Resource Adequacy 2016 Load Forecast Adjustment Methodology - Revised

Miguel Cerrutti

Demand Analysis Office – California Energy Commission

Donald Brooks

Energy Division – California Public Utilities Commission

May 12, 2016

This report documents the methodology used by the Demand Analysis Office (DAO) of the California Energy Commission (CEC) to implement the process defined by the California Public Utility Commission’s (CPUC’s) Decision (D.) 05-10-042 for the 2017 compliance year. The process consists of adjusting CPUC jurisdictional load-serving entities (LSEs) peak load forecasts to be used for year-ahead and month-ahead CPUC Resource Adequacy (RA) program compliance. The program requires LSEs to submit monthly and annual compliance fillings to ensure they have adequate capacity commitments to satisfy peak demand plus reserves. The methodology the CEC applies to LSE compliance information includes five distinct adjustments: forecast, coincidence, plausibility, demand side management, and prorating to the overall CEC demand forecast.

### Development of IOU Service Area Forecasts

CEC’s peak-load forecast for each investor owned utility (IOU) service area is derived from short-term weather normalized peak-load forecasts for each transmission access charge (TAC) area[[1]](#footnote-1). Weather normalization factors out the variations in weather allowing for comparison of peak loads over time under different weather conditions. Weather normalization consists of regressing daily peak loads on weather and calendar effects and using the regression estimates with historical weather patterns in a Monte Carlo simulation to produce a distribution of peak loads of which the median, the one-in-two, represents the weather normalized peak loads. To better capture peak load’s weather sensitivity and adequately represent the latest weather patterns, weather normalization requires four years (2012 – 2015) of CAISO’s Energy Management System (EMS) data to estimate correlation between peak load and recent weather patterns and 30 years (1986 – 2015) of weather data to define normal weather conditions.

The two-step time-series regressive analysis based on peak-producing days and Monte Carlo simulation produces one-in-two weather normalized peak loads for summer and for each month, which are compared and adjusted with historic peak loads and load shapes of each service area. Weather normalized peak loads are projected two years ahead (2017), i.e. locked two years out, using the latest economic and demographic information. The one-in-two weather normalized peak loads for summer form the basis of the Integrated Energy Policy Report (IEPR) peak loads for the IOUs service areas after they have been adjusted downward by critical peak pricing, peak time rebate and non-event based demand program impacts (real time or time of use pricing and permanent load shifting). The one-in-two weather normalized monthly peak loads for each month are used by the CEC to reconcile the aggregate LSEs year-ahead forecasts in each IOU area for RA compliance.

CPUC jurisdictional LSEs submit peak demand forecasts each year by following the “best estimate approach”. LSEs use reasonable assumptions for monthly demand growth and load migration and create a forecast of their individual non-coincident peak load. These monthly forecasts are checked to ensure that transmission, distribution, and unaccounted for energy losses are properly included. Adjustments to IOU forecasts typically reflect differences in forecast assumptions compared to the CEC forecasts while adjustments to energy service provides (ESPs) forecasts reflect uncertainty in load migration assumptions.

### Coincidence Factor Adjustment

The CEC evaluates each LSE load forecast individually and performs an adjustment to reflect the LSE’s load contribution to the coincident CAISO’s system peak in that month. CEC staff developed a methodology to calculate LSE-specific monthly coincidence factors[[2]](#footnote-2) for each TAC area. CEC staff began by collecting LSE hourly load data and CAISO settlement loads for the three immediately preceding years (i.e. 2013 - 2015). Hourly load data can be sourced from either the CAISO EMS (energy management system) or from the CAISO Open Access Same-Time Information System (OASIS). EMS is confidential, and represents more accurate information. OASIS data can be very close to EMS data, however, and when there is not significant difference between either the MW level of the peak or the date and time of peak, OASIS data can be a good substitute since it is publicly posted and available sooner.

