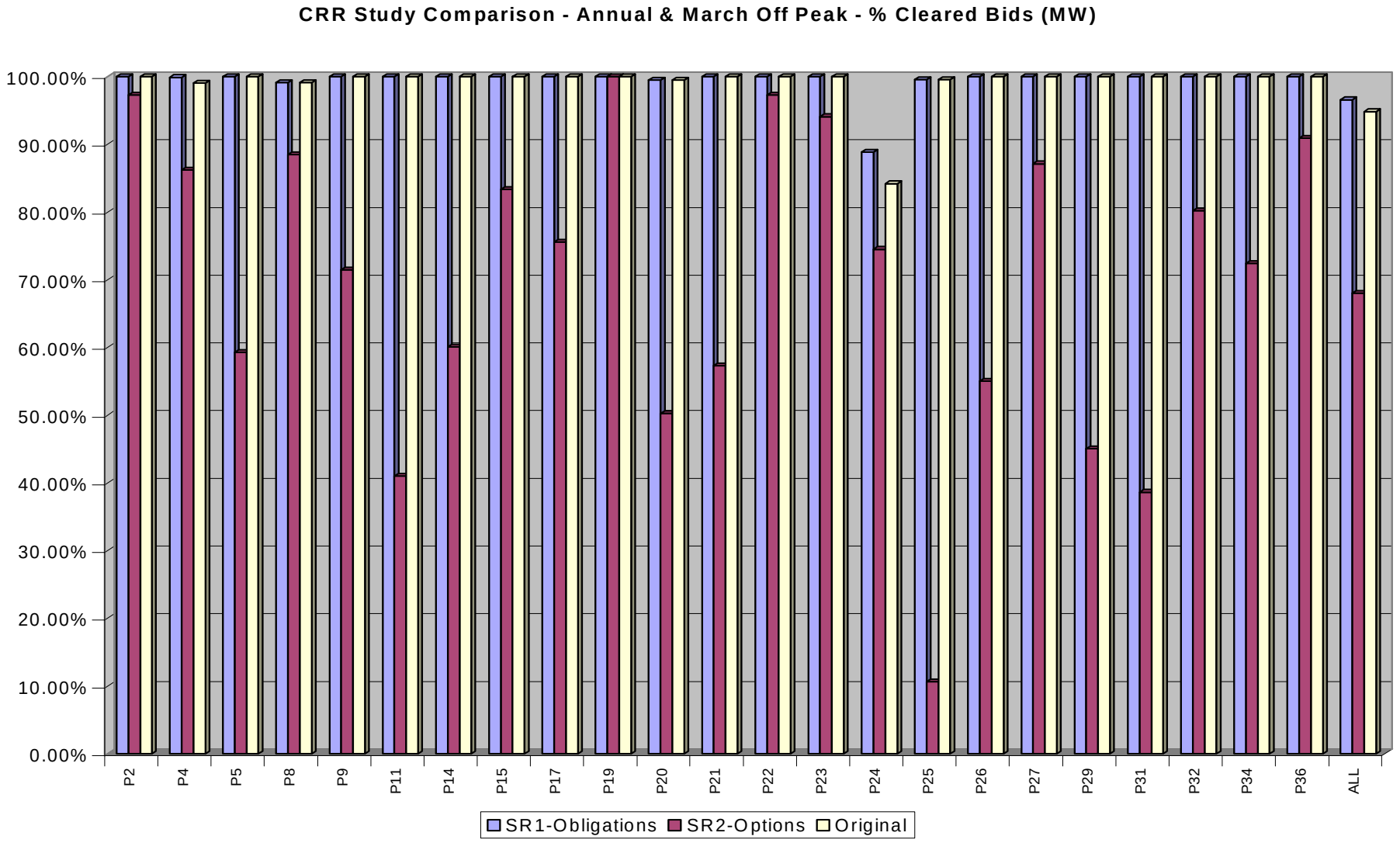
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SR1-Obligations
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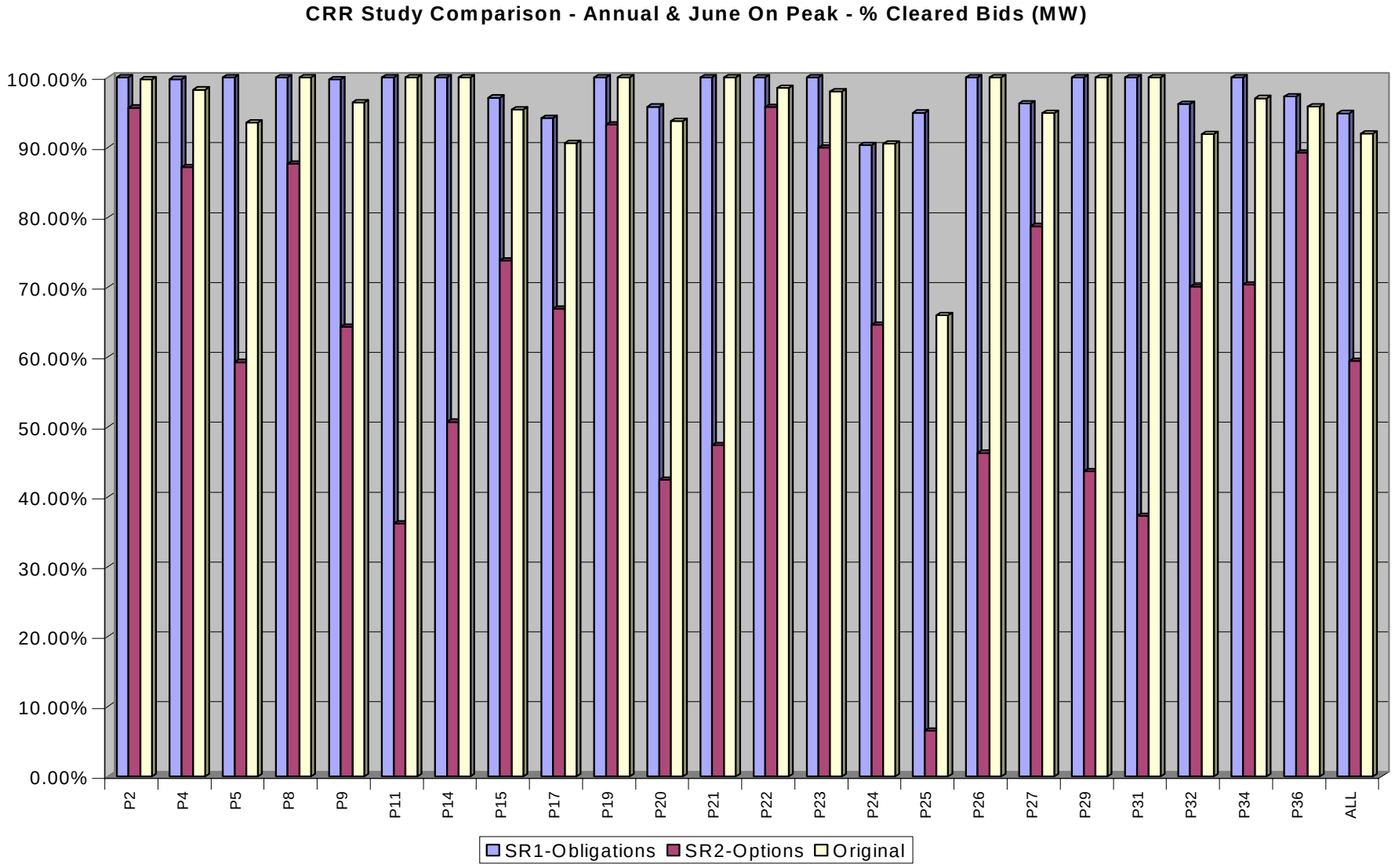
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SR1-Obligations
SR2-Options
