

October 11, 2019

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket No. ER20-\_\_\_\_-000**

**Tariff Amendment to Alter Real-Time Market Bid Generation for  
Imported Resource Adequacy Capacity**

**Request for Waiver of the Notice Requirement**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) proposes to modify its tariff provisions regarding automated bid generation in the real-time market for non-resource-specific system resources providing resource adequacy capacity (NRS-RA resources).<sup>1</sup> The CAISO submits economic bids on behalf of resources providing resource adequacy (RA) capacity that do not meet their RA must-offer obligation. For NRS-RA resources, the CAISO tariff requires the CAISO to generate a bid in the real-time market up to the resource's full RA capacity whenever the resource has a non-zero award in the day-ahead market. As implemented, however, the CAISO generates a self-schedule for NRS-RA resources in the real-time market up to the quantity of the day-ahead award. The CAISO has concluded that the approach it implemented is preferable to the approach specified in the tariff and now proposes to align the tariff with its longstanding practice.

The CAISO respectfully requests that the Commission issue an order accepting the proposed revisions by December 11, 2019, with an effective date for the revisions of October 12, 2019. The CAISO respectfully requests that the Commission waive the notice requirement provided in the Commission's regulations to facilitate this effective date.

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<sup>1</sup> The CAISO submits this filing pursuant to section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Part 35 of the Commission's Regulations, 18 C.F.R. Part 35.

## **I. Background**

### **A. What are Non-Resource-Specific System Resources?**

California's RA program, which the CAISO administers jointly with the California Public Utilities Commission and other local regulatory authorities in the CAISO balancing authority area, seeks to secure sufficient capacity when and where needed to support the safe and reliable operation of the CAISO grid. Some of that capacity is provided from resources outside the CAISO's balancing authority area. These imports are known as "system resources." System resources can be tied to a single generation resource or a group of generation resources. Where a group of resources provides the capacity, the CAISO's systems model that imported capacity as a single resource at a given intertie and the CAISO assigns it a single resource identification number. This is an NRS-RA resource.

### **B. History of Bid Generation for Non-Resource-Specific System Resources**

Since the start of the CAISO's nodal market in 2009, the CAISO has submitted bids on behalf of resources providing RA capacity that do not meet their RA must-offer obligation. A generated bid helps ensure that the CAISO market will still have access to energy from an RA resource even when that RA resource has failed to bid as required. The CAISO initially did not have tariff authority to generate bids for NRS-RA resources. In 2011, the Commission accepted a CAISO proposal to expand bid generation authority to cover NRS-RA resources.<sup>2</sup>

As part of the proposal, the CAISO added the following as section 40.6.8.1.5 of the tariff: "If a Scheduling Coordinator for a non-Resource-Specific System Resource that provides Resource Adequacy Capacity submits a bid for a MW quantity less than the Resource Adequacy Capacity identified in the resource's Supply Plan, the CAISO will insert a Generated Bid only for the remaining Resource Adequacy Capacity . . . ."

The CAISO implemented this tariff provision so in the day-ahead market it would generate bids for NRS-RA resources up to the full RA amount. In the real-time market the CAISO generated no economic bids for NRS-RA resources. Instead, it created a self-schedule to match the quantity of the day-ahead market award. The CAISO inserted this automated self-schedule in accordance with generally applicable bid insertion rules pursuant to tariff section 30. Under these rules, regardless of a resource's RA status, the CAISO inserts a self-schedule in the real-time market to match the day-ahead market award if the resource does not rebid its day-ahead award.

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<sup>2</sup> *Cal. Indep. Sys. Operator Corp.*, 136 FERC ¶ 61,238 (2011).