CEC staff analyzed the variation between 2015 EMS data and 2015 OASIS data to look at the five highest MW levels of hourly peaks and the date and time of peaks I neach of 12 months (60 points total) to determine which dataset was more appropriate to use for development of 2017 RA obligations. When the date and time for all five hourly peaks in each month are the same, and when there is less than 3% difference in the MW level of a peak between OASIS and EMS, the CEC could perform the analysis for coincidence factor with OASIS data instead of EMS data. Otherwise EMS data should be used.

After careful review of 2015 hourly loads, the variation in MW peak load level differed between OASIS and EMS data greater than 3% on five out of 60 peak load events in 2015. The date and time of peak was different on three occasions in 2015, one each in February, March, and November. Thus EMS data will be used for determination of coincident peak adjustments for 2017 compliance year.

Table 1 at the end of this document lists the five peak MW events in OASIS data for each of 12 months of the last three years (180 points total).[[3]](#footnote-3) This data is similar but not identical to the EMS data used for the coincidence analysis, since the MW peak values are different on five occasions and the date and time of peak are different on three occasions as referenced earlier.

The coincidence factor reflects each LSE’s forecast contribution to hourly load at the time of CAISO’s peak load. It is calculated as the ratio of each LSE’s load at the time and hour of CAISO system peak loads to the specific LSE’s actual non-coincident peak load on any CAISO peak hour. The coincidence factor is calculated as the median of the five highest coincidence factors in a given month, taken by comparing the five highest CAISO coincident peaks with the LSE’s load level at those dates and times. The median is the preferred method over the mean as an indicator of central tendency due to the skewed nature of the peak load values. The monthly LSE-specific coincidence adjustment factor developed for each LSE in each month is used in setting the LSE’s RA obligation for that month. The proportionate shares at time of CAISO peak are also used in calculating the load factors used to allocate RA capacity credit and import transfer rights.

####  (2.5) Analysis of Inter-year Variance in Coincidence Factors

CPUC and CEC staff based the coincidence adjustments on the previous one to three years of load data, due to concerns about the disproportionate impact of outlier events due to small sample size. Greater sample sizes better approximate historical trends across all months of the year. Annual variability is also more related to weather than to load composition. For those reasons, factors were estimated from one to three years of data, depending on inter-year variability. Typically, three years of monthly peak loads will display inter-year variance ranging between 1% and 10%

Although a greater sample size provided by three years of data eliminated the most extreme effects of outlying data, inter-year inconsistency persisted for some LSE forecasts, producing unreasonable results. Weather effects are expected to be the largest driver of inter-year variation, although differences in load composition can also play a role. Atypically extreme weather events bias results based upon small sample sizes, but larger sample sizes can possibly obscure changing trends in load composition that are more reflective of future load trends than past load trends. A median of five coincidence values in a given year captures coincidence factor central tendency, but more years of data allows capture of variance related to recent changes in load composition, while also reducing the effects of extreme weather patterns.

CEC staff will analyze inter-year variance of coincidence factors for each LSE and TAC area by month. In order to increase accuracy while, to the extent possible, preserving simplicity and transparency, CEC staff matched the sample size considered for each LSE to the variance measured in the original sample of fifteen points (five points per year for each of three years). If a particular LSE’s coincidence factors vary in any specific month over the last three years by less than 3%, the median coincidence factor for that month from the single most recent year (median of five derived factors) will become that LSE’s monthly coincidence factor to transform their non-coincident load forecast into their month specific coincident peak load forecast and RA obligation.

If variation in an LSE’s peak for a given month comparing the last three years is greater than 3% but less than or equal to 5%, ten coincidence factors for that month over the two most recent years of data will be used to make the coincidence adjustment for their RA obligation. Finally, if inter-year variance in a given month is greater than 5%, the median of fifteen LSE coincidence factor values from the previous three years will be used to determine the LSE specific coincidence adjustment.

#### This particular method of determining median coincidence factors is a result of comparing the variance of coincidence factors for each LSE by month and TAC area over the three year period referenced. For the majority of LSE-months surveyed, variance of less than 3% was observed ((around 66% of LSE months across TAC areas), and variance of greater than 5% was the second most common observation (around 20% of LSE months). Variance between 3% and 5% was the least common observed (around 14% of LSE months). With this relatively high proportion of LSE months with relatively little variance, thus using one year of historical data, in general the most standard and transparent method was applied in the majority of cases. This proposed methodology will be used to calculate LSE-specific monthly coincidence factor for each TAC area for the 2017 compliance year.