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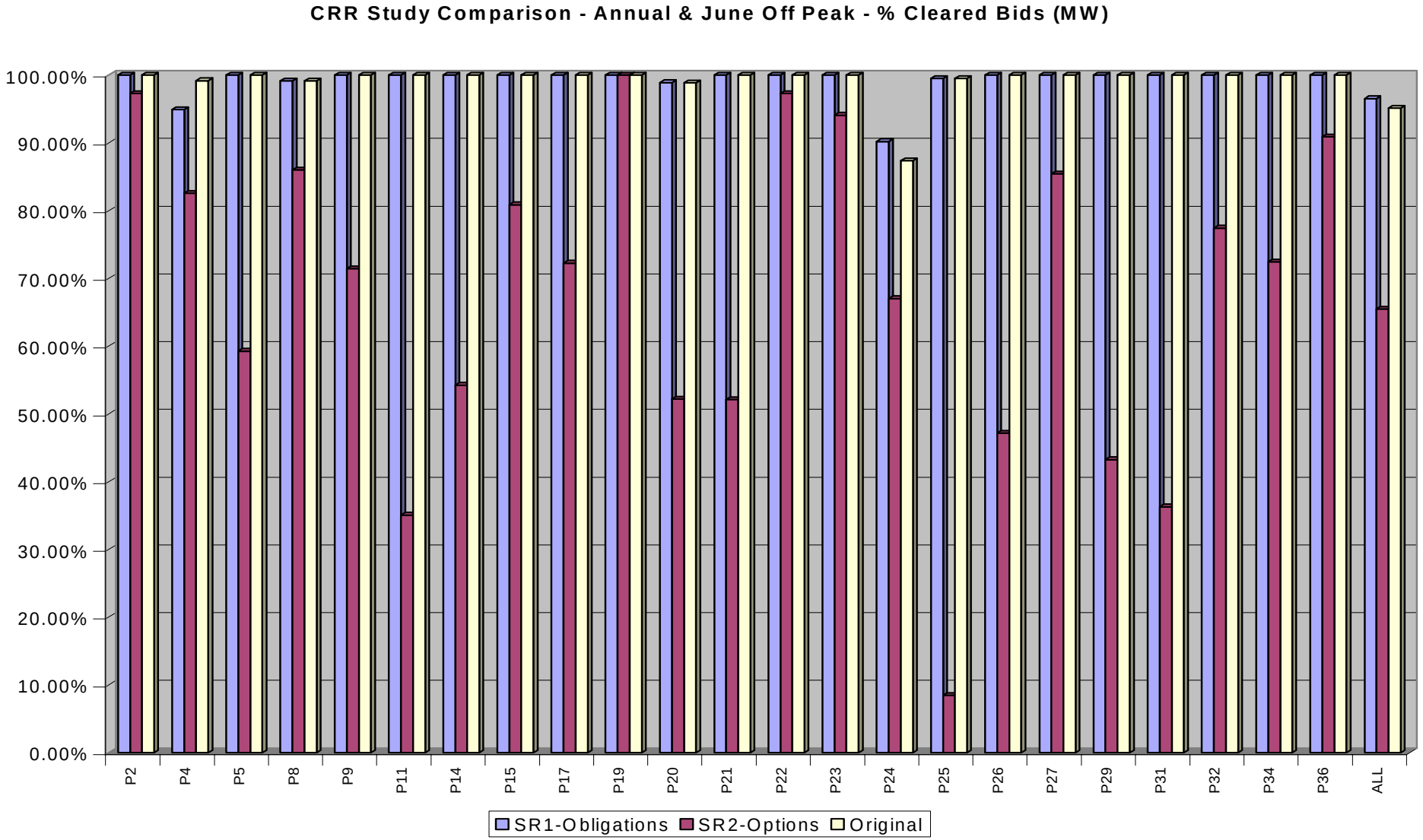
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SR2-Options
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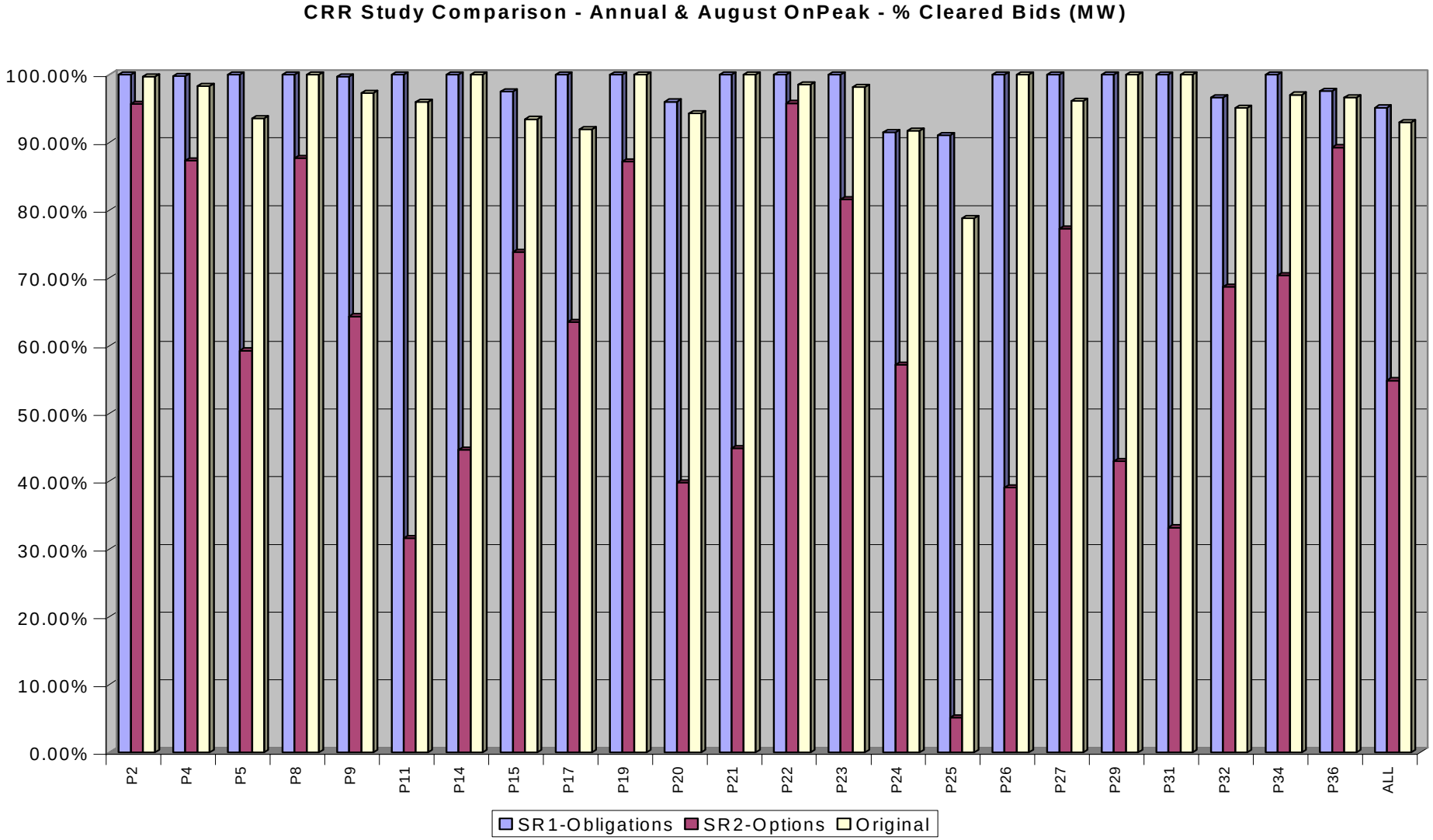
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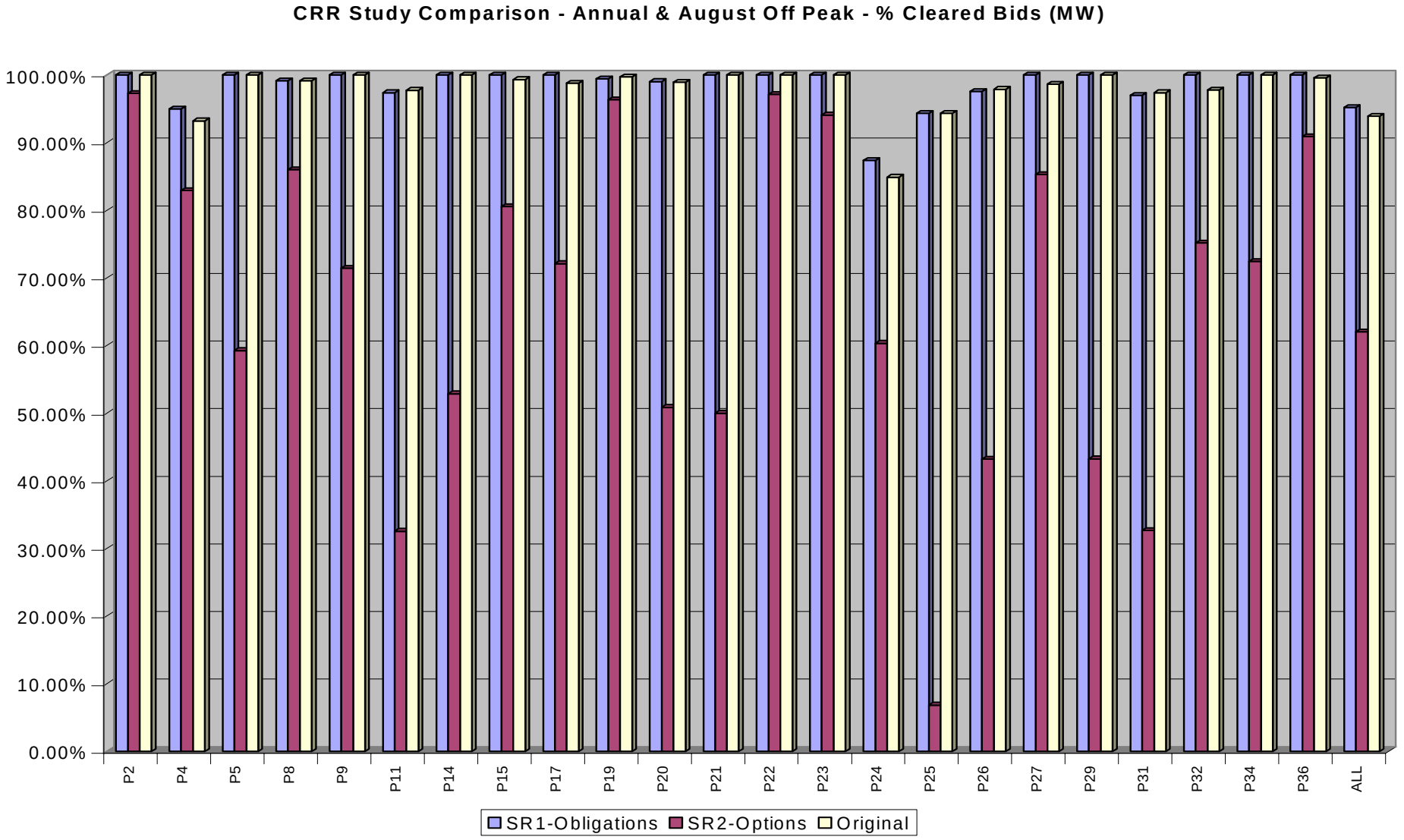
