

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**California Independent System            )            Docket No. ER15-1825-000  
Operator Corporation                        )**

**INFORMATIONAL REPORT OF THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
ON THE FIRST YEAR OF RAAIM NON-AVAILABILITY CHARGE**

The California Independent System Operator Corporation (CAISO) submits this informational filing in compliance with the Commission’s October 1, 2015, order conditionally accepting phase 1A of the two-phase reliability services initiative (RSI phase 1A).<sup>1</sup> As required by the October 1 Order, this filing provides analysis on the impacts and reasonableness of the CAISO’s resource adequacy availability incentive mechanism (RAAIM) price after one year of experience with RAAIM.

**I. Background**

On May 29, 2015, the CAISO filed tariff amendments in this docket to implement RSI phase 1A.<sup>2</sup> A key element of that proposal was the CAISO’s creation of RAAIM, an incentive program for resource adequacy (RA) capacity.<sup>3</sup>

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<sup>1</sup> *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,002, P 52 (2015) (October 1 Order).

<sup>2</sup> *Cal. Indep. Sys. Operator Corp.*, Transmittal Letter, FERC Docket No. ER15-1825 (May 29, 2015) (Phase 1A filing).

<sup>3</sup> RAAIM replaced the standard capacity product, which was a tariff mechanism that assessed the performance of resources providing RA capacity based on whether they were on forced outage. See Phase 1A filing, at 6-7 and 29.

Under RAAIM, the CAISO assesses non-availability charges and makes availability incentive payments on a monthly basis to RA capacity, based on the extent to which resources providing RA meet their must-offer obligations or, alternatively, provide substitute capacity when the resource is on forced outage.<sup>4</sup> If a resource's availability falls below 94.5 percent of its must-offer obligation, it pays a non-availability charge for the month; if its availability exceeds 98.5 percent, it is eligible for an availability incentive payment for the month; and if its availability is between 94.5 and 98.5 percent, it receives neither a RAAIM payment nor a RAAIM charge.<sup>5</sup> Any RAAIM payments or charges the CAISO assesses are separate from any funds exchanged under the bilateral capacity contract between a resource and a load-serving entity.

The CAISO calculates the non-availability charge for a resource based on the difference between its percent availability and the 94.5 percent minimum threshold multiplied by the RAAIM price.<sup>6</sup> The RAAIM price is \$3.79 per kW-month.<sup>7</sup> The availability incentive payments are funded entirely by the assessed non-availability charges.<sup>8</sup> Whatever charges the CAISO assesses in a month are distributed to the resources that exceed the 98.5 percent upper performance threshold in that month, subject to the limitation that the per kW-month rate paid

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<sup>4</sup> The Commission recently accepted a CAISO proposal that would expand application of RAAIM to planned outages. *Cal. Indep. Sys. Operator Corp.*, 162 FERC ¶ 61,042 (2018). That rule change is prospective and does not apply to the period evaluated in this report.

<sup>5</sup> CAISO tariff, section 40.9.6.

<sup>6</sup> CAISO tariff, section 40.9.6.1(a)(1).

<sup>7</sup> Section 40.9.6.1(b) states that “[t]he RAAIM price shall be 60 percent of the CPM Soft-Cap Price . . . .” Tariff section 43A.4.1.1 sets the CPM Soft Offer Cap at \$6.31/kW-month. The resulting RAAIM price is \$3.79/kW-month (*i.e.*, .6 x \$6.31).

<sup>8</sup> CAISO tariff, section 40.9.6.2(a).

to a resource is capped at three times the non-availability charge.<sup>9</sup> This cap prevents a high-performing RA resource from receiving a RAAIM windfall as a result of its performance.

The Phase 1A filing explained that the RAAIM price of \$3.79 per kW-month was set to “balance two principles: (1) it should be high enough to incent resources that will be on outage to replace or substitute their capacity; and (2) it should be low enough not to cause any potential disruption of the resource adequacy market or unduly penalize entities that are receiving lower resource adequacy payments.”<sup>10</sup> The CAISO’s review of the limited RA contracting data that was publicly available, as reflected in the California Public Utilities Commission’s 2012 Resource Adequacy Report, indicated that the proposed RAAIM price fell at the high end of average bilateral capacity prices.<sup>11</sup> The CAISO also explained that a RAAIM price set at a level moderately above the average RA price struck a proper balance between the two identified principles, and, thus, the proposed RAAIM price was within the zone of reasonableness.<sup>12</sup>

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<sup>9</sup> CAISO tariff, section 40.9.6.2(b). Under tariff section 40.9.6.2(d), funds remaining as a result of the cap roll over to the next month, and the CAISO can use the rollover funds to make availability incentive payments for that next month. The funds continue to roll over during a calendar year but at the end of the year any remaining funds are distributed to load-serving entities based on their load ratio share for that year.