### **C. Tariff Changes from the Reliability Services Initiative**

As part of the Reliability Services Initiative, the CAISO amended the tariff to require it to generate bids for NRS-RA resources in the real-time up to the full RA quantity if there was any day-ahead award.<sup>3</sup> This change was made through the new section 40.6.8(f), which stated that the CAISO “will submit a Generated Bid in the Day-Ahead Market or Real-Time Market for a non-Resource Specific System Resource in each RAIM assessment hour, to the extent that the resource provides Resource Adequacy Capacity subject to the requirements of Sections 40.6.1 or 40.6.2 and does not submit an outage request or Bid for the entire amount of that Resource Adequacy Capacity.” Unlike the prior bid generation provision in section 40.6.8.1.5 (which did not address whether submitting bids only for the day-ahead market would avoid bid generation), the new tariff provision directly called for the CAISO to generate bids for NRS-RA resources whenever the resource failed to meet the must-offer obligation for either the day-ahead market (section 40.6.1) or the real-time market (section 40.6.2).<sup>4</sup>

Following discussion with a market participant, the CAISO recently identified that when these tariff amendments became effective it did not alter its systems to match the changed NRS-RA resource bid generation rules. Thus, the CAISO has only been generating a self-schedule for NRS-RA resources in the real-time market up to the quantity of the day-ahead award. Investigating this matter led the CAISO to reassess whether the specific rule in section 40.6.8(f) was the proper approach. The CAISO concluded that the current practice represents a better policy than the specific tariff requirement and decided to amend tariff section 40.6.8(f) to align it with current practice.

## **II. Proposed Tariff Revisions**

### **A. Bid Generation for Non-Resource-Specific System Resources**

Through this filing, the CAISO proposes to amend its tariff to remove bid generation for NRS-RA resources in the real-time market. Specifically, the CAISO proposes these modifications to section 40.6.8(f) of its tariff (changes highlighted in red):

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<sup>3</sup> *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,002 (2015). These tariff provisions became effective in 2016.

<sup>4</sup> The Reliability Services Initiative did not change NRS-RA resource’s day-ahead or real-time market must-offer obligations. The basic day-ahead market obligation is that “Resource Adequacy Resources physically capable of operating must Submit . . . Economic Bids for Energy and/or Self-Schedules for all their Resource Adequacy Capacity . . .” Section 40.6.1(1). The basic real-time market obligation is that “Resource Adequacy Resources that have received an IFM Schedule for Energy or Ancillary Services or a RUC Schedule for all or part of their Resource Adequacy Capacity must remain available to the CAISO through Real-Time for Trading Hours for which they receive an IFM or RUC Schedule, including any Resource Adequacy Capacity of such resources that is not included in an IFM Schedule or RUC Schedule . . .” Section 40.6.2(a).

- (f) **NRS-RA Resources.** The CAISO will submit a Generated Bid in the Day-Ahead Market ~~or Real-Time Market~~ for a non-Resource Specific System Resource in each RAAIM assessment hour, to the extent that the resource provides Resource Adequacy Capacity subject to the requirements of Sections 40.6.1 ~~or 40.6.2~~ and does not submit an outage request or Bid for the entire amount of that Resource Adequacy Capacity. Aside from where the generally applicable bidding rules in Section 30 call for Bid insertion, the CAISO will not submit a Generated Bid in the Real-Time Market for a Non-Resource-Specific System Resource that fails to meet its bidding obligations under Section 40.6.2. A Bid inserted for the Real-Time Market pursuant to the generally applicable bidding rules in Section 30 may not necessarily cover the full Real-Time Market obligation under Section 40.6.2 and the resource may thus remain exposed to Non-Availability Charges.

The proposed amendments match market participants' current expectations of how the CAISO implements its longstanding bid generation authority for NRS-RA resources. Second, the CAISO's current RA Enhancements stakeholder initiative is exploring comprehensive changes to the RA tariff provisions, including the rules for import RA.<sup>5</sup> The California Public Utilities Commission is also directly considering what rules should govern its approval of import RA contracts entered into by its jurisdictional load serving entities.<sup>6</sup> While the CAISO and the California Public Utilities Commission are exploring broader reforms to rules on how external resources can provide RA capacity, it is prudent to maintain the status quo for NRS-RA bid generation. Third, the CAISO has not identified any adverse market or reliability consequences tied to the existing practice, which has been in place since 2011. Fourth, the CAISO is concerned that making a change could create unintended market and system impacts. A real-time market award to an NRS-RA resource created from a generated bid could mean that the CAISO is relying on energy from resources that are unable to secure transmission or otherwise are unable to deliver the incremental energy to the CAISO. If the energy awarded from generated bids does not arrive in the operational timeframe, the CAISO would have to take out-of-market actions, such as issuing exceptional dispatches, to plug the hole left by the undelivered import RA. The CAISO can avoid this outcome by awarding that energy to internal resources or to other import resources that have inserted their own real-time bids. The energy awarded to those alternate resources through the market likely will be less expensive than the costs of the exceptional

