



California ISO  
Your Link to Power

California Independent  
System Operator Corporation

California ISO

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2006 Summer Loads and Resources  
Operations Assessment  
April 10, 2006

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## I. Executive Summary

This updated 2006 Summer Operations Loads and Resource Assessment provides estimates of resource availability, peak demand levels and reserve capacity during anticipated 2006 peak load conditions for the ISO control area. These forecasts are intended to represent a reasonable range of probable conditions to help operating personnel plan for a range of possible conditions. This report uses and builds off of the data and charts provided in the 2005 Summer Operations Assessment. This report includes operating forecasts of 2006 peak demand levels for both a “most likely” system condition and describes a few typical scenarios the ISO may need to respond to under “adverse” system condition. A “most likely” system condition includes expected “1-in-2” temperatures or average temperatures, all major lines in service, “most likely” economic conditions, above average hydro conditions, average outage rates for generation, known generation retirements (Hunters Point and Mohave units) and “most likely” import conditions. An “adverse” condition forecast assumes a probable change in system conditions that would either change supply and/or demand. Adverse events might include “1-in-10” high temperatures or an increase in generation outages or transmission outages that result in limiting transmission import capacity, or reduced import market availability. “Adverse” events represented in this report change supply and/or demand in the range of 2000MW to 5660MW. This range is based on an assessment of historical conditions experienced during summer peak months. The assessment also provides a 2006 summer view of “most likely” conditions in SP26 (South of Path 26) sub-region. In developing the 2006 “most likely” assessment, adjustments to the 2005 actual peak conditions were made to account for expected generation additions and retirements, forecasted demand changes, transmission upgrades, and changes to the ISO control area boundaries.

The ISO forecasts provided in this document are based on actual historical available control area generation capacity and an estimate of import levels. Import forecasts do not reflect contractual arrangements of load serving entities and suppliers within the ISO control area. Import assumptions are based on historical levels during times of peak demand. The system has the capability to import more capacity if the market can provide it during times of peak. The “most likely” demand forecast assumes a 2006 peak demand 3.8% above the ISO 2005 demand actual. 2005 actual temperatures were below average during the time of the peak. It should be noted that demand forecasting tools are considered to have a forecasting tolerance of  $\pm 2\%$ .

***In developing load and resource forecasts, the ISO relies heavily on historical information including actual generation levels, import levels, outage rates, and transmission loading conditions during peak load periods during the prior year in estimating available supply. The 2005 Summer Operations Assessment should be used as a reference to support this report.***

Table 1 below summarizes the ISO’s “most likely” supply and demand forecasts for the ISO control area for expected summer 2006 peak load conditions.

**Table 1 – 2006 ISO Supply and Demand Forecast**

<b><u>“Most Likely” Conditions</u></b>	
• Control Area Generation Capacity <i>(includes 4000MW forced and planned outage rate)</i>	42,600MW
• Control Area Imports	9,000MW
• Total Control Area Supply	51,600MW
• Most Likely Control Area Demand	46,063MW
• Operating Reserve Requirement	2,856MW
• Total Reserve Capacity	5,537MW
• Surplus Reserve	2,681MW
• Operating Reserve Margin	12 %
• Planning Reserve with DR and Interruptible programs	24.7%
• Planning Reserve w/o DR and Interruptible programs	20.7%

**The ISO prepares for adverse conditions, examples include:**

Changes in the actual available generation, load and imports either up or down will change needed response.

- The high load forecast is 2,660 MW above the “most likely” forecast. The ISO will have adequate reserves on a control area basis to handle this increased demand.
- Under “most likely” control area demand conditions, the ISO experiences a major loss of resources in the range of 2,000MW. The ISO will have adequate reserves on a control area basis to handle this loss of resources.
- Under high load and major change in resources in the range of 3,000MW the CAISO will need to call on all demand response and interruptible programs and will need to declare a Stage 2 Emergency (operating reserves below 5%).

In the control area there are approximately 1,840MW's available in demand response and interruptible programs.

Net control area generation capacity additions will not keep pace with anticipated control area demand growth. However, the ISO is counting on increased import capability and increase import market availability (adjusted to account for MID/TID leaving the ISO control area and SP26 increases) to meet summer demands. The ISO believes resources will be available to meet the “most likely” forecasted 2006 peak demand for the control area. The ISO is forecasting surplus reserves of approximately 2680MW under “most likely” conditions and the availability of demand response and interruptible programs to help mitigate adverse conditions. Should additional imports above the “most likely” forecast be available in the market, this additional supply can also help mitigate adverse conditions.

Over the next year, SP26 demand growth is expected to outpace net SP26 generation capacity additions. However, the ISO is forecasting sufficient supply to meet “most likely” demand in the SP26 sub region. Import capability into the SP26 sub-region has increased as a result of planned transmission system upgrades. Table 2 below summarizes the ISO’s “most likely” supply and demand forecast for the SP26 region for expected summer 2006 peak load conditions.

**Table 2 - 2006 SP26 Supply and Demand Forecast**

**Most Likely Conditions**

• SP26 Generation Capacity	19,976MW
<i>(includes 1500MW forced and planned outage)</i>	
• SP26 Imports	10,100MW
• Total SP26 Supply	30,076MW
• Most Likely SP26 Demand	27,299MW
• Total SP26 Reserve Capacity	2,777MW
• Planning Reserve with DR and Interruptible programs	20.6%
• Planning Reserve w/o DR and Interruptible programs	15.7%

**The CAISO prepares for adverse conditions, examples include:**

Changes in the actual available generation, load and imports either up or down will change needed response.

- The high load forecast is 2,262 MW above the most likely forecast. The CAISO will likely need to call upon demand response and interruptible loads to maintain reserve margins.
- Under normal load and the sudden loss of resources in the range of 2,000MW, the CAISO will likely need to call upon demand response and interruptible loads to maintain reserve margins.
- Under high load and the sudden loss of resources in the range of 2,000MW. The CAISO will need to call upon all demand response and interruptible loads and have the potential need to shed up to approximately 1,000MW of firm load to maintain adequate reserve in the south.

In SP26, there are 1,345MW available in demand response and interruptible programs.

The WECC Minimum Operating Reliability Criteria (MORC) requirement for Operating Reserves for the ISO control area during peak load conditions is approximately 3,000 MW. The difference between the minimum WECC MORC requirement and the total estimated reserve capacity would represent the “surplus” reserve that would be available in the event of adverse system conditions (conditions differing from the “most likely” assumptions detailed in this report).

Actual available generating capacity, maximum imports levels, and demand can vary significantly from day to day as seen in the charts in Appendix B. Under extreme weather conditions, high temperatures statewide for consecutive days (i.e. a 1-in-10 temperature scenario), actual control area demand could be 2,500-3,000 MW above the “most likely” forecast levels. In the event of adverse operating conditions (higher than forecast demand levels, higher forced outages rates for generation, major transmission outages, lower import availability, etc.), the ISO can call on various emergency mitigation measures, as appropriate, including demand relief programs, curtailing interruptible loads, dispatching non-spinning reserves and use available residual unit capacity before implementing firm load curtailments if time allows.

The ISO 2005 Summer Assessment estimate of available demand response and interruptible programs was 1,610 MW. It is estimated that the total available demand response and interruptible programs for summer 2006 will be approximately 1,840 MW.

## II. Review of Summer 2005 Operations

### ***Demand***

Weather conditions during the summer 2005 peak load days were below the expected historical summer peak “most likely” conditions (i.e. “1-in-2” temperature scenario). The ISO 2005 forecasted peak demand levels and actual peak demand levels are listed below.

	<b>2005 Forecast Peak Demand</b>	<b>2005 Actual Peak Demand</b>	<b>2005 Actual Date, Time</b>
ISO Control Area	46,668	45,431	July 20, 15:22
SP26	27,080	26,548	July 21, 14:39
NP26	21,497	21,218	July 14, 16:21

To illustrate that weather conditions were below the forecasted “most likely” “1-in-2” normal summer peak conditions, the following tables compare temperatures at various weather stations on the days that the SP26 and NP26 regions set their respective 2005 summer peak demand levels with 10 year average peak readings and 10 year maximum peak readings.

<b>SP26 Comparison of 10Year Historical Temperatures to Temperatures on July 21, 2005</b>			
<b>City</b>	<b>10 Year Average</b>	<b>10 Year Max</b>	<b>7/21/2005</b>
Los Angeles (Downtown)	<b>98</b>	<b>104</b>	<b>90</b>
Fullerton	<b>101</b>	<b>106</b>	<b>94</b>
Ontario	<b>106</b>	<b>110</b>	<b>102</b>
Palm Springs	<b>118</b>	<b>120</b>	<b>112</b>
Lancaster	<b>109</b>	<b>112</b>	<b>104</b>
Oceanside	<b>94</b>	<b>103</b>	<b>84</b>
San Diego	<b>90</b>	<b>96</b>	<b>82</b>
Ramona	<b>100</b>	<b>107</b>	<b>98</b>
Santee	<b>103</b>	<b>109</b>	<b>97</b>

<b>NP26 Comparison of 10 Year Historical Temperatures to Temperatures on July 14, 2005</b>			
<b>City</b>	<b>10 Year Average</b>	<b>10 Year Max</b>	<b>7/14/2005</b>
San Francisco	<b>89</b>	<b>103</b>	<b>75</b>
Oakland	<b>92</b>	<b>100</b>	<b>76</b>
Concord	<b>104</b>	<b>109</b>	<b>99</b>
Livermoore	<b>104</b>	<b>112</b>	<b>100</b>
San Jose	<b>96</b>	<b>105</b>	<b>88</b>
Santa Rosa	<b>101</b>	<b>108</b>	<b>88</b>
Paso Robles	<b>106</b>	<b>115</b>	<b>105</b>
Redding	<b>112</b>	<b>116</b>	<b>107</b>
Marysville	<b>109</b>	<b>111</b>	<b>105</b>
Merced	<b>107</b>	<b>108</b>	<b>104</b>
Bakersfield	<b>107</b>	<b>110</b>	<b>107</b>

Graphs of actual demand levels for the ISO control area and the SP26 region during peak operating hours for the 2005 summer season are included in Appendix A.

### ***Imports***

The ISO's 2005 forecast control area import level of 9,000 MW was an estimate of anticipated import levels during peak load conditions and was based on historical import levels during peak conditions. It was not an estimate of the maximum import capability of the transmission system. During the 2005 summer season, actual imports levels during peak load hours exceeded 9,000 MW on several days and even exceeded 10,000 MW on a few days. However, control area import levels during the top 10 control area peak load days were below 9,000.

The ISO's 2005 forecast of the maximum import capability into the SP26 region was 9,700 MW. This forecast was an estimate of the maximum import capability into the region, the level at which one of the major transmission paths in the region would be near the path limit. The highest level observed during the 2005 summer season was 9,652 MW on July 13. At the time the Palo Verde-Devers 500-kV line was at its maximum thermal capability. On July 21 when the SP26 region set its summer peak demand, SP26 imports were only 9,023 MW. At the time, the ISO was experiencing low voltages in the Devers area due to high loads and heavy loading on the Palo Verde-Devers line. In addition to local area interruptible load curtailments, the ISO curtailed import schedules on the Palo Verde-Devers line and dispatched reserves within SP26 to mitigate the low voltages.

Graphs of actual import levels for the ISO control area and the SP26 region during peak operating hours are included in Appendix B.

### ***Generation***

The actual amount of available generation capacity within the ISO control area can vary significantly as seen in Appendix C. The variations are primarily due to the magnitude of planned and forced outages, ambient capacity limitations, Qualifying Facility (including wind and solar)

generation availability, hydro generation levels, and environmental constraints. Available generation in 2006, by technology type, is forecasted to be similar to 2005. In 2006, Hydro conditions are expected to be above normal for both the Northwest and California regions. The following table compares conditions on July 21 (SP26 peak load day) to forecast conditions for SP26.