<sup>10</sup> Phase 1A filing, at 64.

<sup>11</sup> *Id.*

<sup>12</sup> “The Commission has explained that “the courts and this Commission have recognized that there is not a single just and reasonable rate. Instead, we evaluate [proposals submitted under section 205 of the Federal Power Act] to determine whether they fall into a zone of reasonableness. So long as the end result is just and reasonable, the [proposal] will satisfy the statutory standard.” *Calpine Corp. v. Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,271, at P 41 (2009) (citations omitted). See also *New England Power Co.*, 52 FERC ¶ 61,090, at 61,336 (1990), *aff’d sub nom. Town of Norwood v. FERC*, 962 F.2d 20 (D.C. Cir. 1992), citing *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984) (rate design proposed need not be perfect, it merely needs to be just and reasonable).

In the RSI Phase 1A proceeding and the underlying stakeholder initiative, parties raised concerns about the price level; some argued it was too high and some that it was too low. Partially in response to these concerns, the CAISO committed to review the RAIM price after a year of experience with it and report to the CAISO Board of Governors on its conclusions.<sup>13</sup> Following up on that commitment, some parties argued that if the Commission accepted the proposed charge, then the CAISO should be required to submit an informational report to the Commission on the same issue. In its answer to comments and protest, the CAISO indicated its willingness to make such a report to the Commission.<sup>14</sup>

The October 1 Order accepted the CAISO's proposed RAIM price<sup>15</sup> and required the CAISO to submit an informational report "review[ing] the effectiveness of the new level of non-availability charge and any potential impact on resource adequacy contracting" and submit it "12 months following implementation of the non-availability charge."<sup>16</sup> The Commission made clear that the report would "be for informational purposes only and will not be noticed for comment or subject to Commission order."<sup>17</sup>

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<sup>13</sup> Phase 1A filing, at 73.

<sup>14</sup> *Cal. Indep. Sys. Operator Corp.*, Motion for Leave to Answer and Answer, at 25, FERC Docket No. ER18-728 (July 7, 2015) (The CAISO is willing to "submit an informational filing after the price has been [in] effect for a year that shows the impacts and reasonableness of the RAIM price.").

<sup>15</sup> October 1 Order, at PP 50 and 51.

<sup>16</sup> October 1 Order, at P 52.

<sup>17</sup> October 1 Order, at P 52 n.53.

Although RAAIM went into effect on November 1, 2016, for five months thereafter (*i.e.*, until April 1, 2017), the CAISO calculated non-availability charges and availability incentive payments for advisory purposes only.<sup>18</sup> As explained in a recent tariff amendment filing, the CAISO understood the April 1, 2017, start of binding RAAIM charges and payments as the beginning of the one-year period for purposes of making its informational report.<sup>19</sup> The CAISO now makes this informational filing.

## **II. Report and Analysis**

The information available to the CAISO suggests the \$3.79 per kW-month RAAIM price (which serves as the basis of non-availability charges) remains within the zone of reasonableness. The current price appears to have functioned reasonably well at balancing the need to be high enough to incentivize resources to provide substitute capacity and the need to be low enough not to disrupt the bilateral RA market or unduly penalize resources receiving lower RA payments. The CAISO has reached its conclusion after considering:

- a. The CPUC's 2016 annual RA report, which is the most current report available;
- b. RA capacity availability under RAAIM; and
- c. Non-availability charges assessed and availability incentive

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<sup>18</sup> Tariff section 40.9.1 states that the advisory period will be two months (*i.e.*, it would last until January 1, 2017, given implementation of RAAIM on November 1, 2016). The Commission later granted a CAISO petition for limited tariff waiver that extended the advisory period by an additional three months. *Cal. Indep. Sys. Operator Corp.*, 158 FERC ¶ 61,108 (2017).