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<sup>5</sup> Details of the RA Enhancements initiative are available at: <http://www.aiso.com/informed/Pages/StakeholderProcesses/ResourceAdequacyEnhancements.aspx>.

<sup>6</sup> California Public Utilities Commission, Assigned Commissioner's Ruling Seeking Comment on Clarification to Resource Adequacy Import Rules, Proceeding No. R.17-09-020 (Jul. 3, 2019).

dispatch.

## **B. Clarifying the Obligation to “Remain Available” Through Real-Time**

Tariff section 40.6.2 defines the real-time market bidding requirements for RA resources. The tariff states that RA resources have a general requirement to “remain available to the CAISO through Real Time”<sup>7</sup> and that the short start and medium start units “must be available to the CAISO through Real-Time.”<sup>8</sup> As implemented, this availability obligation requires resources to submit a self-schedule or economic bid for the required quantity in the real-time market. Short start and medium start units must cover their full RA quantity irrespective of their day-ahead market award, and other resources must cover their full RA capacity so long as there is a non-zero day-ahead market award.

At least one stakeholder has argued that this tariff language is ambiguous. The general obligation to “remain available” could be interpreted to mean merely that the unit be ready to respond to exceptional dispatch or not take an outage. To eliminate this ambiguity the CAISO proposes to amend sub-sections (a) and (b) of section 40.6.2 to state that for resources covered by those sub-sections the real-time market obligation matches the day-ahead market obligation defined in section 40.6.1.<sup>9</sup> Section 40.6.1 has more precise definitions of the bidding obligations than the current version of section 40.6.2. Rather than restating those obligations in two places, the CAISO created an internal cross-reference.

## **IV. Stakeholder Engagement**

On August 14, 2019, the CAISO issued a market notice informing stakeholders of its intent to pursue this filing.<sup>10</sup> The CAISO followed the market notice with a stakeholder web conference on August 21, 2019, through which the CAISO described the proposed tariff amendments and provided the rationale for the amendments.<sup>11</sup> The CAISO then provided a two-week comment period. Two parties provided written

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<sup>7</sup> CAISO tariff, section 40.6.2(a).

<sup>8</sup> CAISO tariff, section 40.6.2(b).

<sup>9</sup> The one exception in the proposed amendments to section 40.6.2 is “that any reference in Section 40.6.1 to RUC bidding does not apply” for the real-time market. Section 40.6.1 states that RA resources “must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in an IFM Schedule.” RA resources cannot submit RUC bids to the real-time market because RUC is only part of the day-ahead market. The exception is thus necessary to avoid creating a requirement with which RA resources cannot comply.

<sup>10</sup> The market notice is available at: <http://www.aiso.com/Documents/Real-TimeBidInsertion-Non-Resource-SpecificSystemResourcesProvidingResourceAdequacyTariffClarificationCall8-21-19.html>.

<sup>11</sup> The stakeholder presentation is available at: <http://www.aiso.com/Documents/Presentation-Non-Resource-SpecificResourceAdequacyImportResourceBidInsertion-Aug212019.pdf>.

comments. Neither party expressed concern or questioned the CAISO's conclusion that it was appropriate to maintain the status quo on real-time market bid generation for NRS-RA resources. Instead, the written comments were limited to clarifying questions and suggestions for the CAISO to make broader changes to existing must-offer obligations or the Resource Adequacy Availability Incentive Mechanism (RAAIM).