	Forecast *	7/21 @ HE 1500	Delta
<b>Load</b>	27,080	26,394	686
<b>Imports</b>	9,700	9,023	677
<b>Generation</b>	19,168 **	17,371	N/A
<hr/>			
<b>Total Available Generation Capacity</b>	19,168	18,071	1,097
<b>Forced Outages Estimate of Maximum Dependable Capacity</b>	1,600	2,720	(1,120)
	20,768	20,791	(23)

\* Forecast based on the ISO 2005 Summer Operations Assessment for August 2005.

\*\* Operating Reserve is included in Generation Forecast

The ISO 2005 forecast of maximum dependable SP26 generation capacity was 20,768 MW assuming no forced outages. On July 21, the actual available SP26 generation capacity was 18,071 MW with approximately 2,720 MW of forced outages (including ambient de-rates). Adjusting for the difference between actual forced outages and forecast forced outages, the ISO estimated dependable capacity was within 23 MW for July 21.

The monthly average forced outage rate for the ISO control area for June through September 2005 was 2587 MW, including ambient de-rates. The ISO's 2005 forecast for August 2005 forced outages was 2,721 MW. The monthly averages ranged from 2,090 MW in August 2005 to 3,551 MW in July 2005.

Graphs of actual generation levels for the ISO control area and SP26 region during peak operating hours are included in Appendix C. Outage history is provided in Appendix D.

**Transmission**

The magnitude and frequency of real-time intra-zonal congestion conditions, particularly in the SP26 region, is significantly less than the recent past. The reduction in congestion is a result of various transmission system upgrades in the SP26 region including increasing the rating of the South of Lugo path and the addition of the Miguel-Mission #2 230-kV line. Under maximum import conditions, the Palo Verde-Devers 500-kV line was near the thermal capability of the series capacitors. Prior to the 2006 summer season, the series capacitors will be upgraded from a rating of 1900 amps (1,645 MW) to 2,700 amps (2,340 MW) and the series capacitors for the Southwest Power Link (SWPL) will be upgraded from a rating of 1400 amps (1,200 MW) to 2,200 amps (1,900 MW).

***Warnings and Alerts***

In 2005, there were 13 Restricted Maintenance Operation Days, five Transmission Emergencies, two Warnings, seven Power Watch Alerts, one Stage 1 Emergency and two Stage 2 Emergencies declared. The reader should be aware that these forecasts are an estimate of supply and demand sufficiency for the control area under certain specified conditions. Local conditions on the grid and local supply and demand can vary widely from the specified estimates in this document. The charts in the back of this document help the reader understand normal variability.

### III. Summer 2006 Assessment

#### **ISO Control Area**

The following summarizes the ISO’s “most likely” supply and demand forecast for the ISO control area for forecasted summer 2006 peak load conditions.

#### **“Most Likely” Conditions**

- Control Area Generation Capacity 42,600MW  
*(includes 4000MW forced and planned outage rate)*
- Control Area Imports 9,000MW
- Total Control Area Supply 51,600MW
- Most Likely Control Area Demand 46,063MW
- Operating Reserve Requirement 2,856MW
- Total Reserve Capacity 5,537MW
- Surplus Reserve 2,681MW
- Operating Reserve Margin 12 %
- Planning Reserve with DR and Interruptible programs 24.7%
- Planning Reserve w/o DR and Interruptible programs 20.7%

#### **The ISO prepares for adverse conditions, examples include:**

Changes in the actual available generation, load and imports either up or down will change needed response.

- The high load forecast is 2,660 MW above the “most likely” forecast. The ISO will have adequate reserves on a control area basis to handle this increased demand.
- Under “most likely” control area demand conditions, the ISO experiences a major loss of resources in the range of 2,000MW. The ISO will have adequate reserves on a control area basis to handle this loss of resources.
- Under high load and major change in resources in the range of 3,000MW the CAISO will need to call on all demand response and interruptible programs and will need to declare a Stage 2 Emergency (operating reserves below 5%).

In the control area there are approximately 1,840 MW’s available in demand response and interruptible programs.

**SP26 Region**

The following summarizes the ISO's "most likely" supply and demand forecast for the SP26 region for forecasted summer 2006 peak load conditions.

**Most Likely Conditions**

• SP26 Generation Capacity	19,976MW
<i>(includes 1500MW forced and planned outage)</i>	
• SP26 Imports	10,100MW
• Total SP26 Supply	30,076MW
• Most Likely SP26 Demand	27,299MW
• Total SP26 Reserve Capacity	2,777MW
• Planning Reserve with DR and Interruptible programs	20.6%
• Planning Reserve w/o DR and Interruptible programs	15.7%

**The CAISO prepares for adverse conditions, examples include:**

Changes in the actual available generation, load and imports either up or down will change needed response.

- The high load forecast is 2,262 MW above the most likely forecast. The CAISO will likely need to call upon demand response and interruptible loads to maintain reserve margins.
- Under normal load and the sudden loss of resources in the range of 2,000MW, the CAISO will likely need to call upon demand response and interruptible loads to maintain reserve margins.
- Under high load and the sudden loss of resources in the range of 2,000MW. The CAISO will need to call upon demand response and interruptible loads and have the potential need to shed up to approximately 1,000MW of firm load to maintain adequate reserve in the south.

In SP26, there are 1,345MW available in demand response and interruptible programs.

**Generation and Generation Additions and Retirements**

The ISO control area will have an approximate net increase in generation of 370 MW (360 MW non-wind plus an estimated 10 MW wind at time of peak) prior to the Summer 2006 season. SP 26 will have an approximate net increase in thermal generation of 438 MW (435 MW non-wind plus an estimated 3 MW wind at time of peak) in Summer 2006. NP 26 will have an approximate net decrease in thermal generation of 75 MW plus an estimated 7 MW of additional wind at time of peak in Summer 2006. See Appendices E and F for a detailed list of generation additions and retirements. The CSO overall generation forecast for 2006 is built off of 2005 actual generation seen during times of peak and adjusted for additions and retirements, control area footprint changes, and 2006 forecasted generation planned and forced outage rates. The 2006 forecast was also compared to historical forecast and actual data as another means of calibrating 2006 forecasts. The ISO believes this is a reasonable approach because the system was pushed on several days in 2005 as evidenced by the 13 Restricted Maintenance Operation days, five Transmission Emergencies, two Warnings, seven Power Watch Alerts, one Stage 1 Emergency and two Stage 2 Emergencies declared. See Appendix C.

**Summer 2006 Outlook  
Approximate Generation Additions and Retirements  
July 1, 2005 through July 31, 2006**

	<b>Additions (Excluding Wind)</b>	<b>Retirements</b>	<b>Approximate Net Increase</b>
ISO Control Area	1,895	1,535	360
SP26	1,755	1,320	435
NP26	140	215	(75)

**Generation Outage Rates**

The 2005 forced outage forecast for August 2005 was 2,758 MW for the control area and 1600 MW for the SP26 region. The average forced outage rate for June through September 2005 was 2,587 MW for the control area. For this 2006 assessment, a 2500 MW forced outage rate is assumed for the control area, and a 258 MW reduction from the 2005 forecast level.

The SP26 forecast assumes 1,250 MW of forced outages for the SP26 region, a 350 MW reduction from the 2005 forecast level. The average forced outage rate for 2005 included environmental capacity limitations on the Mohave units. As a result of the Mohave units retiring, the forced outage estimates are slightly below the average 2005 forced outage rate. This assessment assumes an average planned outage rate of 1500MW. See appendix D.

**Demand**

The 2006 demand forecast uses a polynomial regressive model approach that includes the most recent weather, economic, and load trends. For the ISO control area, an adjustment was made to the 2005 actual demand and 2006 forecast peak demand to account for Modesto Irrigation District, Turlock Irrigation District, and the California/Oregon Transmission Project (COTP) no longer being within the ISO Control Area. The following table summarizes the ISO’s “most likely” and adverse non-coincidental demand forecast for the summer 2006 peak load conditions. See also Appendix A for historical demand information.

	<b>2005 Actual Peak Demand</b>	<b>2006 “Most Likely” Forecast Peak Demand</b>	<b>2006 Adverse Forecast Peak Demand</b>
ISO Control Area	44,293	46,063	48,725
SP26	26,548	27,299	29,561
NP26	20,080	20,324	21,461

### **Imports**

The maximum level of control area imports for the purpose of estimating control area reserve margins is difficult to forecast with the information currently available to the ISO. The ISO does not have information to estimate import levels based on contractual commitments. As a result, the estimate for control area imports is based on historical control area import levels during peak load conditions.

The ISO summer 2005 forecasted net import level was 9,000 MW. During the 2005 summer season, actual imports levels during peak load hours exceeded 9,000 MW on several days and exceeded 10,000 MW on two days at the time of the daily peak load. However, control area import levels during the top 10 control area peak load days were below 9,000.

For the 2006 forecast, the ISO 2005 import estimate was adjusted to account for the transfer of the Modesto Irrigation District to the Sacramento Municipal Utility District (SMUD) control area, the Turlock Irrigation District forming a new control area, transfer of the COTP line to the SMUD control area on December 1, 2005 and increases in SP26 import capability. Aside from the adjustments made to account for the change in control area boundaries, the 2006 import forecast was increased by approximately 800 MW above the adjusted 2005 forecast level due to transmission system upgrades in the SP26 region and a forecasted increased availability in the market.

The estimated import level does not represent the maximum import capability of the transmission system into the ISO control area. As noted above, the transmission system is capable of importing in excess of 10,000 MW into the ISO control area, however, the actual amount of capacity the ISO can import during summer peak conditions, when temperatures are high across the western United States, is difficult to estimate.

The ISO's 2005 forecast of the maximum import capability into the SP26 region was 9,700 MW. This forecast was an estimate of the maximum import capability into the region, the level at which one of the major transmission paths in the region would be near the path limit. The highest level observed during the 2005 summer season was 9,652 MW on July 13. At the time, the Palo Verde-Devers 500-kV line was at its maximum thermal capability.

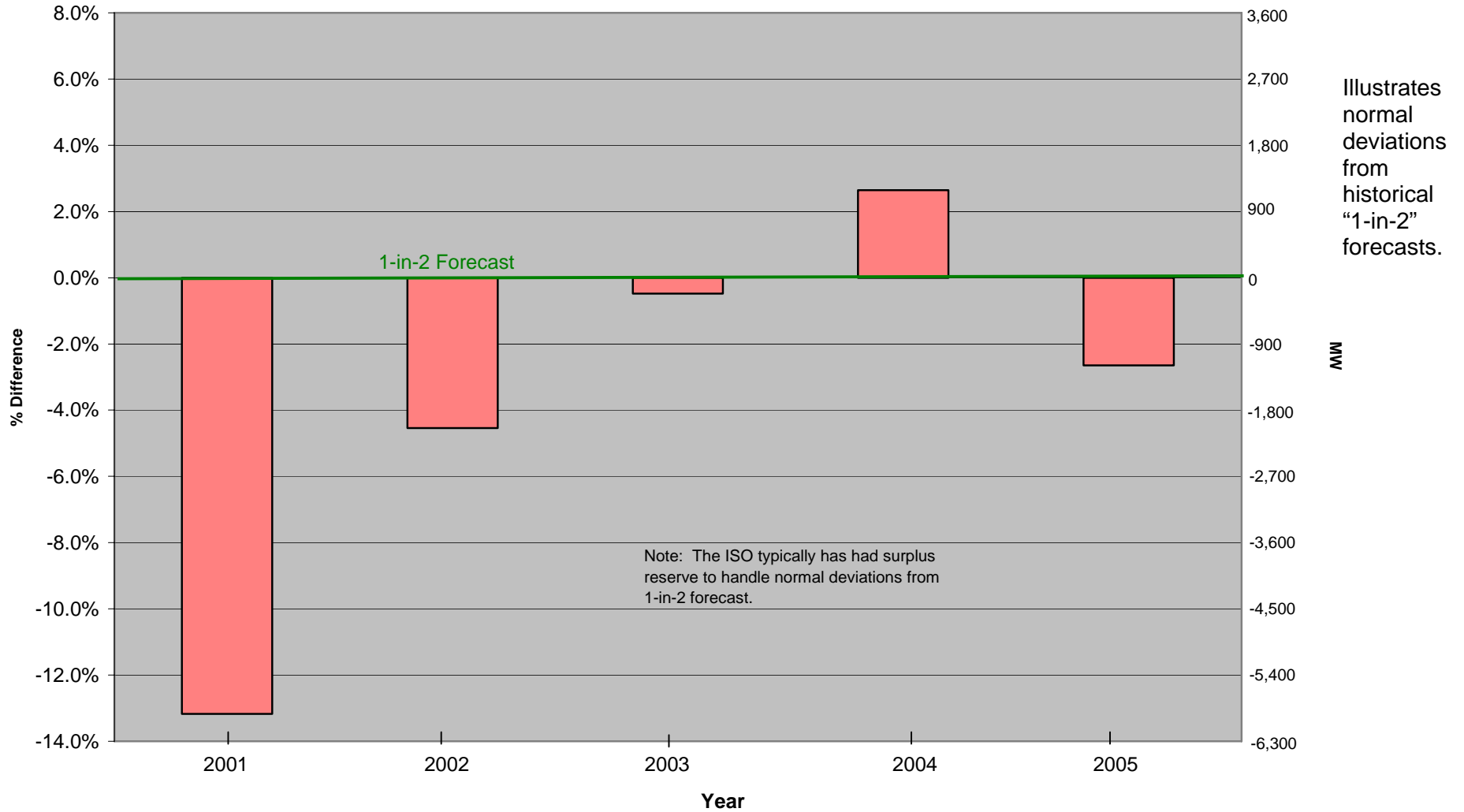
Prior to the 2006 summer season, transmission system upgrades are planned to increase the thermal rating of the Palo Verde-Devers line and the SWPL. As a result of these upgrades, the ISO increased the forecast maximum import capability into the SP26 region by 400 MW, from 9,700 MW to 10,100 MW.