<sup>19</sup> *Cal. Indep. Sys. Operator Corp.*, Transmittal Letter, at 15 n.52, FERC Docket No. ER18-728 (Jan. 29, 2018).

payments made under RAAIM.

**A. Analysis of 2016 CPUC Annual RA Report**

As was the case in 2015 (when the CAISO made the Phase 1A filing), the CAISO “does not have access to the prices paid under individual resource adequacy contracts.”<sup>20</sup> In determining a just and reasonable RAAIM price in the RSI Phase 1A stakeholder process, the CAISO instead analyzed aggregated RA contract prices based on a limited subset of resource adequacy contracts. The CAISO obtained these prices from the California Public Utilities Commission’s 2012 Resource Adequacy Report, which was the most current CPUC RA report available at that time.<sup>21</sup> The most recent report available now is the 2016 annual RA report. As discussed below, the average contract prices reported in the 2012 report, which were the basis of the Phase 1A filing, do not differ substantially from the average contract prices reported in the CPUC’s 2016 RA report.<sup>22</sup> This general lack of movement in RA contract prices suggests that the RAAIM price remains within the zone of reasonableness. In particular, comparing aggregated data from the 2012 CPUC RA report (which supported the Phase 1A filing) and the 2016 CPUC RA report suggests the RAAIM price remains sufficiently low so as not to penalize RA capacity that was contracted at the lower-end of the wide price spectrum.

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<sup>20</sup> Phase 1A filing, at 64.

<sup>21</sup> *Id.* at 64-66. See also *Cal. Indep. Sys. Operator Corp.*, Transmittal Letter, at 26 n.50, FERC Docket No. ER18-1 (Sep. 29, 2017) (citing the 2016 annual CPUC RA report and noting “that the data provided in the report is limited, but it is the only cost data available to the CAISO.”).

<sup>22</sup> The CPUC’s 2016 Annual RA report is available on the RA portion of the CPUC’s website, at <http://www.cpuc.ca.gov/RA/>.

The limited data available to the CAISO continues to show a broad range of RA prices. For RA years 2012-2016, the 2012 report showed RA prices ranged from \$0.08 per kW-month to \$26.54 per kW-month.<sup>23</sup> The 2016 report shows similar price dispersion, with prices for the 2016-2020 RA years running from \$0.15 per kW-month to \$26.54 per kW-month.<sup>24</sup> Within that broad range, the 2012 report identified a weighted average price for all reported capacity contracts of \$3.28 per kW-month for RA years 2012-2016.<sup>25</sup> The 2016 report identifies an average price of \$3.10 per kW-month for RA years 2016-2020.<sup>26</sup> This reflects a modest decrease of 5.5 percent in the overall reported average capacity price.<sup>27</sup> Because RAIM is supposed to incentivize future behavior, examining data from the furthest out year with reported data (rather than stale data reflecting more historical periods) can also be instructive. The 2012 report reflects a weighted average price of \$2.95/kW-month for 2016, and the 2016 report reflects a weighted average price of \$2.96 for 2017.<sup>28</sup> This represents a change in the weighted average price for the “out year” of only .34 percent.<sup>29</sup>

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<sup>23</sup> CPUC 2012 Annual RA report, at 24 Table 11.

<sup>24</sup> CPUC 2016 Annual RA report, at 23 Table 7.

<sup>25</sup> CPUC 2012 Annual RA report, at 24 Table 11.

<sup>26</sup> CPUC 2016 Annual RA report, at 23 Table 7.

<sup>27</sup>  $|(\$3.28 - \$3.10)| / (\$3.28) = 5.49\%$

<sup>28</sup> The CPUC states in the 2016 report that “[t]o protect confidentiality, the price from 2018-2020 cannot be published” in the report. CPUC 2016 Annual RA report, at 22 n.26.