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SR1-Obligations
SR2-Options
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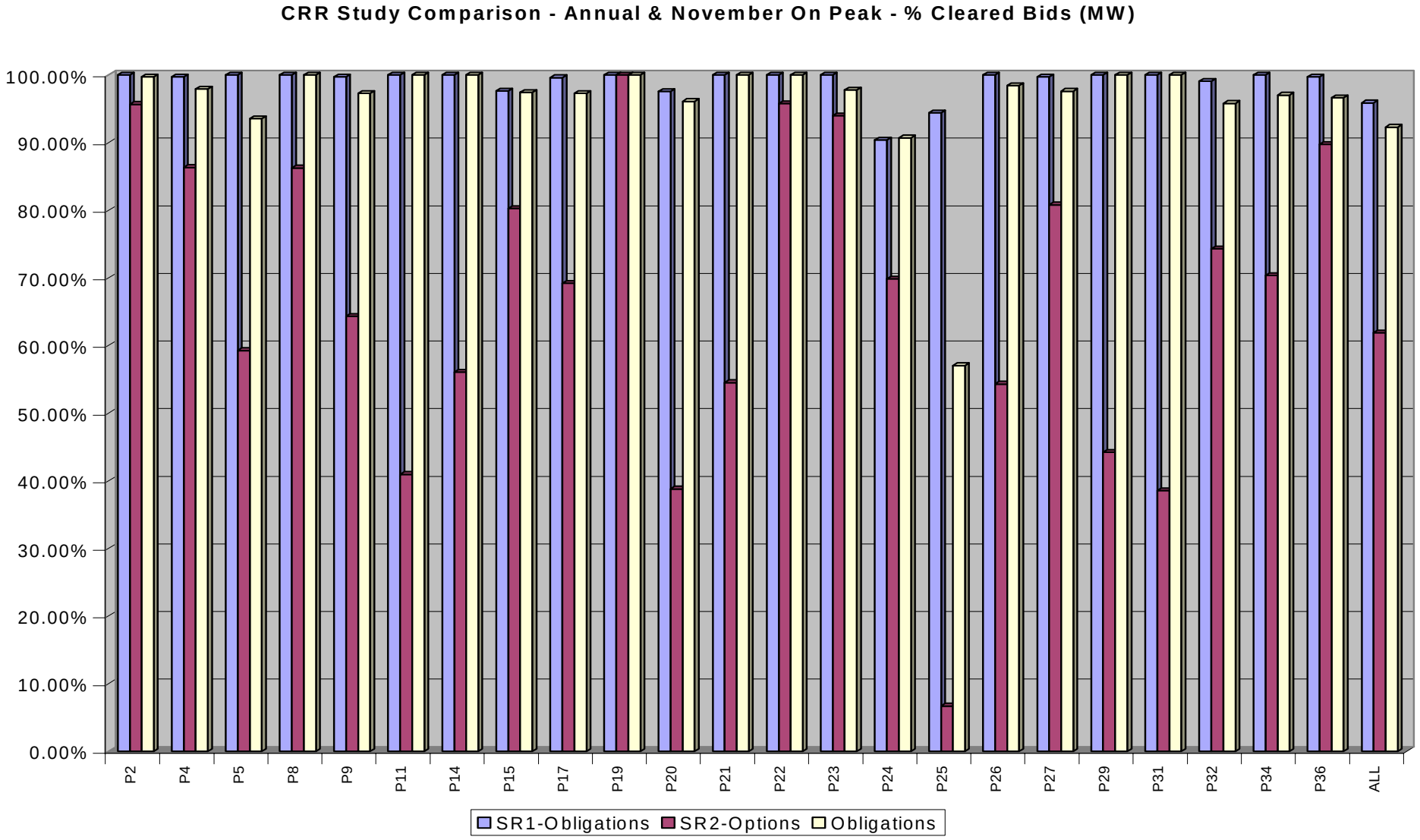
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SR2-Options
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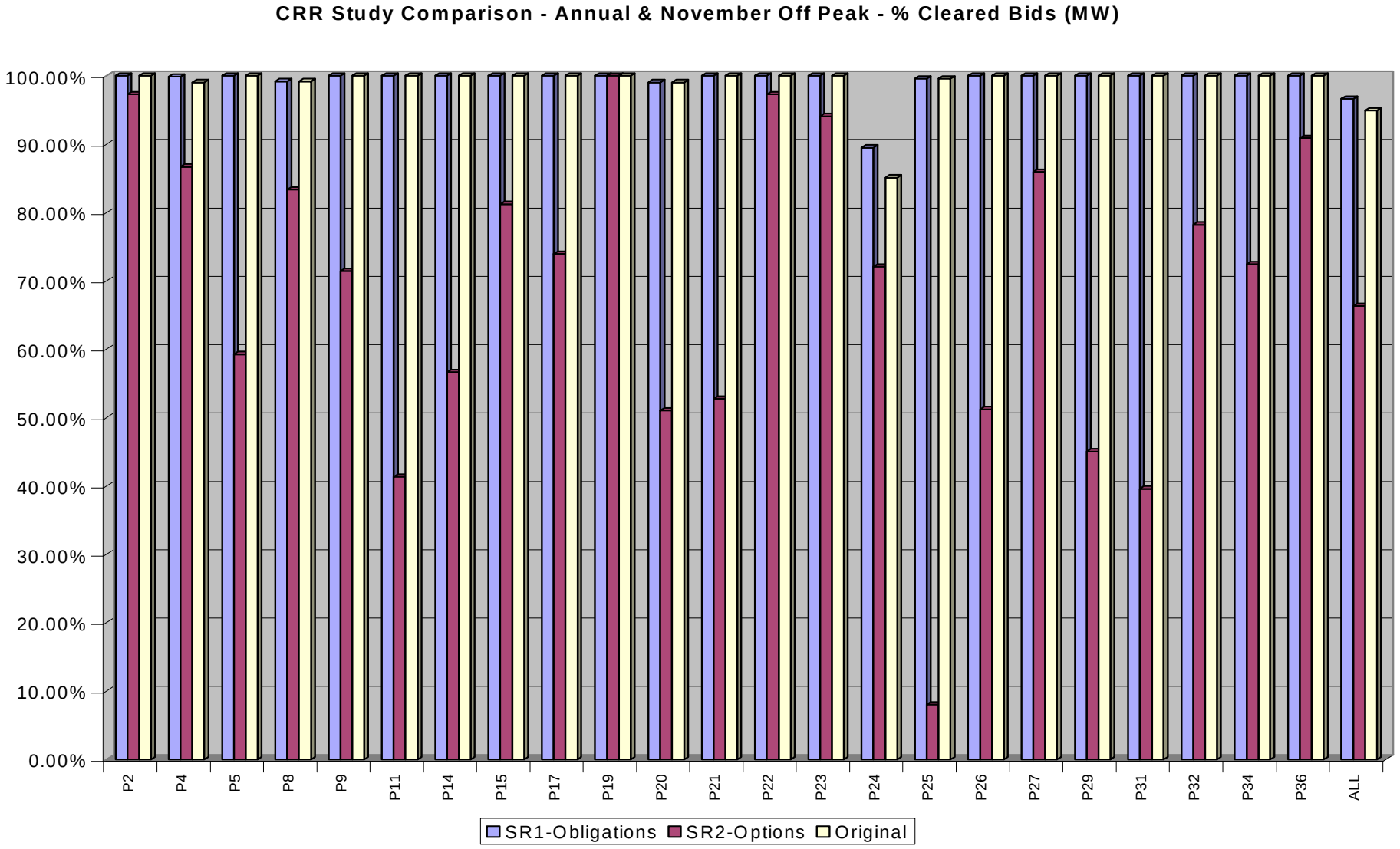
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SR1-Obligations
SR2-Options
Original

7 Appendix

Listed in the tables below are the binding constraints encountered in each of the two sensitivity analysis market runs. This table is separated by market run, constraints hit during that market run, and whether the constraint was hit during the on-peak or off-peak process. Note that if the first set of LHS and RHS columns are filled with numbers, then that line had constraints on-peak for that particular market. Similarly, if the second set of LHS and RHS columns are filled with numbers, then that line had constraints off-peak for the particular market.