## IV. Appendices

- A. 2005 Peak Load Summary Graphs
- B. 2005 Imports Summary Graphs
- C. 2005 Generation Summary Graphs
- D. Outage Data
- E. 2006 Generation Additions
- F. Generation Retirements

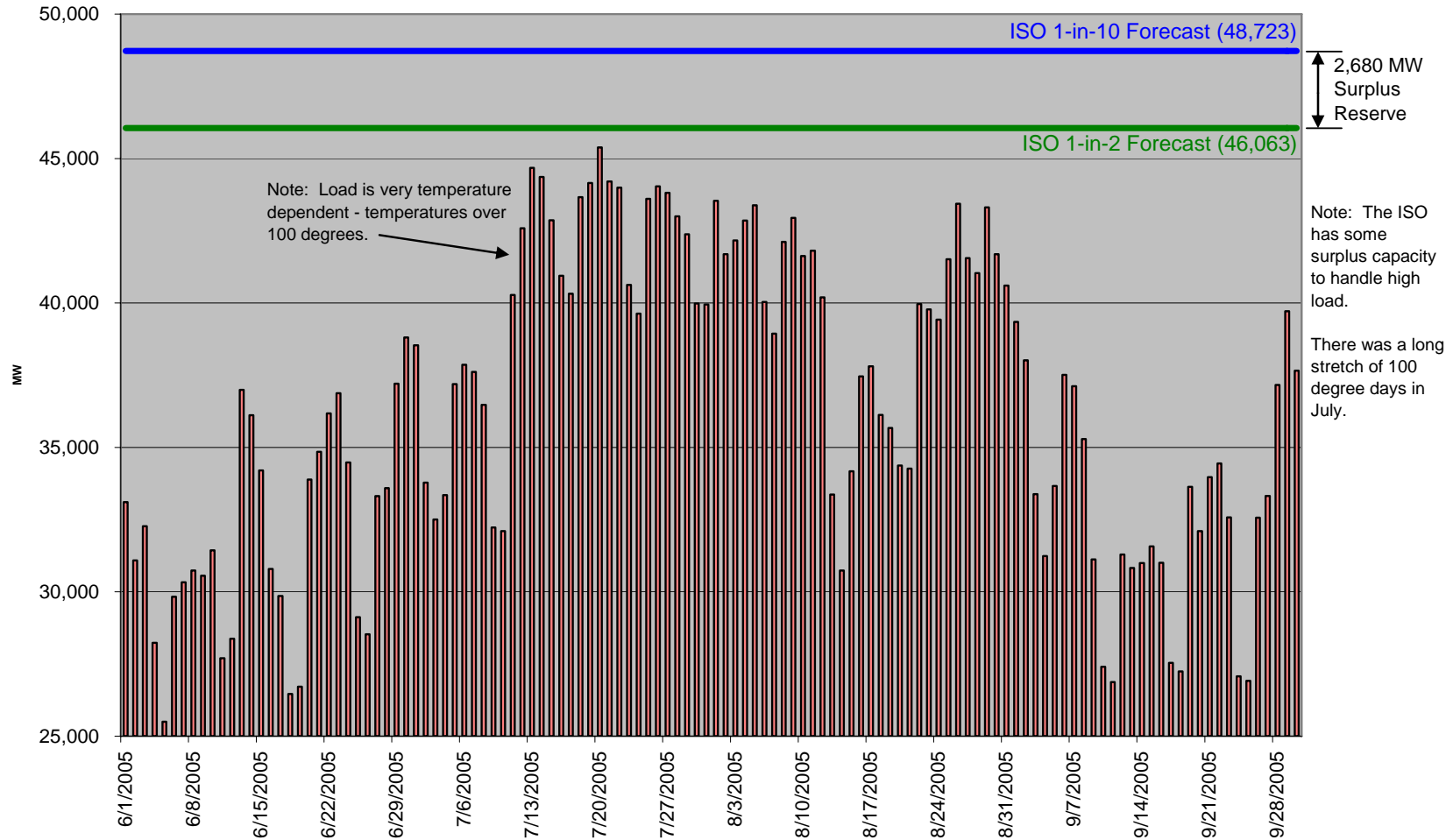
Appendix A - 2005 Peak Load Summary Graphs