#### (3) Plausibility Adjustment

As provided by CPUC Decision (D.) 04-10-035, CEC staff determines whether an LSE’s forecast is plausible by comparing preliminary LSE coincidence adjusted submitted forecasts with CEC’s adopted IOU service area forecasts. CEC staff performs a plausibility comparison for individual LSE forecasts to the most recent peak load forecasts for August, and adjusts them to conform if the difference is greater than a tolerance threshold. An estimate of current monthly peak demand is calculated from monthly load profiles and recent LSE-specific month-ahead peak demand forecasts. If an LSE’s monthly forecast exceeds the tolerance threshold, then CEC staff evaluates the reasonableness of the forecast and adjusts it to make it more plausible. CEC staff allows LSE forecasts to be up to five percent divergent from CEC estimates before the forecast is considered implausible.

####  (4) Demand side Management Allocation Adjustment

After the coincidence adjustments and plausibility adjustments are applied, CEC staff allocates credit for energy efficiency (EE), demand response (DR), and distributed generation (DG) programs in each of the three IOU service areas[[4]](#footnote-4). The allocation accounts for the proportion of the load impacts accruing to each LSE due to a portion of the distribution charge paid by their customers. CEC staff allocates the impacts of the programs to LSEs proportionate to their share of load and so the decrease to their loads equals to the sum of the EE, DR, and DG credits. Consistent with the direction in D.05-10-042, impacts are either allocated to each LSE based on its share of total load or to only the IOUs depending on whether all customers or only bundled customers participate in the program.

Finally adjustments are made to LSE forecasts to account for Demand Response (DR) programs that are paid for through distribution charges. Time of Use, Permanent Load Shifting, Critical Peak Pricing, and Peak Time Rebate programs all decrease the CEC load forecast and are listed as downwards adjustments as part of the DR adjustment. The downwards effects of these programs impact IOU forecasts only or load forecasts for all bundled and non-bundled customers depending on how the costs of the program are recovered.

#### (5) Prorated Adjustment to Conform to Overall CEC Forecast

As established in D.05-10-042, after making the above adjustments CEC staff compares the aggregate of the LSE’s adjusted load forecasts to CEC’s adopted load forecasts and reconciles them if they differ by more than one percent in a given month by applying the pro-rata adjustment to bring the sum of the forecasts to within one percent of the CEC’s monthly weather normalized forecasts for IOUs service areas. CEC staff evaluates the reasonableness of the pro-rata adjustment for each LSE and service area.

From the aggregate LSE forecasts, CEC calculates monthly load shares for each TAC area that are used to allocate DR, cost-allocation methodology (CAM), and reliability must-run (RMR) RA credits. The forecasts and load shares for August are also used to allocate Local RA obligations. The forecasts and the allocations together determine the system annual and monthly RA obligations.