Binding Constraints for Each Market Run

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR1	1	EAGLEMT3230. 1033 I	45	<=	45	-360.66	45	<=	45	-360.66
SR1	1	IID-SCE _BG OUT	100	<=	100	-212.28	100	<=	100	-212.28
SR1	1	INTK69_N69.0 1045_I	33	<=	33	-348.44	33	<=	33	-348.44
SR1	1	IRON_MTN230. 1038_I	16.5	<=	16.5	-358.63	16.5	<=	16.5	-358.63
SR1	1	J.HINDS 230. 1041_I					45	<=	45	-410.9
SR1	1	J.HINDS 230. 1042_I	45	<=	45	-410.9				
SR1	1	WND_GPT1230. 4378_I					54	<=	54	-333.69
SR1	2	ARCO_SC 230. 375 Z	100	<=	100	-1	100	<=	100	-1
SR1	2	BAF_COG113.0 3777 I	45	<=	45	-1				
SR1	2	BAF_COG113.0 3777_I					45	<=	45	-1
SR1	2	BDLARKSP69.0 36 Z	60	<=	60	-0.98				
SR1	2	BLM_EAST230. 856_Z	24	<=	24	-2.87	24	<=	24	-2.87
SR1	2	CAL_GEN 115. 939_Z	35.4	<=	35.4	-1.94	35.4	<=	35.4	-1.94
SR1	2	CHINO__166.0 400 Z	49.5	<=	49.5	-0.99				
SR1	2	CHINO__166.0 400_Z					49.5	<=	49.5	-0.99
SR1	2	CHINO__166.0 401 Z	40.7	<=	40.7	-1				
SR1	2	CHINO__166.0 401_Z					40.7	<=	40.7	-1
SR1	2	DIVISION69.0 71 Z	53	<=	53	-1	53	<=	53	-1
SR1	2	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	2	GWF-PWR. 9.0 3239 I	26.9	<=	26.9	-1				
SR1	2	INYO___1115. 885_I	56	<=	56	-2.49	56	<=	56	-2.49
SR1	2	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	2	MAGUNDE3230. 526_Z	643	<=	643	-1	643	<=	643	-1
SR1	2	MC_GEN_2115. 894_Z	118.8	<=	118.8	-0.67	118.8	<=	118.8	-0.67
SR1	2	MIRIID 230. 12_I	392.8	<=	392.8	-1.29	392.8	<=	392.8	-1.29
SR1	2	MOGEN 115. 899 Z	62.5	<=	62.5	-0.91				
SR1	2	NAVY_II 115. 902_Z	30	<=	30	-2.78	30	<=	30	-2.78
SR1	2	S.CLARA166.0 603 Z	45.9	<=	45.9	-1				
SR1	2	S.ONOFRE230. 615_Z	1230	<=	1230	-0.99	1230	<=	1230	-0.99
SR1	2	S.ONOFRE230. 616_Z	1230	<=	1230	-0.99	1230	<=	1230	-0.99
SR1	2	SANTAFE113.0 1656 I	45	<=	45	-1				
SR1	2	SANTAFE113.0 1656_I					45	<=	45	-1

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR1	2	VESTAL_166.0 649 Z	61.6	<=	61.6	-1.02				
SR1	2	VESTAL_166.0 649_Z					61.6	<=	61.6	-1.02
SR1	2	WALNUT_166.0 665 Z	55	<=	55	-1				
SR1	2	WALNUT_166.0 665_Z					55	<=	55	-1
SR1	3	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	3	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	4	DELTAPMP230. 4344_Z	373.3	<=	373.3	-1382.42				
SR1	4	DOW_CHEM13.0 2511_I	37.3	<=	37.3	-47.89	37.3	<=	37.3	-100
SR1	4	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	4	EASTWOO2230. 711_Z	250	<=	250	-299.74				
SR1	4	FRBSTNTP115. 1700 Z	32	<=	32	-68.12				
SR1	4	FRBSTNTP115. 1700_Z					32	<=	32	-100
SR1	4	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	4	MOHAVE 500. 554 Z	825	<=	825	-100.15	825	<=	825	-100
SR1	4	RIOBRAVO 9.0 3439 I	16	<=	16	-15.17				
SR1	4	SANTAFE113.0 1656 I	45	<=	45	-145.94				
SR1	4	SANTAFE113.0 1656_I					45	<=	45	-100
SR1	4	TEXSUN2G18.0 3467 I	190	<=	190	-138.02				
SR1	5	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	5	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	6	BAF_COG113.0 3777 I	45	<=	45	-113.57				
SR1	6	BAF_COG113.0 3777_I					45	<=	45	-100.83
SR1	6	BALCH__1115. 3096_Z	33	<=	33	-3.98	33	<=	33	-99.28
SR1	6	BDLARKSP69.0 36 Z	60	<=	60	-103.9				
SR1	6	DELTAPMP230. 4344_Z	373.3	<=	373.3	-1055.73				
SR1	6	DG_PAN1 13.0 2974 I	60	<=	60	-3.76				
SR1	6	DONNELL2115. 2852_Z					67.5	<=	67.5	-52.3
SR1	6	DRUM_5 13.0 2209_I	49	<=	49	-8.67				
SR1	6	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	6	EASTWOO2230. 711_Z	250	<=	250	-299.73				
SR1	6	ESRP_MWD115. 1049_I					20	<=	20	-22521.84

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR1	6	EXCHEQU2115. 2924_I					67.9	<=	67.9	-127.81
SR1	6	FRBSTNTP115. 1700 Z	32	<=	32	-64.92				
SR1	6	FRBSTNTP115. 1700_Z					32	<=	32	-99.29
SR1	6	GWF-PWR. 9.0 3239 I	26.9	<=	26.9	-101.6				
SR1	6	GWF_GT1 13.0 3189 I	58	<=	58	-58.05				
SR1	6	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	6	KNGSRVR2115. 3097_Z	49	<=	49	-4.02				
SR1	6	LLAGAS 115. 3624 Z	252	<=	252	-98.32				
SR1	6	MOHAVE 500. 554 Z	825	<=	825	-100.16	825	<=	825	0
SR1	6	RIOBRAVO 9.0 3439 I	16	<=	16	-12.18				
SR1	6	RIOBRAVO 9.0 3439_I					16	<=	16	-99.78
SR1	6	SANTAFE113.0 1656 I	45	<=	45	-161.01				
SR1	6	SANTAFE113.0 1656_I					45	<=	45	-100.09
SR1	6	SEAWESTF 9.0 3531_I					20	<=	20	-99.98