# CAISO Load Comparison Actual to Forecast



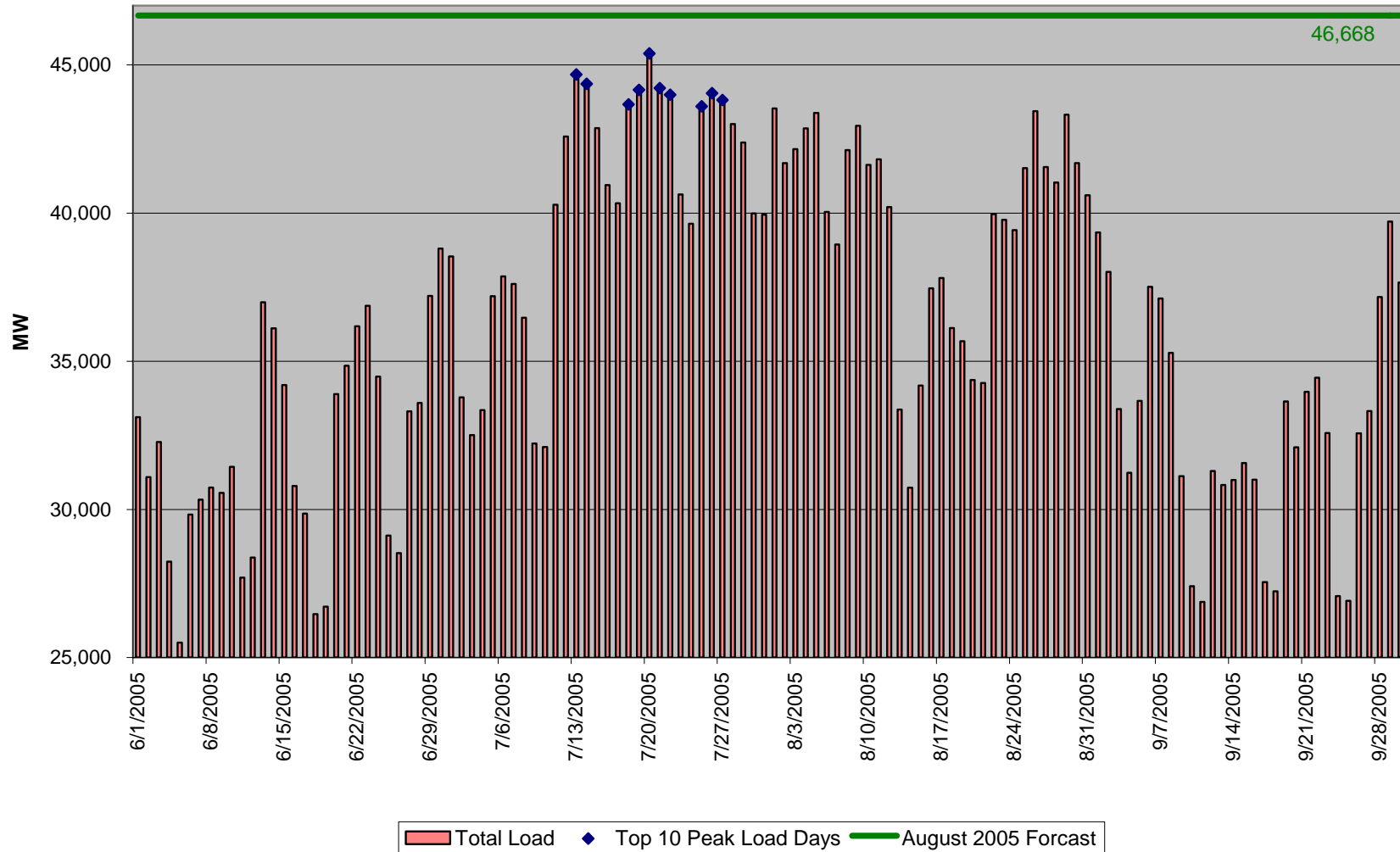
Appendix A – Continued

# ISO Peak Load Actuals vs. 2006 Forecast



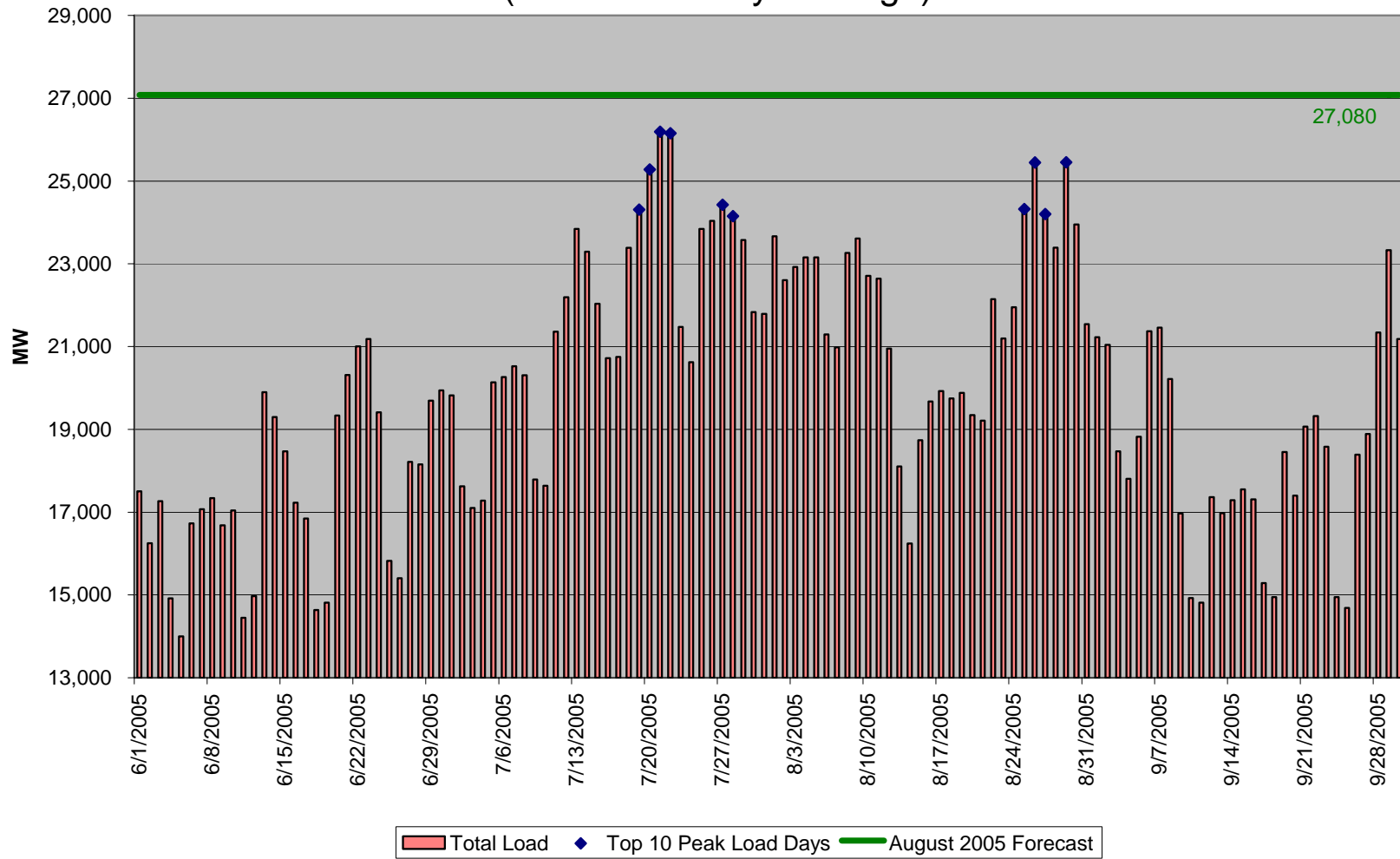
Appendix A – Continued

# CAISO Peak Load Summary (HE1700 Hourly Average)



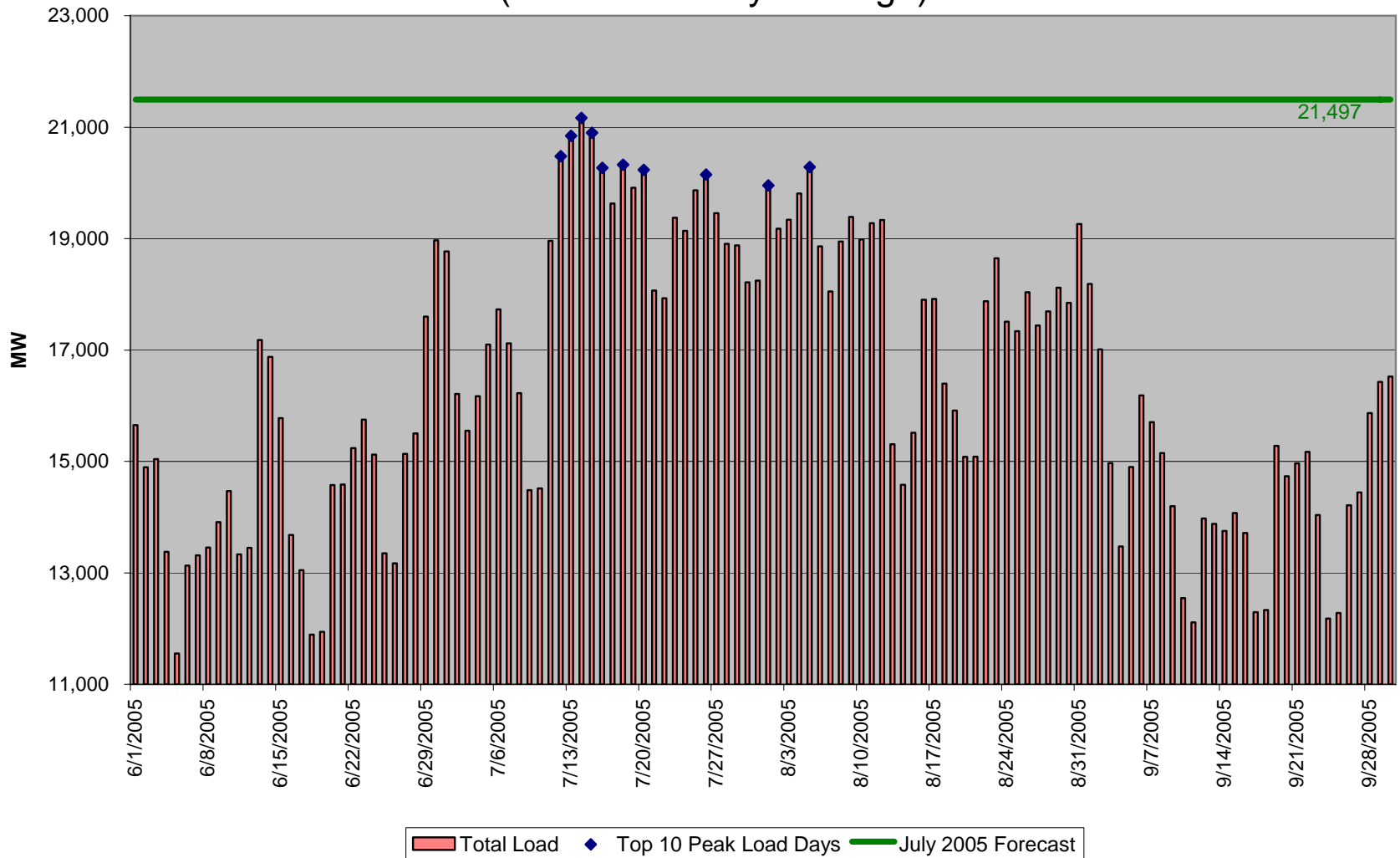
Appendix A – Continued

### SP26 Peak Load Summary (HE1700 Hourly Average)



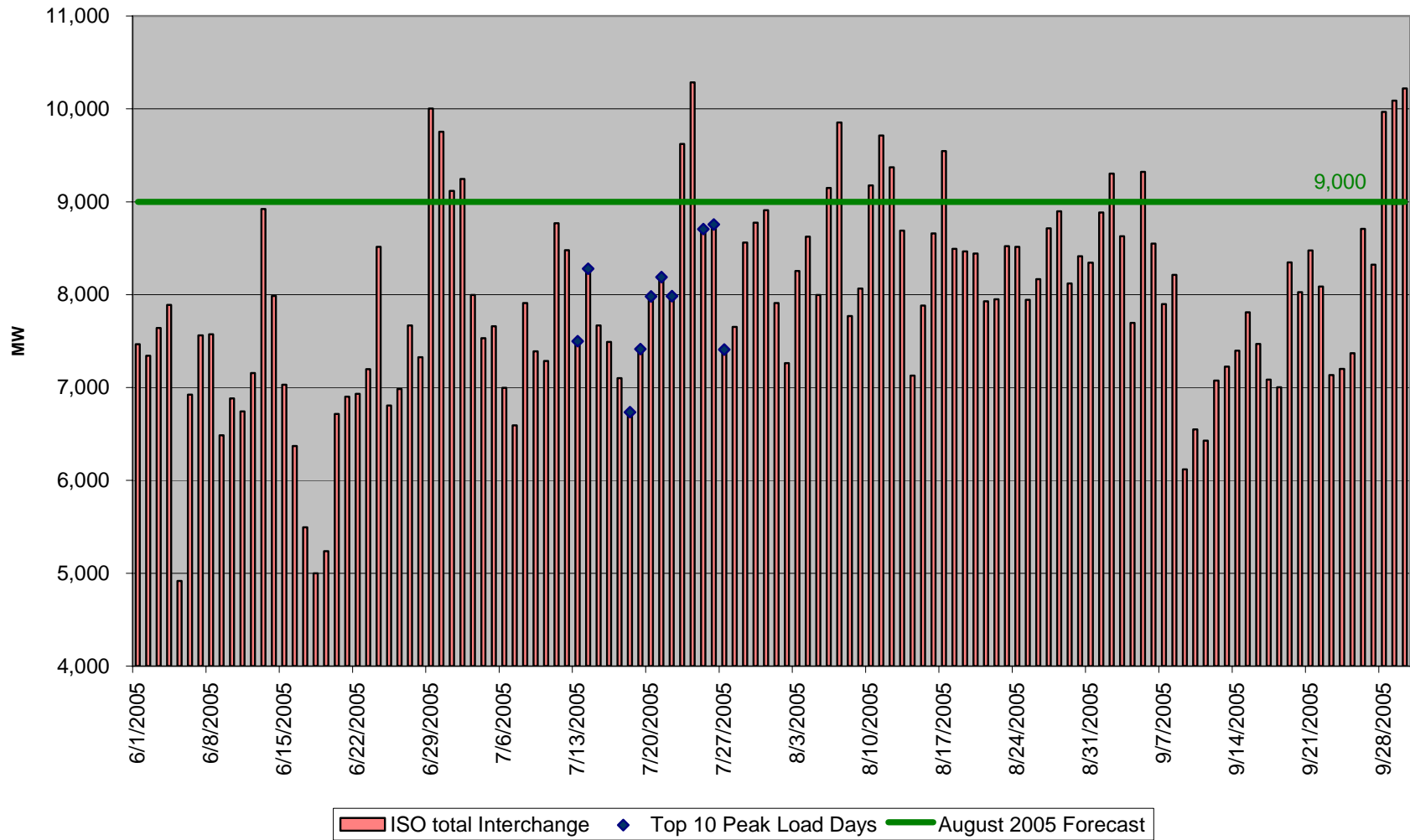
Appendix A – Continued

# NP26 Peak Load Summary (HE1700 Hourly Average)



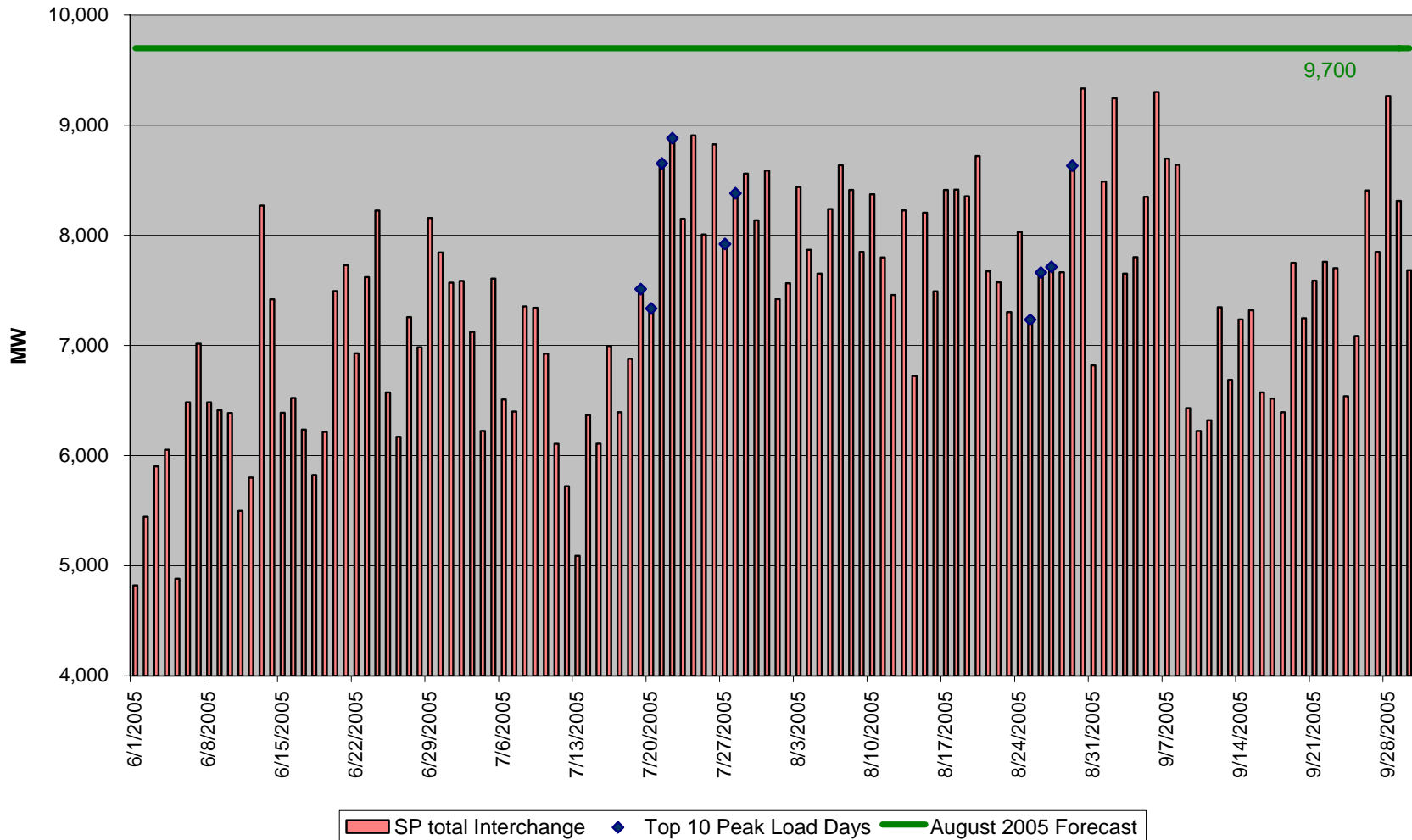
Appendix B - 2005 Imports Summary Graphs