Table 1 2013-2015 CAISO Coincident Peaks

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date | Hour of Day | MW | Month of Year | Year | Day of Month | Rank |
| 1/14/2013 | 19 | 32614 | 1 | 2013 | 14 | 1 |
| 1/14/2013 | 20 | 32601 | 1 | 2013 | 14 | 2 |
| 1/15/2013 | 19 | 32057 | 1 | 2013 | 15 | 3 |
| 1/14/2013 | 21 | 31971 | 1 | 2013 | 14 | 4 |
| 1/15/2013 | 20 | 31858 | 1 | 2013 | 15 | 5 |
| 2/19/2013 | 19 | 30749 | 2 | 2013 | 19 | 1 |
| 2/19/2013 | 20 | 30596 | 2 | 2013 | 19 | 2 |
| 2/8/2013 | 19 | 30257 | 2 | 2013 | 8 | 3 |
| 2/7/2013 | 19 | 30091 | 2 | 2013 | 7 | 4 |
| 2/5/2013 | 19 | 29896 | 2 | 2013 | 5 | 5 |
| 3/7/2013 | 19 | 29863 | 3 | 2013 | 7 | 1 |
| 3/7/2013 | 20 | 29822 | 3 | 2013 | 7 | 2 |
| 3/13/2013 | 21 | 29557 | 3 | 2013 | 13 | 3 |
| 3/13/2013 | 20 | 29447 | 3 | 2013 | 13 | 4 |
| 3/5/2013 | 20 | 29310 | 3 | 2013 | 5 | 5 |
| 4/29/2013 | 17 | 32298 | 4 | 2013 | 29 | 1 |
| 4/29/2013 | 16 | 32144 | 4 | 2013 | 29 | 2 |
| 4/29/2013 | 18 | 32073 | 4 | 2013 | 29 | 3 |
| 4/29/2013 | 15 | 31850 | 4 | 2013 | 29 | 4 |
| 4/29/2013 | 21 | 31830 | 4 | 2013 | 29 | 5 |
| 5/13/2013 | 17 | 39400 | 5 | 2013 | 13 | 1 |
| 5/13/2013 | 18 | 39062 | 5 | 2013 | 13 | 2 |
| 5/13/2013 | 16 | 38903 | 5 | 2013 | 13 | 3 |
| 5/13/2013 | 19 | 38160 | 5 | 2013 | 13 | 4 |
| 5/13/2013 | 15 | 38000 | 5 | 2013 | 13 | 5 |
| 6/28/2013 | 17 | 44924 | 6 | 2013 | 28 | 1 |
| 6/28/2013 | 18 | 44719 | 6 | 2013 | 28 | 2 |
| 6/28/2013 | 16 | 44548 | 6 | 2013 | 28 | 3 |
| 6/28/2013 | 19 | 43677 | 6 | 2013 | 28 | 4 |
| 6/28/2013 | 15 | 43671 | 6 | 2013 | 28 | 5 |
| 7/1/2013 | 17 | 44814 | 7 | 2013 | 1 | 1 |
| 7/1/2013 | 18 | 44484 | 7 | 2013 | 1 | 2 |
| 7/1/2013 | 16 | 44138 | 7 | 2013 | 1 | 3 |
| 7/1/2013 | 19 | 43636 | 7 | 2013 | 1 | 4 |
| 7/2/2013 | 15 | 43214 | 7 | 2013 | 2 | 5 |
| 8/30/2013 | 17 | 44610 | 8 | 2013 | 30 | 1 |
| 8/30/2013 | 16 | 44357 | 8 | 2013 | 30 | 2 |
| 8/30/2013 | 18 | 43918 | 8 | 2013 | 30 | 3 |
| 8/30/2013 | 15 | 43682 | 8 | 2013 | 30 | 4 |
| 8/29/2013 | 17 | 42748 | 8 | 2013 | 29 | 5 |
| 9/6/2013 | 17 | 42855 | 9 | 2013 | 6 | 1 |
| 9/5/2013 | 17 | 42737 | 9 | 2013 | 5 | 2 |
| 9/3/2013 | 17 | 42732 | 9 | 2013 | 3 | 3 |
| 9/4/2013 | 17 | 42684 | 9 | 2013 | 4 | 4 |
| 9/5/2013 | 16 | 42575 | 9 | 2013 | 5 | 5 |