SR1	6	STANISL2115. 2643_I	56	<=	56	-60.78	56	<=	56	-257.05
SR1	6	TEXSUN2G18.0 3467 I	190	<=	190	-137.97				
SR1	6	TRCY_PMP230. 4108_I	333.8	<=	333.8	-338.85				
SR1	6	ULTR.PWR 9.0 3235 I	20.7	<=	20.7	-9.65				
SR1	6	ULTR.PWR 9.0 3235_I					20.7	<=	20.7	-99.68
SR1	6	WINTEC4 115. 987 Z	60	<=	60	-60.12				
SR1	6	WINTEC4 115. 987_Z					60	<=	60	-99.92
SR1	6	WODLF_TP115. 1697 Z	58	<=	58	-11.88				
SR1	6	WODLF_TP115. 1697_Z					58	<=	58	-99.17
SR1	8	BAF_COG113.0 3777 I	45	<=	45	-113.6				
SR1	8	BAF_COG113.0 3777_I					45	<=	45	-100
SR1	8	BALCH__1115. 3096_Z	33	<=	33	-8.85	33	<=	33	-100
SR1	8	BDLARKSP69.0 36 Z	60	<=	60	-99.24				
SR1	8	DELTAPMP230. 4344_Z	373.3	<=	373.3	-994.17				
SR1	8	DG_PAN1 13.0 2974 I	60	<=	60	-12.68				
SR1	8	DRUM_5 13.0 2209_I	49	<=	49	-13.68				
SR1	8	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	8	EASTWOO2230. 711_Z	250	<=	250	-299.62				

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR1	8	ESRP_MWD115. 1049_I					20	<=	20	-22522.22
SR1	8	FRBSTNTP115. 1700 Z	32	<=	32	-66.76				
SR1	8	GWF-PWR. 9.0 3239 I	26.9	<=	26.9	-107.05				
SR1	8	GWF_GT1 13.0 3189 I	58	<=	58	-66.68				
SR1	8	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	8	KNGSRVR2115. 3097_Z	49	<=	49	-8.74	49	<=	49	-100
SR1	8	LLAGAS 115. 3624 Z	252	<=	252	-98.4				
SR1	8	MOHAVE 500. 554 Z	825	<=	825	-100.23				
SR1	8	SANTAFE113.0 1656 I	45	<=	45	-158.77				
SR1	8	SANTAFE113.0 1656_I					45	<=	45	-100
SR1	8	SEAWESTF 9.0 3531_I					20	<=	20	-100
SR1	8	STANISL2115. 2643_I	56	<=	56	-21.19				
SR1	8	TEMBLOR4115. 3344_Z	74.9	<=	74.9	-1791.59				
SR1	8	TEXSUN2G18.0 3467 I	190	<=	190	-131.69	190	<=	190	-138.89
SR1	8	TRCY_PMP230. 4109_I	333.8	<=	333.8	-325.58				
SR1	8	ULTR.PWR 9.0 3235 I	20.7	<=	20.7	-8.61				
SR1	8	ULTR.PWR 9.0 3235_I					20.7	<=	20.7	-100
SR1	8	WINTEC4 115. 987 Z	60	<=	60	-58.64				
SR1	8	WINTEC4 115. 987_Z					60	<=	60	-100
SR1	8	WODLF_TP115. 1697 Z	58	<=	58	-16.64				
SR1	7	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	7	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	9	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	9	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	10	BAF_COG113.0 3777 I	45	<=	45	-112.01				
SR1	10	BAF_COG113.0 3777_I					45	<=	45	-100
SR1	10	DELTAPMP230. 4344_Z	373.3	<=	373.3	-1395.63				
SR1	10	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR1	10	FRBSTNTP115. 1700 Z	32	<=	32	-67.81				
SR1	10	FRBSTNTP115. 1700_Z					32	<=	32	-100
SR1	10	GWF-PWR. 9.0 3239 I	26.9	<=	26.9	-64.74				
SR1	10	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR1	10	MOHAVE 500. 554 Z	825	<=	825	-100.16	825	<=	825	-100
SR1	10	SANTAFE113.0 1656 I	45	<=	45	-148.27				
SR1	10	SANTAFE113.0 1656_I					45	<=	45	-100
SR1	10	TEXSUN2G18.0 3467 I	190	<=	190	-138.01				

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint-SR2	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR2	1	EAGLEMT3230. 1033 I	45	<=	45	-357.14				
SR2	1	EAGLEMT3230. 1033_I					45	<=	45	-357.14
SR2	1	IID-SCE _BG OUT	100	<=	100	-212.28	100	<=	100	-212.28
SR2	1	INTK69_N69.0 1045 I	33	<=	33	-348.44				
SR2	1	INTK69_N69.0 1045_I					33	<=	33	-348.44
SR2	1	IRON_MTN230. 1038_I	16.5	<=	16.5	-357.14	16.5	<=	16.5	-357.14
SR2	1	J.HINDS 230. 1041 I	45	<=	45	-400				
SR2	1	J.HINDS 230. 1041_I					45	<=	45	-400
SR2	1	WND_GPT1230. 4378_I					54	<=	54	-333.33
SR2	2	ARCO_SC 230. 375 Z	100	<=	100	-0.8				
SR2	2	BELLOTA2230. 1288_I					269	<=	269	-7.42
SR2	2	BLM_EAST230. 856 Z	24	<=	24	-2.66				
SR2	2	BLM_EAST230. 856_Z					24	<=	24	-2.65
SR2	2	CAL_GEN 115. 939 Z	35.4	<=	35.4	-1.75				
SR2	2	CAL_GEN 115. 939_Z					35.4	<=	35.4	-1.75
SR2	2	COTTLE_B230. 4212_I	269	<=	269	-11.26	269	<=	269	-2.15
SR2	2	DIVISION69.0 71 Z	53	<=	53	-0.76				
SR2	2	DIVISION69.0 71_Z					53	<=	53	-0.76
SR2	2	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	2	HOLGATE 115. 884_I	82.7	<=	82.7	-0.84	82.7	<=	82.7	-0.84
SR2	2	HUMBOLDT _BG OUT	70	<=	70	-0.79				
SR2	2	IID-SCE _BG OUT	100.01	<=	100	-1000000	100	<=	100	-49185.13
SR2	2	IID-SDGE _BG OUT	225	<=	225	-50.95	225	<=	225	-50.89
SR2	2	INYO___1115. 885_I	56	<=	56	-2.46	56	<=	56	-2.46
SR2	2	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	2	MIRIID 230. 12_I	392.8	<=	392.8	-1.29	392.8	<=	392.8	-1.29