One party asked the CAISO to clarify three points. First, this party wanted a clear statement whether an NRS-RA resource will be treated as 100% available in the real-time market for purposes of RAAIM if it relies on the CAISO-inserted self-schedule for the real-time instead of submitting its own bids up to its shown RA capacity. The CAISO clarifies that such a resource will not be treated as 100% available in the real-time market, unless it has no day-ahead market award (in which case it would have no real-time market bidding obligation) or its day-ahead market award was at or above its shown RA capacity (in which case the inserted self-schedule would cover the real-time market obligation). A scheduling coordinator for an NRS-RA resource that relies on CAISO bid generation to avoid RAAIM has faced, and will continue to face, RAAIM exposure if they do not comply with their RA must-offer obligation. The last sentence in the proposed edits to section 40.6.8(f) puts market participants on notice of this fact.

Second, this party wanted the CAISO to confirm that the changes proposed in subsections (a) and (b) of section 40.6.2 would not influence any existing exemptions from the RUC must-offer obligation.<sup>12</sup> The CAISO confirms that the proposed changes in those sections do not affect any resource's current RUC obligations.

Third, this party wanted the CAISO to confirm that none of the proposed amendments would change the existing RA treatment, established in section 40.6.4.3, for participating load that is pumping load. The CAISO confirms it is not proposing to amend this tariff provision, and none of the proposed amendments would affect such resources currently covered by that section.

Another party agreed with the proposed changes to the bid generation rules but suggested that the CAISO should change the real-time must-offer obligation and RAAIM exposure to match the bid generation such that an NRS-RA resource only would be obligated to bid its day-ahead schedule in real-time. The CAISO understands the desire to limit exposure to RAAIM charges, but such changes are beyond the narrow scope of this filing and involve different tariff provisions. The CAISO has no intention through this filing to change NRS-RA resources' real-time market must-offer obligation; they have been, and will continue to be, obligated to bid their entire RA capacity into the real-time market if there is any day-ahead market award for a given hour. Any change to this must-offer obligation

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<sup>12</sup> This written comment referred to an existing RUC must-offer exemption for use-limited resources, such as hydro resources. The phrasing of this question bears clarification. Use-limited resources hold no RUC must-offer exemption and hydro resources, furthermore, are not automatically use-limited resources. Hydro resources providing RA capacity that cannot qualify as use-limited resources are, however, exempt from providing RUC availability bids pursuant to section 40.6.4.2.

is a broader change to underlying RA policy that should be considered as part of a comprehensive evaluation of the RA program. That evaluation is happening as part of the CAISO's RA Enhancements stakeholder initiative.

#### **IV. Effective Date and Tariff Records**

The CAISO respectfully requests that the Commission issue an order accepting the proposed revisions by December 11, 2019, with an effective date for the revisions of October 12, 2019. The CAISO respectfully requests that the Commission waive the notice requirement provided in the Commission's regulations to allow for this effective date.<sup>13</sup> Good cause exists for this request because immediate effectiveness will allow the CAISO to mitigate any further potential tariff non-compliance concerns and will provide beneficial certainty for market participants. Because the CAISO intends to maintain the status quo on implementation, the Commission's granting of the waiver will not have any harmful effects on market participants.

Although this filing only proposes amendments to sub-section (f) of section 40.6.8, the eTariff record of which this sub-section is a part also includes interim tariff provisions set to expire on December 31, 2019, and tariff revisions that are pending Commission acceptance in Commission Docket No. ER19-2727. As a result, this filing includes three versions of tariff records for section 40.6.8. The first version would go into effect October 12, 2019, assuming the Commission approves this filing. The second version would go into effect no later than December 11, 2019, assuming that the Commission approves the CAISO's filing in Docket No. ER19-2727. Within the eTariff system, this second version initially will have a listed effective date of December 31, 9998, and the CAISO would then notify the Commission through a Code 150 filing of the actual effective date. The third version would go into effect when the interim tariff provisions expire on December 31, 2019. This version would remove the expired provisions but maintain the provisions proposed through this filing and those from Docket No. ER19-2727.

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<sup>13</sup> Specifically, pursuant to section 35.11 of the Commission's regulations (18 C.F.R. § 35.11), the CAISO requests waiver of the notice requirements set forth in section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1).