| 10/1/2013 | 20 | 31599 | 10 | 2013 | 1 | 1 |
| 10/7/2013 | 20 | 31408 | 10 | 2013 | 7 | 2 |
| 10/2/2013 | 20 | 31249 | 10 | 2013 | 2 | 3 |
| 10/1/2013 | 17 | 31036 | 10 | 2013 | 1 | 4 |
| 10/1/2013 | 16 | 31013 | 10 | 2013 | 1 | 5 |
| 11/13/2013 | 18 | 30479 | 11 | 2013 | 13 | 1 |
| 11/13/2013 | 19 | 30407 | 11 | 2013 | 13 | 2 |
| 11/14/2013 | 18 | 30354 | 11 | 2013 | 14 | 3 |
| 11/14/2013 | 19 | 30241 | 11 | 2013 | 14 | 4 |
| 11/19/2013 | 19 | 30164 | 11 | 2013 | 19 | 5 |
| 12/9/2013 | 19 | 33444 | 12 | 2013 | 9 | 1 |
| 12/9/2013 | 20 | 33180 | 12 | 2013 | 9 | 2 |
| 12/10/2013 | 19 | 32621 | 12 | 2013 | 10 | 3 |
| 12/9/2013 | 18 | 32554 | 12 | 2013 | 9 | 4 |
| 12/9/2013 | 21 | 32506 | 12 | 2013 | 9 | 5 |
| 1/8/2014 | 19 | 30560 | 1 | 2014 | 8 | 1 |
| 1/9/2014 | 19 | 30202 | 1 | 2014 | 9 | 2 |
| 1/15/2014 | 19 | 30169 | 1 | 2014 | 15 | 3 |
| 1/13/2014 | 19 | 30140 | 1 | 2014 | 13 | 4 |
| 1/14/2014 | 19 | 30075 | 1 | 2014 | 14 | 5 |
| 2/3/2014 | 19 | 29924 | 2 | 2014 | 3 | 1 |
| 2/4/2014 | 19 | 29885 | 2 | 2014 | 4 | 2 |
| 2/4/2014 | 20 | 29644 | 2 | 2014 | 4 | 3 |
| 2/3/2014 | 20 | 29640 | 2 | 2014 | 3 | 4 |
| 2/5/2014 | 19 | 29630 | 2 | 2014 | 5 | 5 |
| 3/5/2014 | 19 | 29097 | 3 | 2014 | 5 | 1 |
| 3/3/2014 | 19 | 28930 | 3 | 2014 | 3 | 2 |
| 3/5/2014 | 20 | 28828 | 3 | 2014 | 5 | 3 |
| 3/3/2014 | 20 | 28814 | 3 | 2014 | 3 | 4 |
| 3/19/2014 | 21 | 28767 | 3 | 2014 | 19 | 5 |
| 4/30/2014 | 17 | 33189 | 4 | 2014 | 30 | 1 |
| 4/30/2014 | 18 | 33168 | 4 | 2014 | 30 | 2 |
| 4/30/2014 | 21 | 32953 | 4 | 2014 | 30 | 3 |
| 4/30/2014 | 16 | 32927 | 4 | 2014 | 30 | 4 |
| 4/30/2014 | 19 | 32769 | 4 | 2014 | 30 | 5 |
| 5/15/2014 | 17 | 41486 | 5 | 2014 | 15 | 1 |
| 5/15/2014 | 18 | 41130 | 5 | 2014 | 15 | 2 |
| 5/15/2014 | 16 | 40949 | 5 | 2014 | 15 | 3 |
| 5/15/2014 | 19 | 40003 | 5 | 2014 | 15 | 4 |
| 5/15/2014 | 15 | 39898 | 5 | 2014 | 15 | 5 |
| 6/30/2014 | 17 | 40324 | 6 | 2014 | 30 | 1 |
| 6/30/2014 | 18 | 40129 | 6 | 2014 | 30 | 2 |
| 6/30/2014 | 16 | 39827 | 6 | 2014 | 30 | 3 |
| 6/9/2014 | 17 | 39674 | 6 | 2014 | 9 | 4 |
| 6/9/2014 | 16 | 39505 | 6 | 2014 | 9 | 5 |
| 7/30/2014 | 17 | 43968 | 7 | 2014 | 30 | 1 |
| 7/31/2014 | 17 | 43872 | 7 | 2014 | 31 | 2 |
| 7/24/2014 | 18 | 43696 | 7 | 2014 | 24 | 3 |
| 7/24/2014 | 17 | 43654 | 7 | 2014 | 24 | 4 |