# CAISO Imports Summary (HE1700 Hourly Average)



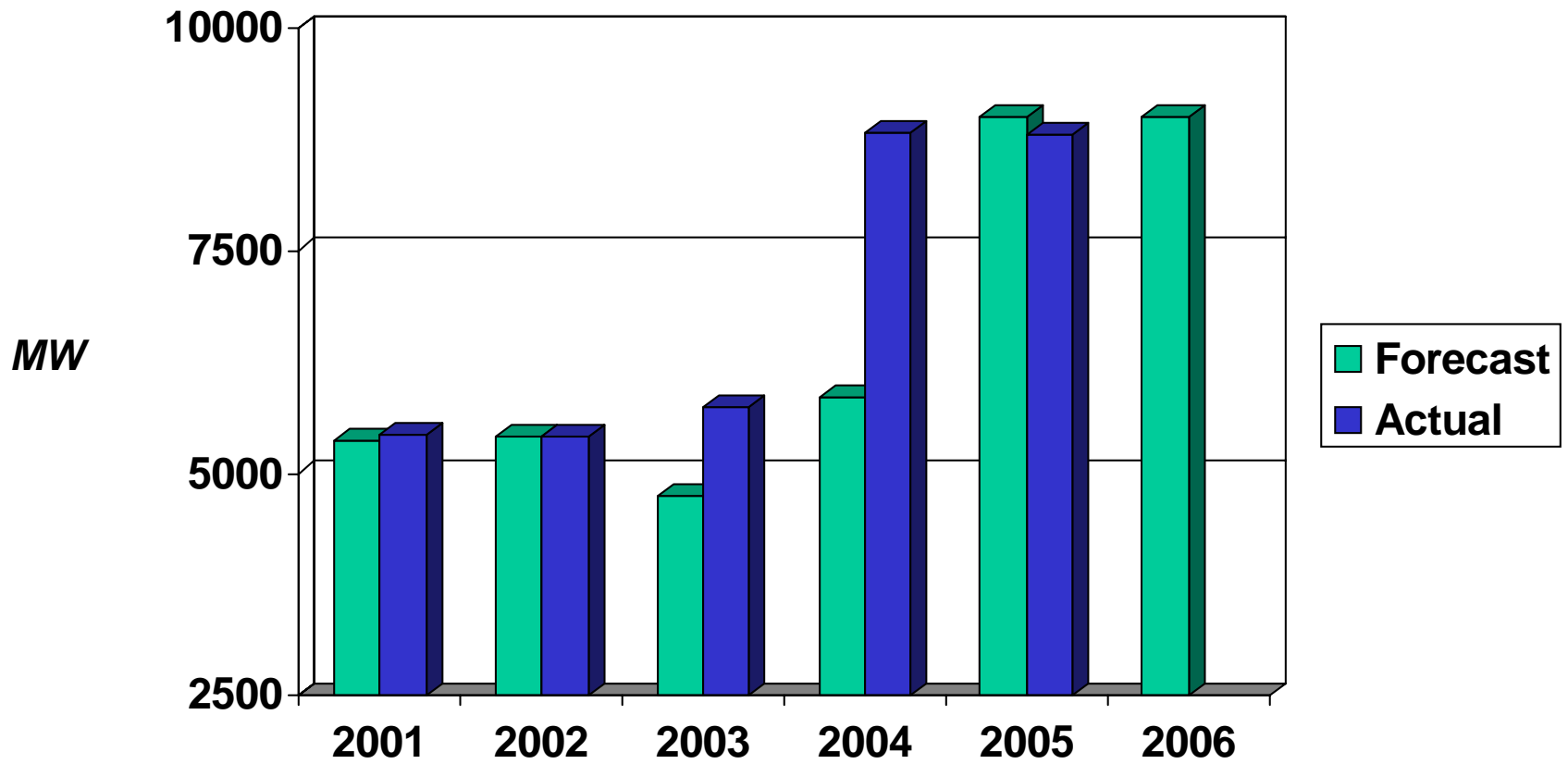
Appendix B – Continued

# SP26 Imports Summary (HE1700 Hourly Average)



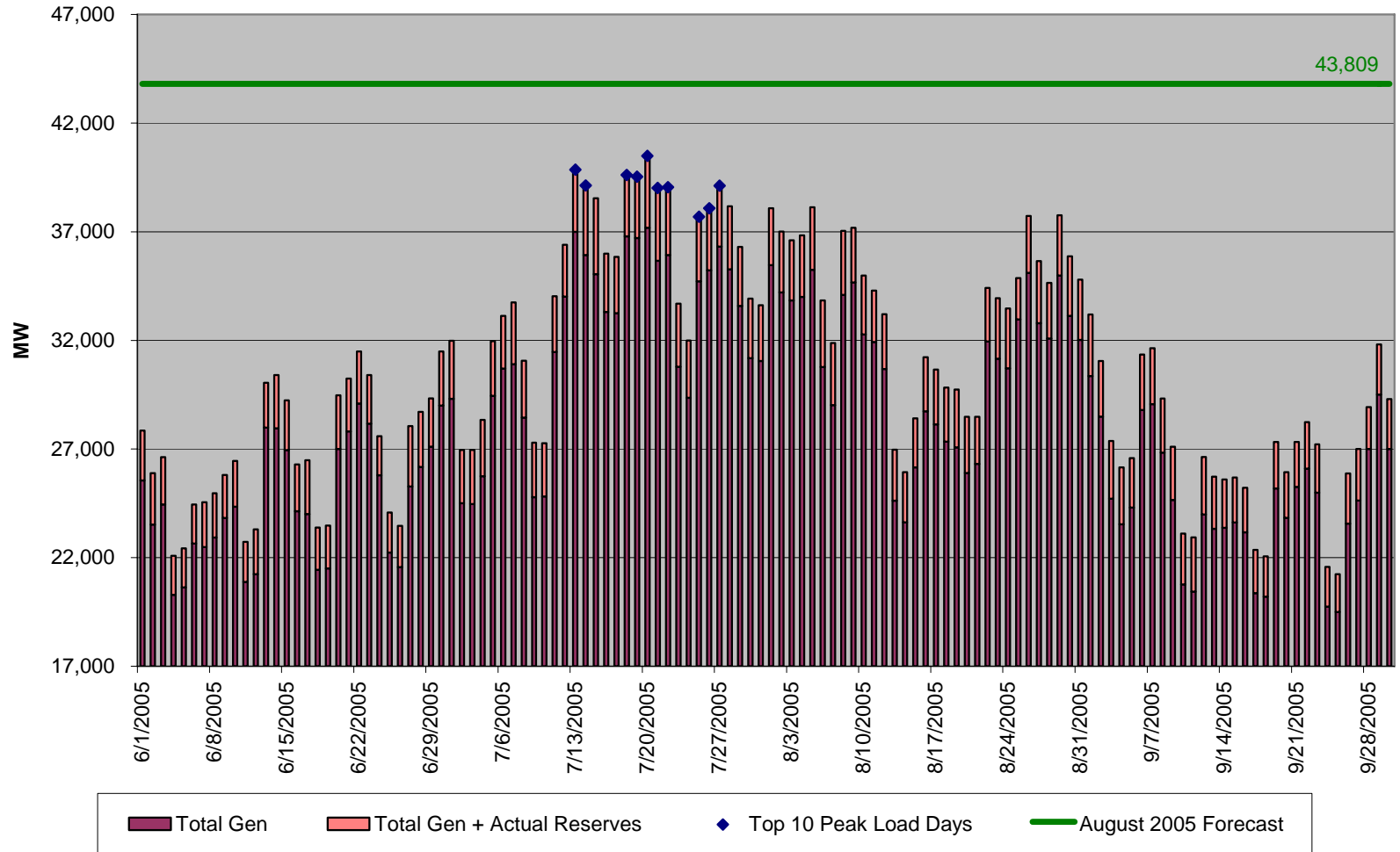
Appendix B – Continued

# Historical Import Forecast Forecast to Actual



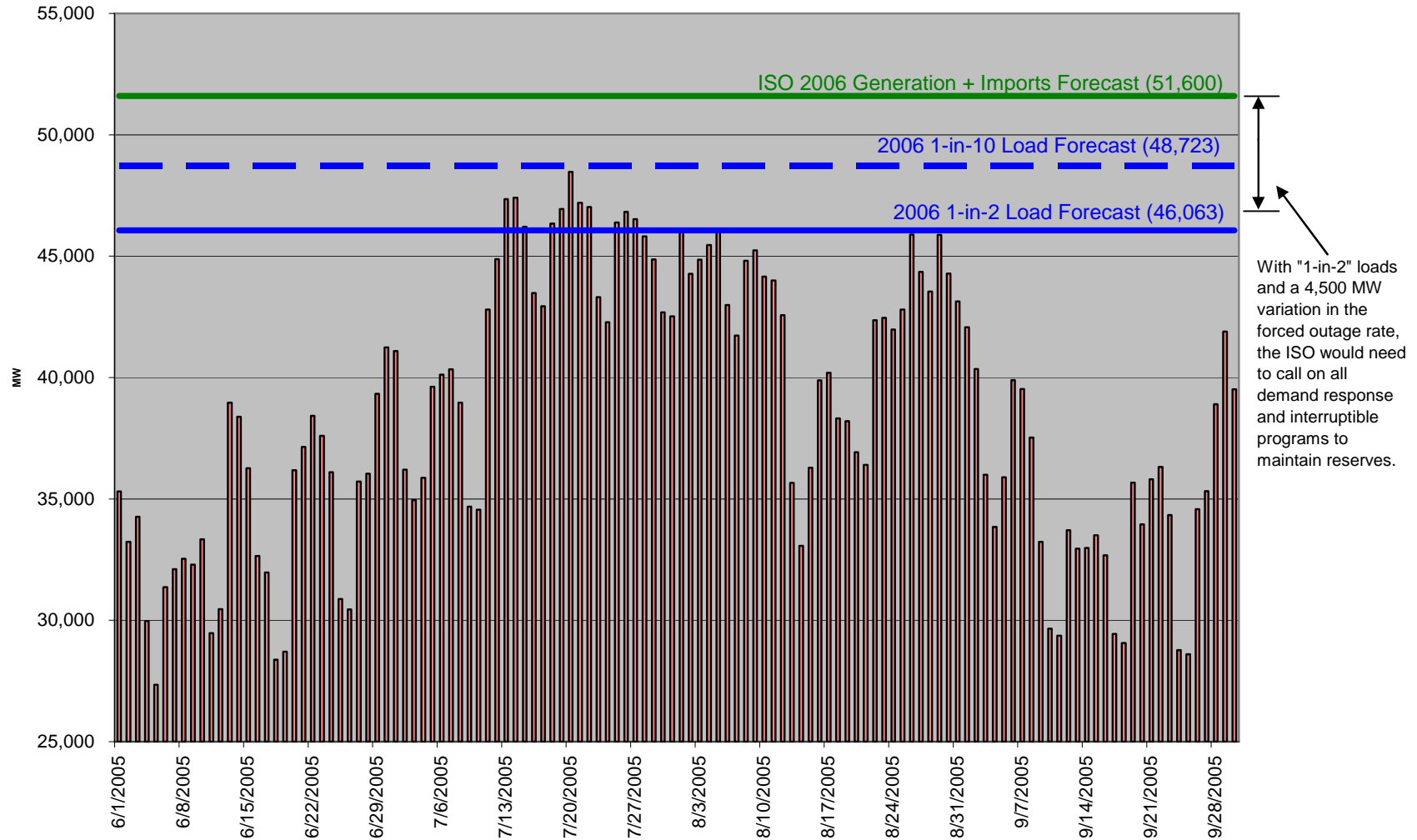
Appendix C - 2005 Generation Summary Graphs