<sup>29</sup>  $|(\$2.95 - \$2.96)| / (\$2.95) = 0.34\%$

Another data point is the 85<sup>th</sup> percentile price reflected in the RA report. The 2012 report showed that the overall 85<sup>th</sup> percentile price for the five-year reporting period was \$6.46 per kW-month,<sup>30</sup> whereas that same figure in the 2016 report was \$4.19 per kW-month.<sup>31</sup> This reflects a decline of 31 percent in the 85<sup>th</sup> percentile price for the overall five-year reporting period.<sup>32</sup> However, comparing the 85<sup>th</sup> percentile prices in the latest single year reported in the 2012 and 2016 shows that the weighted average 85<sup>th</sup> percentile price shifted from \$4.01<sup>33</sup> to \$4.34,<sup>34</sup> a change of only 8 percent.<sup>35</sup> Based on this data, the \$3.79 RAIM price should continue to serve as a strong incentive for RA resources to perform and provide substitute capacity when they go on forced outage.

#### **B. Capacity Availability Trends Under RAIM**

In setting a four-percent availability performance band (between 94.5 percent and 98.5 percent), the CAISO implicitly indicated its expectation that RA capacity will perform within that band. The CAISO also implicitly indicated that availability below 94.5 percent reflects less-than-acceptable performance that merits non-availability charges. One reflection of how well the RAIM price has incentivized RA capacity to perform within acceptable standards is to evaluate what percent of non-exempt capacity shown in each month performed: (a) below the lower 94.5 percent threshold; (b) within the performance band; and (c) above

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<sup>30</sup> CPUC 2012 Annual RA report, at 24 Table 11.

<sup>31</sup> CPUC 2016 Annual RA report, at 23 Table 7.

<sup>32</sup>  $|(\$6.10 - \$4.19)| / (\$6.10) = 31.31\%$

<sup>33</sup> CPUC 2012 Annual RA report, at 23 Table 10.

<sup>34</sup> CPUC 2016 Annual RA report, at 22 Table 6.

<sup>35</sup>  $|(\$4.01 - \$4.34)| / (\$4.01) = 8.23\%$



the upper 98.5 percent threshold. This information is provided in Table 1, below.

**Table 1**

**Monthly Availability of RA Capacity Not Exempt from RAIM During Availability Assessment Hours**

<b>Month</b>	<b>Below Threshold</b>	<b>Within Threshold</b>	<b>Above Threshold</b>	<b>Total Non-Exempt MWh</b>
Apr. 2017	7.2%	91.8%	1.0%	13,335
May 2017	1.9%	97.2%	0.9%	13,881
Jun. 2017	3.5%	95.8%	0.7%	18,360
Jul. 2017	1.6%	97.5%	0.8%	21,262
Aug. 2017	33.1%	66.9%	0.0%	23,721
Sept. 2017	1.4%	97.8%	0.8%	20,014
Oct. 2017	1.1%	98.0%	0.9%	16,315
Nov. 2017	2.3%	96.8%	0.9%	17,044
Dec. 2017	2.1%	97.0%	1.0%	18,556
Jan. 2018	1.2%	97.8%	1.0%	18,063
Feb. 2018	2.0%	97.2%	0.8%	17,076
<i>Mean Monthly Value</i>	5.2%	94.0%	0.8%	17,966
<i>Weighted Mean Value</i>	6.0%	93.2%	0.8%	N/A
<i>High Monthly Value</i>	33.1%	98.0%	1.0%	23,721
<i>Low Monthly Value</i>	1.1%	66.9%	0.0%	13,335

Gray Shaded months (June 2017-Sept. 2017) to be recalculated on the T+9M recalculation settlement statement and are subject to change.

The data in Table 1 indicate RA capacity generally has performed within expected parameters. Across the 11 months for which data is available, six percent of non-exempt RA capacity was available below the minimum threshold,<sup>36</sup> with the 93.2 percent available within the four-percent performance

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<sup>36</sup> This overall figure of six percent includes the 33.1 percent unavailability for August 2017. Based on issues with the software code, the CAISO expects that this outlier value will fall significantly once the T+9M recalculations are processed and published on June 11, 2018. June, July, and September, are also subject to recalculation, but the CAISO does not anticipate significant changes to those values. The CAISO includes the August 2017 values in its overall

band and .8 percent exceeding the threshold (and thus eligible for incentive payments). With 94 percent of non-exempt RA capacity meeting minimum availability standards, experience suggests that the RAIM price is set high enough to incentivize performance.