| 7/30/2014 | 18 | 43592 | 7 | 2014 | 30 | 5 |
| 8/1/2014 | 17 | 43518 | 8 | 2014 | 1 | 1 |
| 8/1/2014 | 16 | 43144 | 8 | 2014 | 1 | 2 |
| 8/1/2014 | 18 | 43048 | 8 | 2014 | 1 | 3 |
| 8/1/2014 | 15 | 42281 | 8 | 2014 | 1 | 4 |
| 8/28/2014 | 17 | 42031 | 8 | 2014 | 28 | 5 |
| 9/15/2014 | 17 | 44671 | 9 | 2014 | 15 | 1 |
| 9/15/2014 | 18 | 44636 | 9 | 2014 | 15 | 2 |
| 9/15/2014 | 16 | 44320 | 9 | 2014 | 15 | 3 |
| 9/15/2014 | 15 | 43845 | 9 | 2014 | 15 | 4 |
| 9/17/2014 | 17 | 43700 | 9 | 2014 | 17 | 5 |
| 10/6/2014 | 17 | 37906 | 10 | 2014 | 6 | 1 |
| 10/3/2014 | 17 | 37749 | 10 | 2014 | 3 | 2 |
| 10/3/2014 | 18 | 37372 | 10 | 2014 | 3 | 3 |
| 10/6/2014 | 16 | 37302 | 10 | 2014 | 6 | 4 |
| 10/3/2014 | 16 | 37223 | 10 | 2014 | 3 | 5 |
| 11/6/2014 | 18 | 30887 | 11 | 2014 | 6 | 1 |
| 11/6/2014 | 19 | 30725 | 11 | 2014 | 6 | 2 |
| 11/5/2014 | 19 | 30167 | 11 | 2014 | 5 | 3 |
| 11/5/2014 | 18 | 30130 | 11 | 2014 | 5 | 4 |
| 11/7/2014 | 18 | 30126 | 11 | 2014 | 7 | 5 |
| 12/15/2014 | 19 | 31607 | 12 | 2014 | 15 | 1 |
| 12/15/2014 | 18 | 31282 | 12 | 2014 | 15 | 2 |
| 12/15/2014 | 20 | 31100 | 12 | 2014 | 15 | 3 |
| 12/16/2014 | 19 | 31097 | 12 | 2014 | 16 | 4 |
| 12/17/2014 | 19 | 31011 | 12 | 2014 | 17 | 5 |
| 1/20/2015 | 19 | 29663 | 1 | 2015 | 20 | 1 |
| 1/15/2015 | 19 | 29588 | 1 | 2015 | 15 | 2 |
| 1/13/2015 | 19 | 29570 | 1 | 2015 | 13 | 3 |
| 1/5/2015 | 19 | 29553 | 1 | 2015 | 5 | 4 |
| 1/22/2015 | 19 | 29502 | 1 | 2015 | 22 | 5 |
| 2/12/2015 | 19 | 30066 | 2 | 2015 | 12 | 1 |
| 2/11/2015 | 19 | 30062 | 2 | 2015 | 11 | 2 |
| 2/11/2015 | 20 | 29538 | 2 | 2015 | 11 | 3 |
| 2/5/2015 | 19 | 29360 | 2 | 2015 | 5 | 4 |
| 2/4/2015 | 19 | 29356 | 2 | 2015 | 4 | 5 |
| 3/26/2015 | 21 | 31089 | 3 | 2015 | 26 | 1 |
| 3/26/2015 | 20 | 31059 | 3 | 2015 | 26 | 2 |
| 3/26/2015 | 18 | 30847 | 3 | 2015 | 26 | 3 |
| 3/27/2015 | 16 | 30761 | 3 | 2015 | 27 | 4 |
| 3/26/2015 | 17 | 30733 | 3 | 2015 | 26 | 5 |
| 4/30/2015 | 17 | 33966 | 4 | 2015 | 30 | 1 |
| 4/30/2015 | 18 | 33962 | 4 | 2015 | 30 | 2 |
| 4/30/2015 | 16 | 33358 | 4 | 2015 | 30 | 3 |
| 4/30/2015 | 19 | 33249 | 4 | 2015 | 30 | 4 |
| 4/30/2015 | 21 | 33055 | 4 | 2015 | 30 | 5 |
| 5/1/2015 | 17 | 33228 | 5 | 2015 | 1 | 1 |
| 5/1/2015 | 16 | 32986 | 5 | 2015 | 1 | 2 |