CAISO Generation Summary  
(HE1700 Hourly Average)



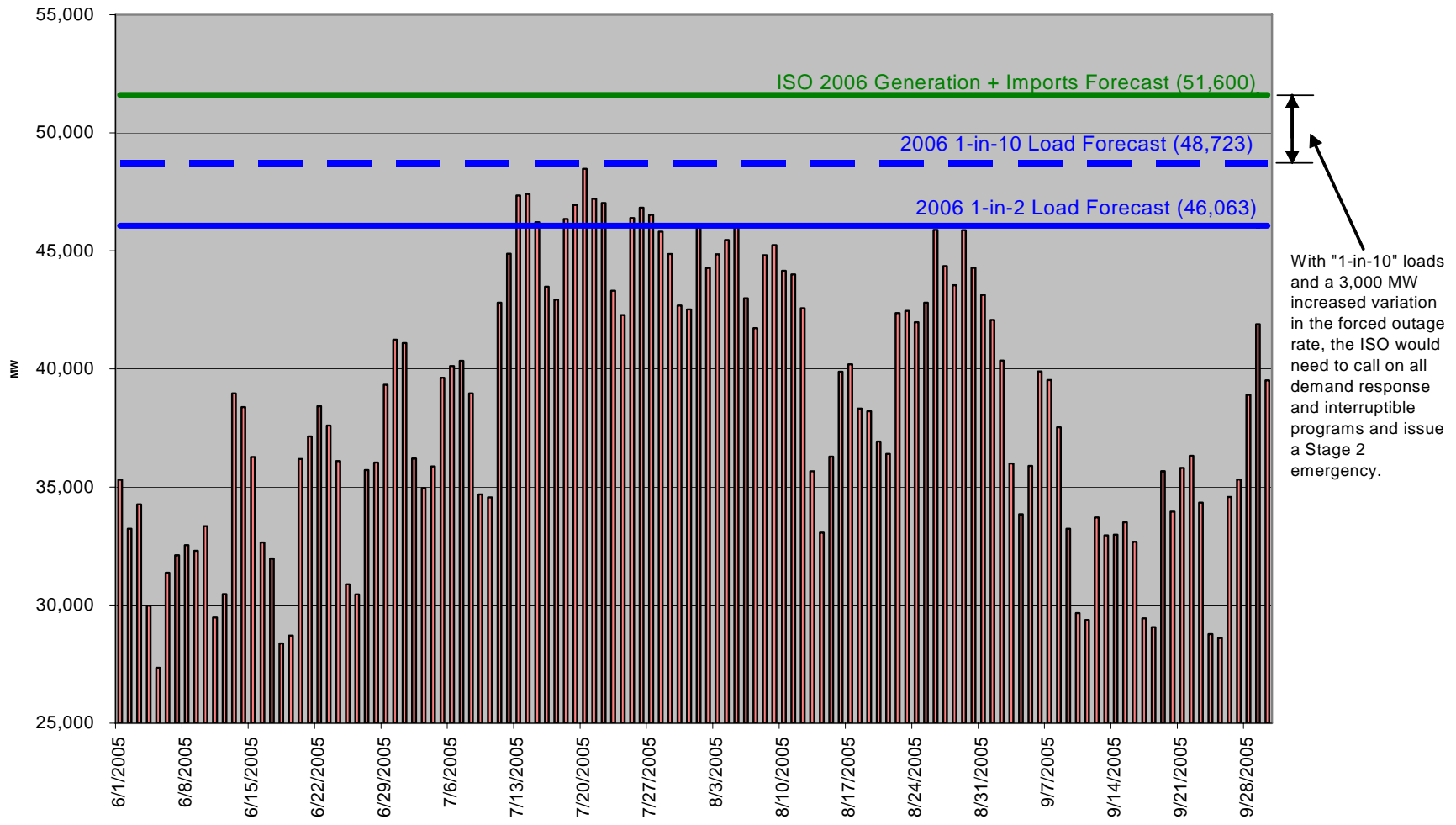
*Appendix C – Continued*

## 2005 CAISO Generation + Imports Actuals vs. 2006 Load Forecast



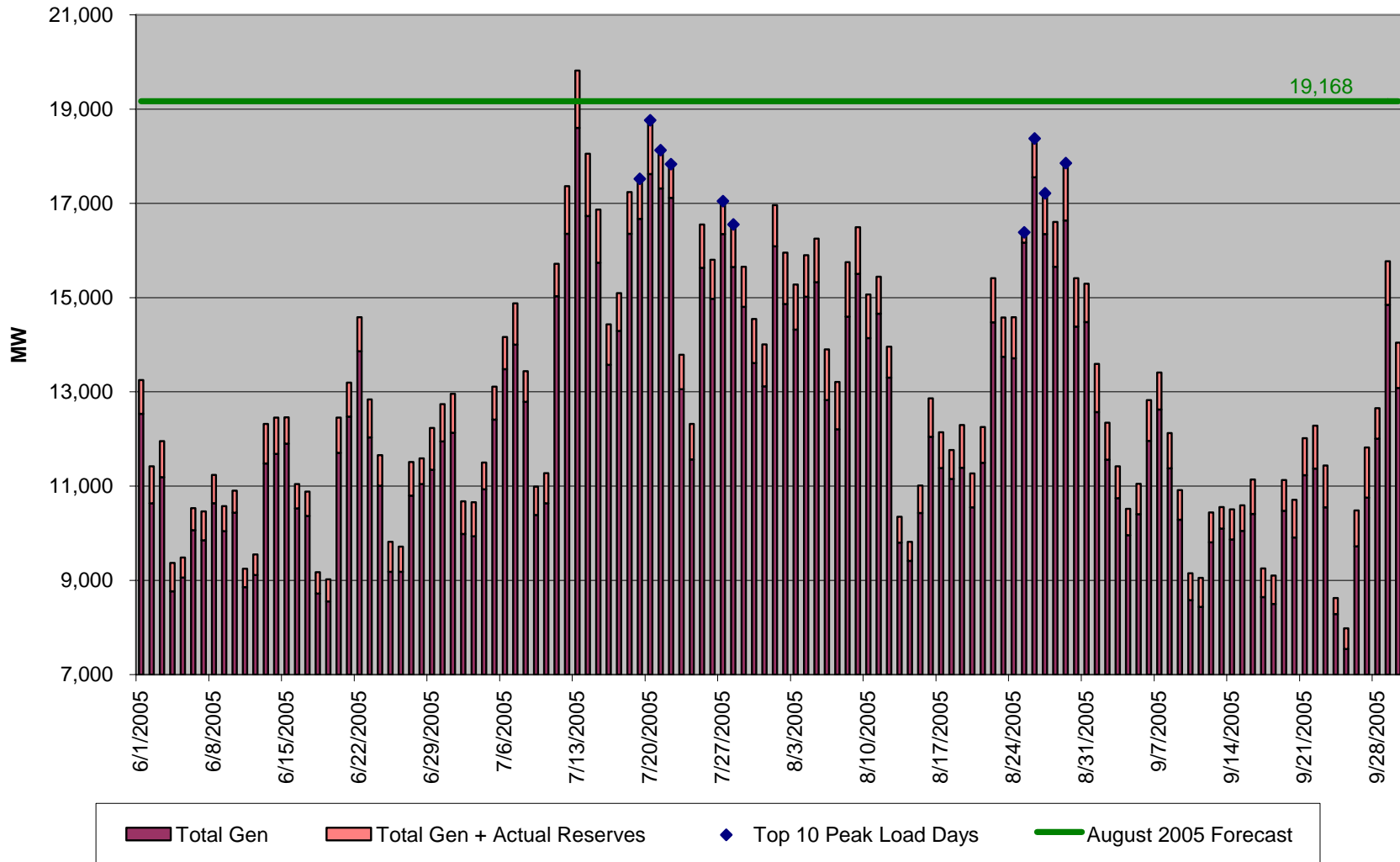
**Appendix C – Continued**

**2005 CAISO Generation + Imports Actuals vs. 2006 Load Forecast**



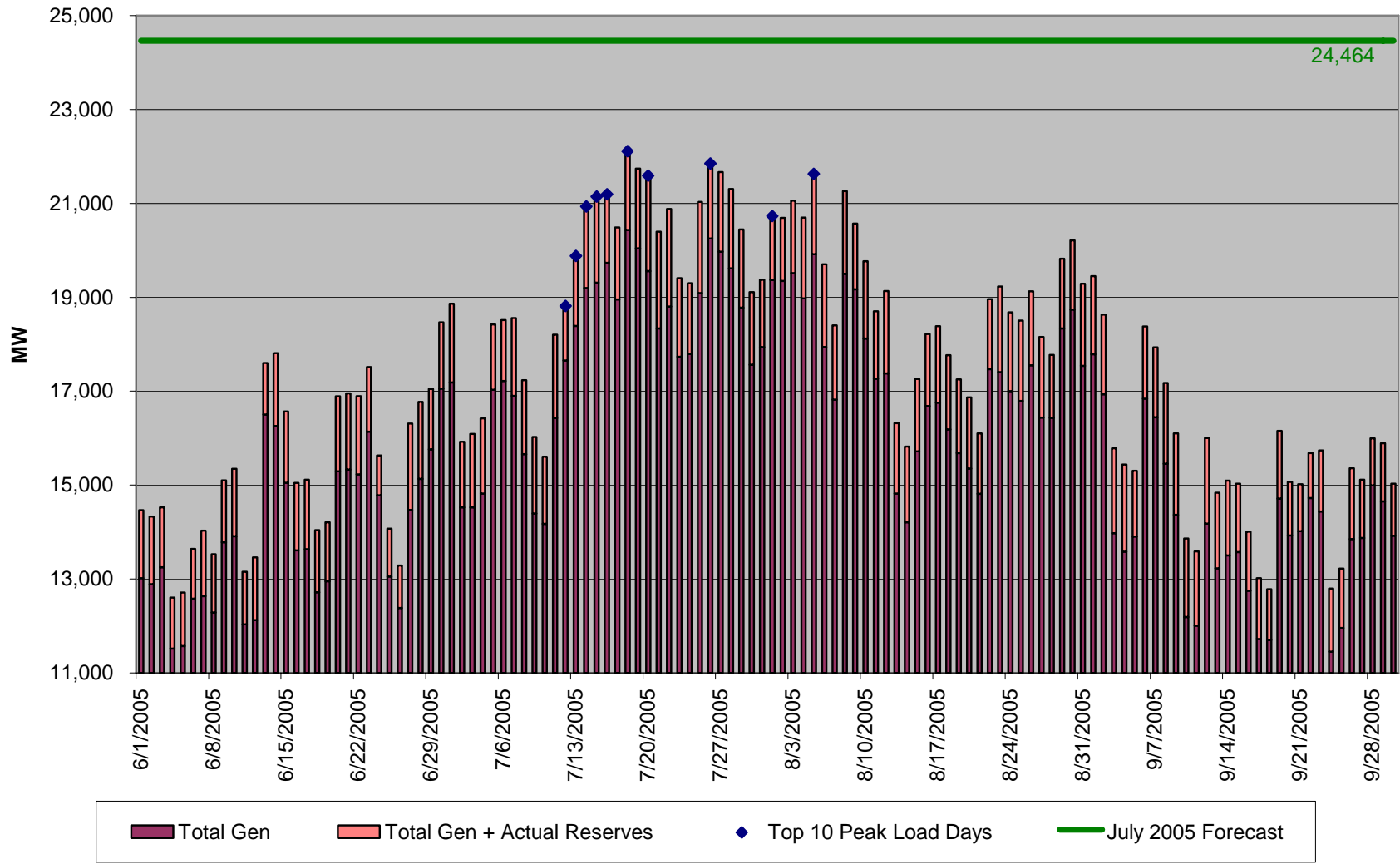
Appendix C – Continued

# SP26 Generation Summary (HE1700 Hourly Average)



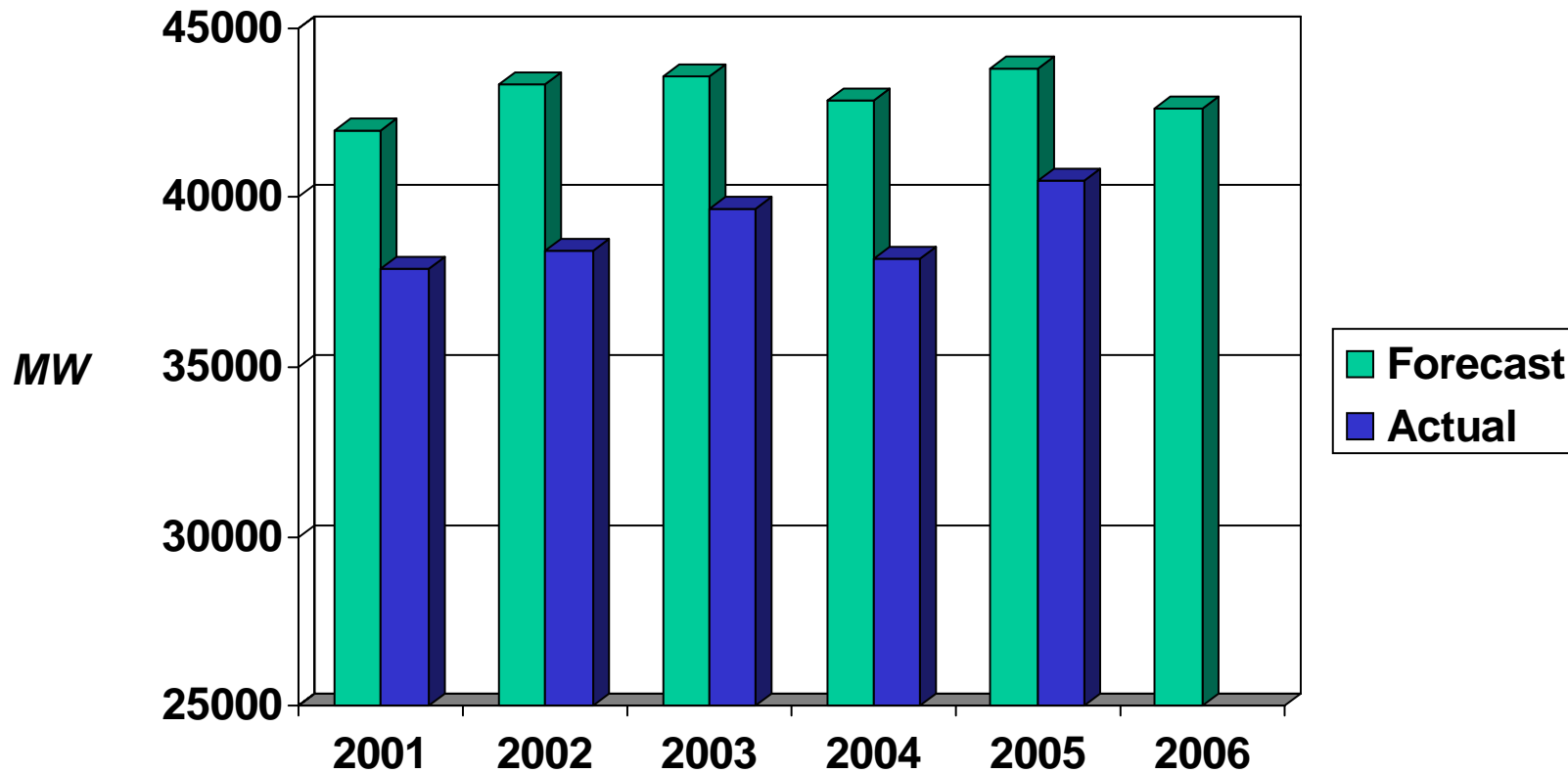
Appendix C – Continued

# NP26 Generation Summary (HE1700 Hourly Average)



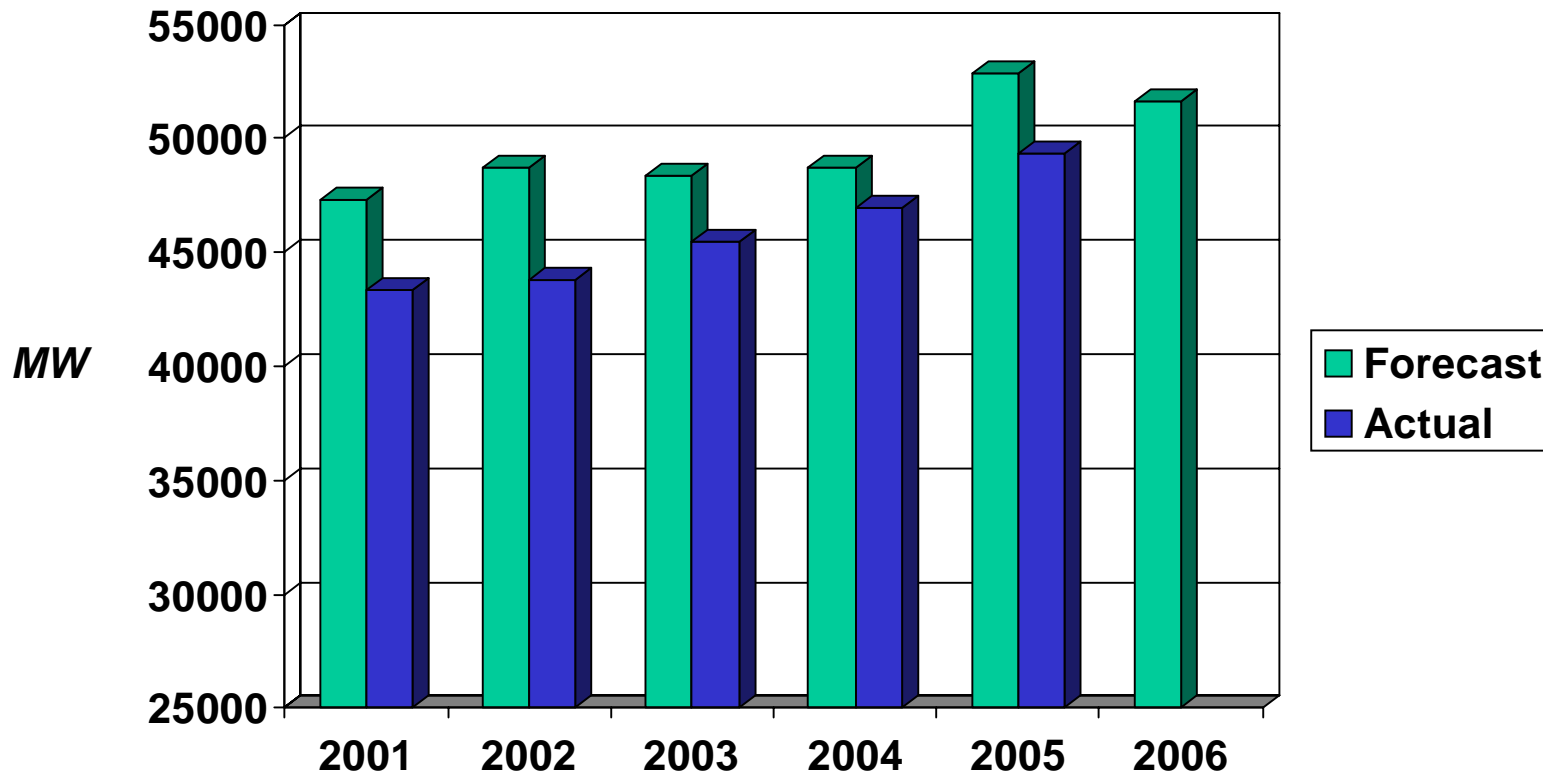
Appendix C – Continued

# Historical Generation Forecasts Forecast to Actual



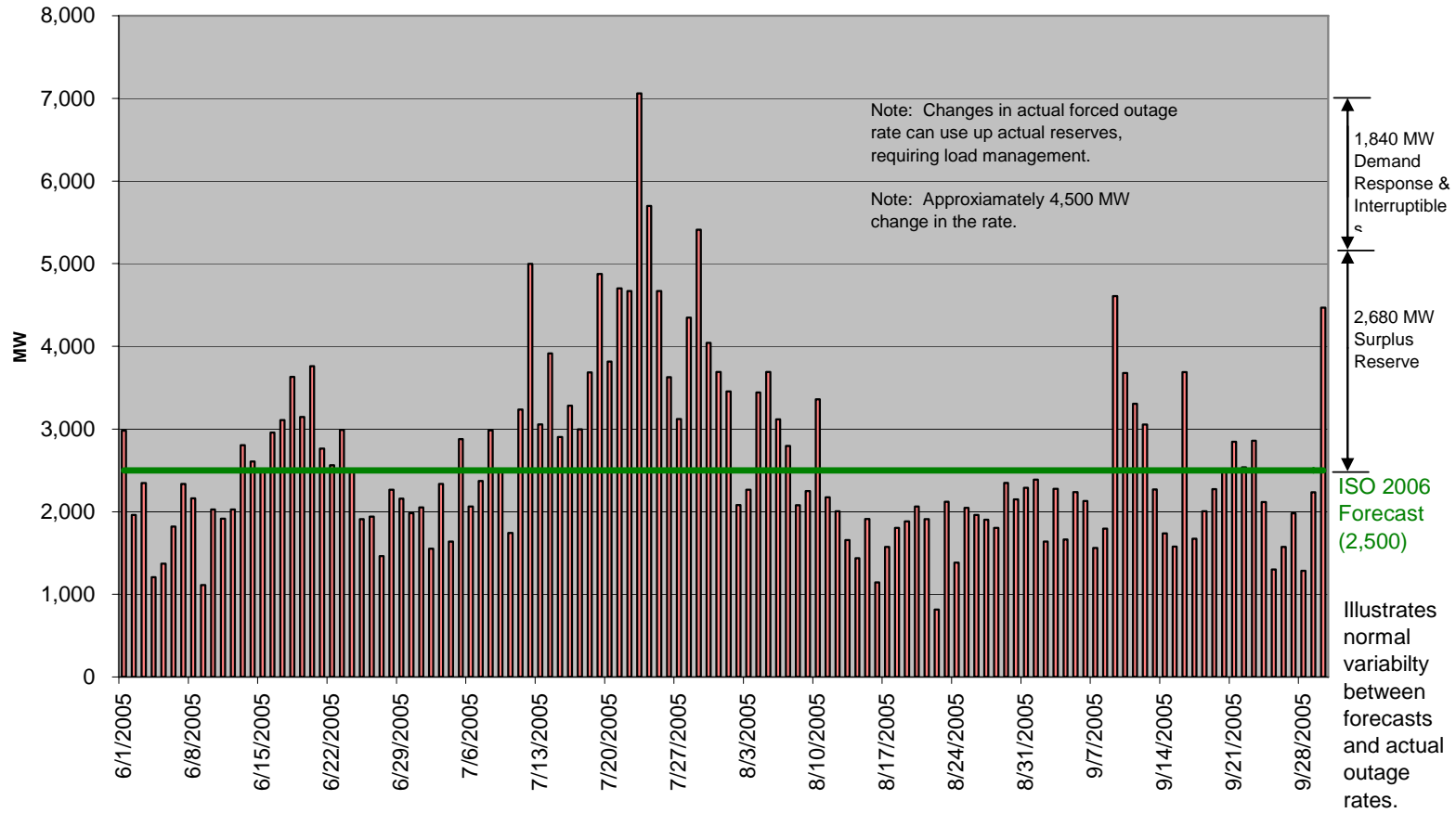
Appendix C – Continued

# Historical Generation + Import Forecast Forecast to Actual



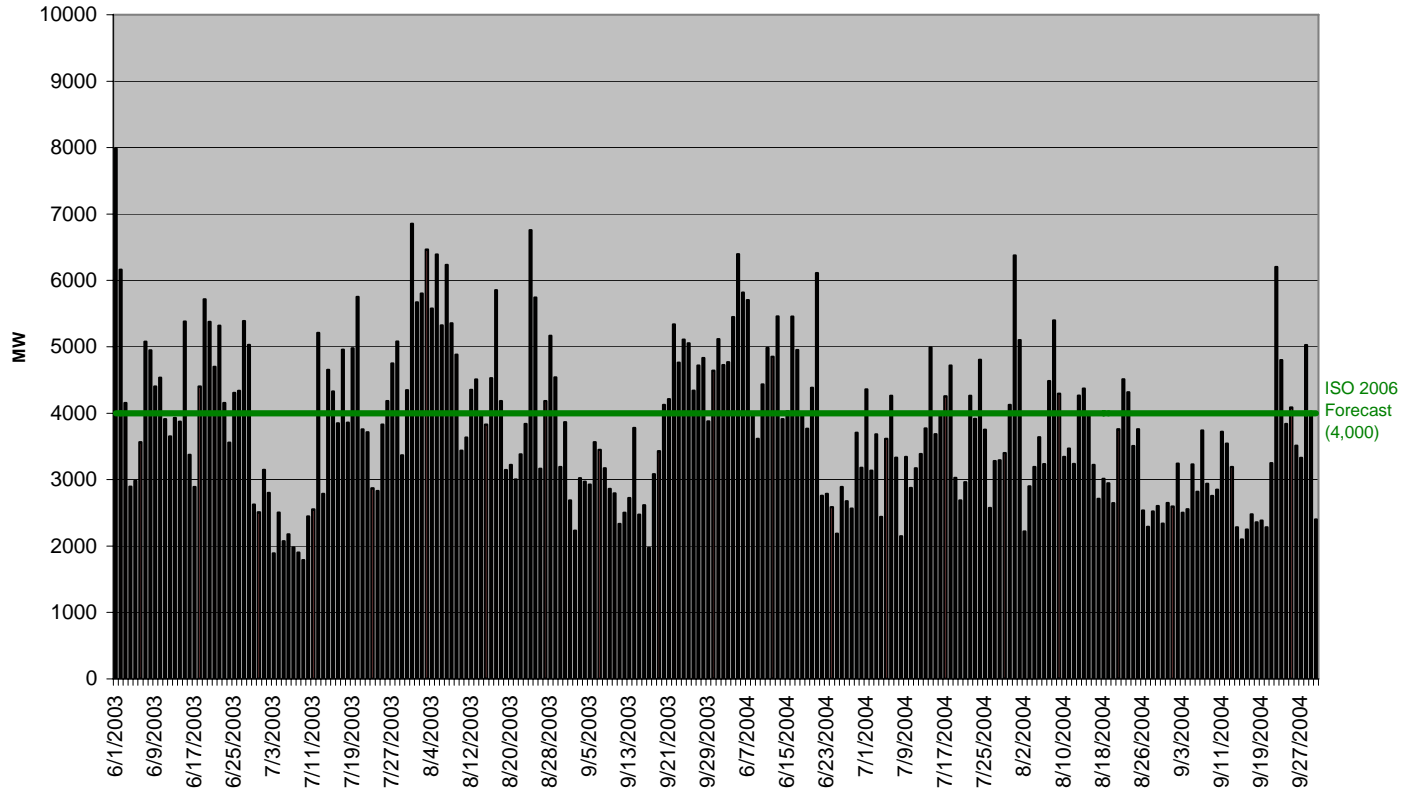
**Appendix D – Outage Graphs**

**ISO Forced Outages  
2005 Actuals**



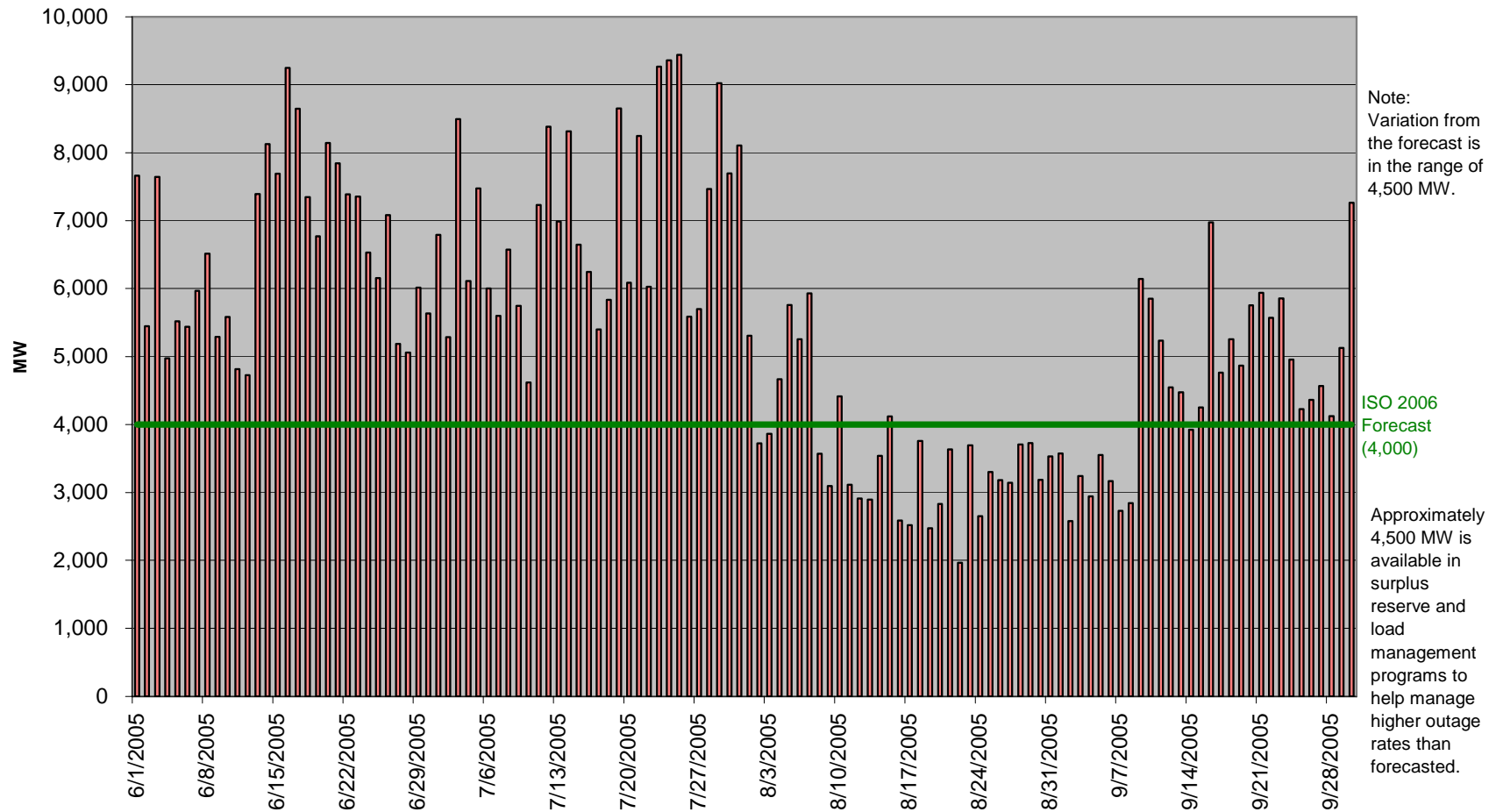
*Appendix D – Continued*

### CAISO Forced + Planned Outages 2003 & 2004 Actuals



Appendix D – Continued

# CAISO Forced + Planned Outages 2005 Actuals



**Appendix E - 2006 Generation Additions**

**Summer 2006 Outlook  
NP26 Generation Additions (excluding wind)  
July 1, 2005 through July 31, 2006**

<b>Project Name</b>	<b>Project Owner Company</b>	<b>Capacity (MW)</b>	<b>Fuel Type</b>	<b>Transmission Owner</b>	<b>Estimated Parallel Date</b>	<b>Actual Parallel Date</b>	<b>Actual COD Date</b>