SR2	2	NAVY_II 115. 902_Z					30	<=	30	-0.34
SR2	2	SILVERPK _BG IN	17	<=	17	-0.15	17	<=	17	-0.17
SR2	2	TABLE_MT500. 1123_Z	1120	<=	1120	-1.13				
SR2	3	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	3	IID-SCE _BG OUT	100.01	<=	100	-1000000	100	<=	100	-49257.72

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint-SR2	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR2	3	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	4	BELLOTA2230. 1288_I					269	<=	269	-1118.95
SR2	4	COTTLE_B230. 4212_I	269	<=	269	-1308.66				
SR2	4	COTTLE_B230. 4212_Z	269	<=	269	-93.26	269	<=	269	-226.06
SR2	4	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	4	HUMBOLDT _BG OUT	70	<=	70	-93.02				
SR2	4	IID-SCE _BG OUT	100.05	<=	100	-1000000	100.03	<=	100	-1000000
SR2	4	IID-SDGE _BG OUT					225	<=	225	-1750.86
SR2	4	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	4	MOHAVE 500. 554 Z	825	<=	825	-99.2				
SR2	4	MOHAVE 500. 554_Z					825	<=	825	-96.55
SR2	4	TABLE_MT500. 1123_Z	1120	<=	1120	-118.16				
SR2	4	TBL_MT_D230. 1200_Z					329	<=	329	-135.4
SR2	5	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	5	IID-SCE _BG OUT	100.01	<=	100	-1000000	100	<=	100	-49257.72
SR2	5	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	6	BELLOTA2230. 1288_I					269	<=	269	-901.06
SR2	6	COTTLE_B230. 4212_I	269	<=	269	-1231.98	269	<=	269	-208.81
SR2	6	COTTLE_B230. 4212_Z	269	<=	269	-731.5	269	<=	269	-727.51
SR2	6	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	6	ESRP_MWD115. 1048_I					20	<=	20	-19473.12
SR2	6	HUMBOLDT _BG OUT	70	<=	70	-93.25				
SR2	6	IID-SCE _BG OUT	100.06	<=	100	-1000000	100.04	<=	100	-1000000
SR2	6	IID-SDGE _BG OUT	225	<=	225	-3020.97	225	<=	225	-2738.8
SR2	6	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	6	MOHAVE 500. 554 Z	825	<=	825	-94.56				
SR2	6	MOHAVE 500. 554_Z					825	<=	825	-8.48
SR2	6	PLACER_2115. 2083_I					64.7	<=	64.7	-171.52
SR2	6	TABLE_MT500. 1123_Z	1120	<=	1120	-322.54				
SR2	6	TBL_MT_D230. 1200_Z					329	<=	329	-133.36
SR2	7	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	7	IID-SCE _BG OUT	100.01	<=	100	-1000000	100	<=	100	-49257.72

			On-peak Binding Constraints				Off-peak Binding Constraints			
	Market	Constraint-SR2	Left Hand Side	Operation	Limit	Marginal Value	Left Hand Side	Operation	Limit	Marginal Value
SR2	7	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	8	BELLOTA2230. 1288_I					269	<=	269	-1347
SR2	8	COTTLE_B230. 4212_I	269	<=	269	-1050.48	269	<=	269	-217.28
SR2	8	COTTLE_B230. 4212_Z	269	<=	269	-731.46	269	<=	269	-1402.24
SR2	8	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	8	ESRP_MWD115. 1050_I					20	<=	20	-19481
SR2	8	HUMBOLDT _BG OUT	70	<=	70	-93.69				
SR2	8	IID-SCE _BG OUT	100.05	<=	100	-1000000	100.04	<=	100	-1000000
SR2	8	IID-SDGE _BG OUT	225	<=	225	-20380.05	225	<=	225	-2730.73
SR2	8	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	8	KIFER__2115. 3878_Z	140	<=	140	-130.67				
SR2	8	MOHAVE 500. 554 Z	825	<=	825	-67.52				
SR2	8	MOHAVE 500. 554_Z					825	<=	825	-8.23
SR2	8	NEWARK_E230. 1350_I	734	<=	734	-117.68				
SR2	8	SANTAFE113.0 1656_I					45	<=	45	-27.33
SR2	8	TABLE_MT500. 1123_Z	1120	<=	1120	-923.78				
SR2	8	TBL_MT_D230. 1200_Z					329	<=	329	-133.82
SR2	9	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	9	IID-SCE _BG OUT	100.01	<=	100	-1000000	100	<=	100	-49257.72
SR2	9	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	10	BELLOTA2230. 1288_I					269	<=	269	-1118.95
SR2	10	COTTLE_B230. 4212_I	269	<=	269	-1303.23				
SR2	10	COTTLE_B230. 4212_Z	269	<=	269	-67.77	269	<=	269	-489.43
SR2	10	EAGLEMT3230. 1033_I	45.02	<=	45	-300000	45.02	<=	45	-300000
SR2	10	HUMBOLDT _BG OUT	70	<=	70	-91.48				
SR2	10	IID-SCE _BG OUT	100.05	<=	100	-1000000	100.03	<=	100	-1000000
SR2	10	IID-SDGE _BG OUT	225	<=	225	-2746.11	225	<=	225	-1750.86
SR2	10	IRON_MTN230. 1038_I	16.52	<=	16.5	-300000	16.52	<=	16.5	-300000
SR2	10	MOHAVE 500. 554 Z	825	<=	825	-94.95				
SR2	10	MOHAVE 500. 554_Z					825	<=	825	-96.55
SR2	10	SANTAFE113.0 1656_I					45	<=	45	-20.75
SR2	10	TABLE_MT500. 1123_Z	1120	<=	1120	-122.94				
SR2	10	TBL_MT_D230. 1200_Z					329	<=	329	-135.4