### **C. Charges Assessed and Payments Made Under RAIM**

Another way to understand whether RAIM non-availability charges have penalized participants unduly is to review RAIM payments and charges relative to how much non-RAIM-exempt capacity was compensated through the bilateral market. As indicated above, the CAISO does not have resource-specific compensation data. It can, however, estimate that compensation using the weighted-average capacity price for 2017 provided in the CPUC's 2016 RA report and multiplying that price by the number of non-RAIM-exempt MWs shown for a given month.<sup>37</sup> This information is presented in Table 2, below.

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figure in the interests of providing conservative analysis.

<sup>37</sup> CPUC 2016 Annual RA report, at 22 Table 6.

**Table 2**

**Monthly Non-Availability Charges and Availability Incentive Payments**

<b>Month</b>	<b>Non-Availability Charges</b>	<b>Availability Incentive Payments</b>	<b>Compensation for Non-Exempt Capacity (est.)</b>	<b>Charges as Percent of Comp.</b>	<b>Payments as Percent of Comp.</b>
Apr. 2017	\$3,641,392	\$1,483,548	\$39,472,399	9.23%	3.76%
May 2017	\$1,017,191	\$1,017,191	\$41,086,475	2.48%	2.48%
Jun. 2017	\$2,426,279	\$1,422,549	\$54,346,515	4.46%	2.62%
Jul. 2017	\$1,298,826	\$1,298,826	\$62,935,111	2.06%	2.06%
Aug. 2017	\$29,701,024	\$19,051	\$70,213,288	42.30%	0.03%
Sept. 2017	\$1,055,396	\$1,055,396	\$59,240,007	1.78%	1.78%
Oct. 2017	\$690,037	\$690,037	\$48,293,247	1.43%	1.43%
Nov. 2017	\$1,483,755	\$1,483,755	\$50,450,703	2.94%	2.94%
Dec. 2017	\$1,678,959	\$1,678,959	\$54,926,969	3.06%	3.06%
Jan. 2018	\$911,516	\$911,516	\$53,467,624	1.70%	1.70%
Feb. 2018	\$1,278,617	\$1,278,617	\$50,544,581	2.53%	2.53%
<i>Total</i>	<i>\$45,182,993</i>	<i>\$12,339,445</i>	<i>\$584,976,917</i>	<i>7.72%</i>	<i>2.11%</i>
<i>Mean Monthly Value</i>	<i>\$4,107,545</i>	<i>\$1,121,768</i>	<i>\$53,179,720</i>	<i>6.72%</i>	<i>2.22%</i>
<i>High Monthly Value</i>	<i>\$29,701,024</i>	<i>\$1,678,959</i>	<i>\$70,213,288</i>	<i>42.30%</i>	<i>3.76%</i>
<i>Low Monthly Value</i>	<i>\$690,037</i>	<i>\$19,051</i>	<i>\$39,472,399</i>	<i>1.43%</i>	<i>0.03%</i>

Gray Shaded months (June 2017-Sept. 2017) to be recalculated on the T+9M recalculation settlement statement and are subject to change.

The data in Table 2 indicate RAIM charges and payments across the 11 months for which data is available have been moderate.<sup>38</sup> The average total monthly charges have been \$4.1 million compared to average monthly estimated compensation of \$53 million. Thus, based on the data available to the CAISO, the CAISO estimates that 7.72 percent of bilateral RA compensation has been

<sup>38</sup> Again, the overall numbers include values for August 2017 and thus overstate the overall extent of RAIM charges.

subject to RAAIM charges. With less than 8 percent of RA compensation being clawed back through RAAIM, this data is consistent with the intent for RAAIM to act as a carrot and stick for RA performance but otherwise not fundamentally alter the nature of RA compensation.

#### **D. Limitations of Analysis**

One caveat to the CAISO's analysis is that the CAISO tariff exempts certain types of RA capacity from RAAIM.<sup>39</sup> The Phase 1A filing discussed the justifications for these various exemptions,<sup>40</sup> and the Commission accepted them as just and reasonable. However, to the degree RA capacity is exempt from RAAIM, there will be no direct connection between the RAAIM price and the exempt capacity's performance.