Santa Cruz Landfill Generating Plant	Ameresco Santa Cruz Energy LLC	3	Landfill Gas	PGE	1/6/2006	1/6/2006	2/2/2006
KRCD Malaga Peaking Plant	Kings River Conservation District	86	Natural Gas	PGE	6/2/2005	6/2/2005	9/19/2005
Fresno Cogeneration Expansion Project	Fresno Cogeneration Partners, LP	22	Natural Gas	PGE	5/31/2006	5/31/2006	
Fresno Cogeneration ICE Unit	Fresno Cogeneration Partners, LP	1	Natural Gas	PGE	6/15/2006	6/15/2006	
Diablo Canyon Upgrade	PGE	28 140	Steam	PGE	12/8/2005	12/8/2005	12/8/2005

**Appendix E - Continued**

**Summer 2006 Outlook  
SP 26 Generation Additions (excluding wind)  
July 1, 2005 through July 31, 2006**

Project Name	Project Owner Company	Capacity (MW)	Fuel Type	Transmission Owner	Estimated Parallel Date	Actual Parallel Date	Actual COD Date
Miramar Energy Facility	Envirepel	40	Natural Gas	SDGE	5/16/2005	5/16/2005	7/27/2005
Malburg Generating Station	City of Vernon	129	Natural Gas	City of Vernon	7/26/2005	7/26/2005	10/17/2005
Palomar Energy Project (PEP)	Sempra	480	Natural Gas	SDGE	10/30/2005	10/30/2005	3/31/2006
Mountainview Power Project Power Block 3	Mountainview Power Co. LLC	506	Natural Gas	SCE	8/10/2005	8/10/2005	12/10/2005
Mountainview Power Project Power Block 4	Mountainview Power Co. LLC	506	Natural Gas	SCE	11/7/2005	11/7/2005	1/19/2006
Rancho Penasquitos Hydro Facility	San Diego County Water Authority	5	Water	SDGE	4/17/2006		