| 5/1/2015 | 18 | 32957 | 5 | 2015 | 1 | 3 |
| 5/1/2015 | 15 | 32381 | 5 | 2015 | 1 | 4 |
| 5/1/2015 | 19 | 32221 | 5 | 2015 | 1 | 5 |
| 6/30/2015 | 16 | 41914 | 6 | 2015 | 30 | 1 |
| 6/30/2015 | 15 | 41722 | 6 | 2015 | 30 | 2 |
| 6/30/2015 | 17 | 41217 | 6 | 2015 | 30 | 3 |
| 6/30/2015 | 18 | 40643 | 6 | 2015 | 30 | 4 |
| 6/30/2015 | 14 | 40515 | 6 | 2015 | 30 | 5 |
| 7/29/2015 | 17 | 42299 | 7 | 2015 | 29 | 1 |
| 7/29/2015 | 18 | 42208 | 7 | 2015 | 29 | 2 |
| 7/30/2015 | 17 | 41694 | 7 | 2015 | 30 | 3 |
| 7/29/2015 | 16 | 41591 | 7 | 2015 | 29 | 4 |
| 7/29/2015 | 19 | 41584 | 7 | 2015 | 29 | 5 |
| 8/28/2015 | 17 | 46822 | 8 | 2015 | 28 | 1 |
| 8/28/2015 | 16 | 46670 | 8 | 2015 | 28 | 2 |
| 8/28/2015 | 18 | 45966 | 8 | 2015 | 28 | 3 |
| 8/27/2015 | 17 | 45442 | 8 | 2015 | 27 | 4 |
| 8/28/2015 | 15 | 45286 | 8 | 2015 | 28 | 5 |
| 9/10/2015 | 17 | 47252 | 9 | 2015 | 10 | 1 |
| 9/10/2015 | 18 | 46709 | 9 | 2015 | 10 | 2 |
| 9/10/2015 | 16 | 46572 | 9 | 2015 | 10 | 3 |
| 9/9/2015 | 16 | 46040 | 9 | 2015 | 9 | 4 |
| 9/8/2015 | 17 | 45822 | 9 | 2015 | 8 | 5 |
| 10/13/2015 | 17 | 41610 | 10 | 2015 | 13 | 1 |
| 10/13/2015 | 16 | 41156 | 10 | 2015 | 13 | 2 |
| 10/13/2015 | 18 | 40799 | 10 | 2015 | 13 | 3 |
| 10/9/2015 | 17 | 40127 | 10 | 2015 | 9 | 4 |
| 10/13/2015 | 15 | 40004 | 10 | 2015 | 13 | 5 |
| 11/30/2015 | 19 | 30609 | 11 | 2015 | 30 | 1 |
| 11/30/2015 | 20 | 30206 | 11 | 2015 | 30 | 2 |
| 11/30/2015 | 18 | 30166 | 11 | 2015 | 30 | 3 |
| 11/16/2015 | 19 | 29782 | 11 | 2015 | 16 | 4 |
| 11/9/2015 | 19 | 29447 | 11 | 2015 | 9 | 5 |
| 12/15/2015 | 19 | 31678 | 12 | 2015 | 15 | 1 |
| 12/14/2015 | 19 | 31676 | 12 | 2015 | 14 | 2 |
| 12/15/2015 | 20 | 31671 | 12 | 2015 | 15 | 3 |
| 12/16/2015 | 19 | 31651 | 12 | 2015 | 16 | 4 |
| 12/14/2015 | 20 | 31443 | 12 | 2015 | 14 | 5 |

Source: CAISO OASIS system

1. For details, see Resource Adequacy Forecast Adjustment(s) Allocation Methodology. R.14-10-010 Workshop PUC February 9, 2015. [↑](#footnote-ref-1)
2. LSE specific coincidence adjustments were adopted in D. 12-06-025. [↑](#footnote-ref-2)
3. Linked to the RA compliance materials under 2016/Load Forecast: http://www.cpuc.ca.gov/General.aspx?id=6311 [↑](#footnote-ref-3)
4. These adjustments are directed by CPUC Decision (D.) 05-10-042. [↑](#footnote-ref-4)