Table 3, below, provides information by month on what percent of RA capacity shown for both generic RA (system and local) and flexible RA was provided from RAAIM-exempt RA capacity. The table reflects that across the 11 months for which data is available, 30 percent of RA capacity shown as generic RA was RAAIM-exempt and 23 percent of flexible RA capacity was RAAIM-exempt. For generic RA, June 2017 had the highest percent of RAAIM-exempt capacity, with 38 percent, and November 2017 had the lowest percent of RAAIM-exempt capacity, with 21 percent. July 2017 had the highest percent of RAAIM-exempt flexible RA capacity, with 30 percent, and December 2017 had the lowest percent of RAAIM-exempt flexible RA capacity, with 19 percent.<sup>41</sup>

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<sup>39</sup> CAISO tariff, section 40.9.2.

<sup>40</sup> Phase 1A filing, at 74-83.

<sup>41</sup> Table 1 reflects that January 2018 also had 19 percent of shown flexible RA capacity

**Table 3****Generic RA Capacity Disaggregated Between RAIM-Exempt and Non-Exempt MWs**

<b>Month</b>	<b>Required MWs</b>	<b>Shown MWs</b>	<b>Exempt MWs Shown</b>	<b>Exempt as % of Shown MWs</b>	<b>Non-Exempt as % of Shown MWs</b>
Apr. 2017	32,001	33,616	12,652	38%	62%
May 2017	34,960	36,293	12,755	35%	65%
Jun. 2017	39,928	41,036	15,433	38%	62%
Jul. 2017	45,160	46,281	14,543	31%	69%
Aug. 2017	48,873	49,398	15,299	31%	69%
Sept. 2017	44,889	45,660	14,370	31%	69%
Oct. 2017	38,100	38,785	11,698	30%	70%
Nov. 2017	33,613	34,733	7,292	21%	79%
Dec. 2017	34,021	35,296	7,617	22%	78%
Jan. 2018	31,804	31,898	7,840	25%	75%
Feb. 2018	30,287	30,242	7,557	25%	75%
<i>11-month Total</i>	<i>413,638</i>	<i>423,238</i>	<i>127,057</i>	<i>30%</i>	<i>70%</i>
<i>11-month High</i>	<i>48,873</i>	<i>49,398</i>	<i>15,433</i>	<i>38%</i>	<i>79%</i>
<i>11-month Low</i>	<i>30,287</i>	<i>30,242</i>	<i>7,292</i>	<i>21%</i>	<i>62%</i>

**Flexible RA Capacity Disaggregated Between RAIM-Exempt and Non-Exempt MWs**

<b>Month</b>	<b>Required MWs</b>	<b>Shown MWs</b>	<b>Exempt MWs Shown</b>	<b>Exempt as % of Shown MWs</b>	<b>Non-Exempt as % of Shown MWs</b>
Apr. 2017	12,779	13,399	3,380	25%	75%
May 2017	11,981	12,406	2,850	23%	77%
Jun. 2017	10,636	11,213	2,597	23%	77%
Jul. 2017	9,720	10,449	3,118	30%	70%
Aug. 2017	9,640	10,338	2,578	25%	75%
Sept. 2017	11,098	11,732	3,020	26%	74%
Oct. 2017	11,181	11,824	2,511	21%	79%
Nov. 2017	14,722	15,235	3,218	21%	79%
Dec. 2017	14,621	15,412	2,875	19%	81%
Jan. 2018	12,869	13,554	2,609	19%	81%
Feb. 2018	13,643	14,117	2,801	20%	80%
<i>11-month Total</i>	<i>132,890</i>	<i>139,679</i>	<i>31,557</i>	<i>23%</i>	<i>77%</i>
<i>11-month High</i>	<i>14,722</i>	<i>15,412</i>	<i>3,380</i>	<i>30%</i>	<i>81%</i>
<i>11-month Low</i>	<i>9,640</i>	<i>10,338</i>	<i>2,511</i>	<i>19%</i>	<i>70%</i>

exempt from RAIM. The table, however, presents rounded figures and the percentage for December is slightly lower than that for January.

### III. Conclusion

The CAISO respectfully requests that the Commission accept this filing as complying with the requirement in the October 1 order that the CAISO make an informational report analyzing the impacts and reasonableness of the RAAIM price after one year of experience with RAAIM. The data presented herein suggests that the RAAIM price remains in the zone of reasonableness and has adequately balanced the goals of being high enough to incent performance and low enough not to penalize under-performing capacity unduly.

Respectfully submitted,

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Dated: April 2, 2018

## CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California, this 2<sup>nd</sup> day of April, 2018.

*/s/ Grace Clark*  
Grace Clark