Riverside Energy Center	City of Riverside	86	Natural Gas	City of Riverside	3/21/2006	3/22/2006	
Otay 3	Covanta Power Pacific Inc	3	Landfill Gas	SDGE	7/31/2006		
		1755					

**Appendix E – Continued****SP 26 Wind Additions  
July 1, 2005 through July 31, 2006**

<b>Project Name</b>	<b>Project Owner Company</b>	<b>Capacity (MW)</b>	<b>Fuel Type</b>	<b>Transmission Owner</b>	<b>Estimated Parallel Date</b>	<b>Actual Parallel Date</b>	<b>Actual COD Date</b>
Kumeyaay Wind Farm	Babcock & Brown Power Op Partners LLC	46	Wind	SDGE	11/9/2005	11/9/2005	12/31/2005
		46					

**NP 26 Wind Additions  
July 1, 2005 through July 31, 2006**

<b>Project Name</b>	<b>Project Owner Company</b>	<b>Capacity (MW)</b>	<b>Fuel Type</b>	<b>Transmission Owner</b>	<b>Estimated Parallel Date</b>	<b>Actual Parallel Date</b>	<b>Actual COD Date</b>
Shiloh Wind Partners LLC	enXco USA, Inc.	150	Wind	PGE	1/7/2006	1/7/2006	3/30/2006
		150					

**Appendix F - 2006 Generation Retirements****SP 26 Retirements  
July 1, 2005 through July 31, 2006**

<b>Project Name</b>	<b>Project Owner Company</b>	<b>Nameplate Capacity (MW)</b>	<b>Fuel Type</b>	<b>Transmission Owner</b>	<b>Actual Retirement Date</b>
Mohave Units 1 & 2	SCE	1580	Coal	SCE	1/1/2006

**NP 26 Retirements  
July 1, 2005 through July 31, 2006**

<b>Project Name</b>	<b>Project Owner Company</b>	<b>Capacity (MW)</b>	<b>Fuel Type</b>	<b>Transmission Owner</b>	<b>Estimated Retirement Date</b>
Hunters Point Units 1 & 4	PGE	215	Natural Gas	PGE	4/19/2006