## **VI. Communications**

Under Rule 203(b)(3),<sup>14</sup> the CAISO respectfully requests that all correspondence and other communications about this filing be served upon:

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## **VII. Service**

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of the filing on the CAISO website.

## **VIII. Contents of Filing**

Besides this transmittal letter, this filing includes these attachments:

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|--------------|--|
| Attachment A | Clean CAISO tariff sheets incorporating this tariff amendment; and |
| Attachment B | Red-lined document showing the revisions in this tariff amendment. |

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<sup>14</sup> 18 C.F.R. § 385.203(b)(3).

**IX. Conclusion**

For the reasons set forth in this filing, the CAISO respectfully requests that the Commission issue an order accepting the tariff revisions in this filing effective October 12, 2019, and with an order by December 11, 2019.

Respectfully submitted,

***/s/ David S. Zlotlow*** \_\_\_\_\_

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**Attachment A – Clean Tariff**

**Alteration to Real-Time Market Bid Generation for Imported Resource Adequacy Capacity**

**California Independent System Operator Corporation**

#### **40.6.1 Day-Ahead Availability**

Except as otherwise provided in Sections 40.6.1.1 and 40.6.4, Scheduling Coordinators supplying Resource Adequacy Capacity shall make such Resource Adequacy Capacity, available Day-Ahead to the CAISO as follows:

- (1) Resource Adequacy Resources physically capable of operating must submit: (a) Economic Bids for Energy and/or Self-Schedules for all their Resource Adequacy Capacity and (b) Economic Bids for Ancillary Services and/or a Submission to Self-Provide Ancillary Services in the IFM for all of their Resource Adequacy Capacity that is certified to provide Ancillary Services. For Resource Adequacy Capacity that is certified to provide Ancillary Services and is not covered by a Submission to Self-Provide Ancillary Services, the resource must submit Economic Bids for each Ancillary Service for which the resource is certified. For Resource Adequacy Capacity subject to this requirement for which no Economic Energy Bid or Self-Schedule has been submitted, the CAISO shall insert a Generated Bid in accordance with Section 40.6.8. For Resource Adequacy Capacity subject to this requirement for which no Economic Bids for Ancillary Services or Submissions to Self-Provide Ancillary Services have been submitted, the CAISO shall insert a Generated Bid in accordance with Section 40.6.8 for each Ancillary Service the resource is certified to provide.
- (2) Resource Adequacy Resources must be available except for limitations specified in the Master File, legal or regulatory prohibitions or as otherwise required by this CAISO Tariff or by Good Utility Practice.
- (3) Through the IFM co-optimization process, the CAISO will utilize available Resource Adequacy Capacity to provide Energy or Ancillary Services in the most efficient manner to clear the Energy market, manage congestion and procure required Ancillary Services. In so doing, the IFM will honor submitted Energy Self-Schedules of Resource Adequacy Capacity unless the CAISO is unable to satisfy one hundred percent (100%) of the Ancillary Services requirements. In such cases, the CAISO may curtail all or a portion of a submitted Energy Self-Schedule to allow Ancillary Service-certified Resource Adequacy

Capacity to be used to meet the Ancillary Service requirements. The CAISO will not curtail for the purpose of meeting Ancillary Service requirements a Self-Schedule of a resource internal to a Metered Subsystem that was submitted by the Scheduling Coordinator for that Metered Subsystem. If the IFM reduces the Energy Self-Schedule of Resource Adequacy Capacity to provide an Ancillary Service, the Ancillary Service Marginal Price for that Ancillary Service will be calculated in accordance with Section 27.1.2 using the Ancillary Service Bids submitted by the Scheduling Coordinator for the Resource Adequacy Resource or inserted by the CAISO pursuant to this Section 40.6.1, and using the resource's Generated Energy Bid to determine the Resource Adequacy Resource's opportunity cost of Energy. If the Scheduling Coordinator for the Resource Adequacy Resource believes that the opportunity cost of Energy based on the Resource Adequacy Resource's Generated Energy Bid is insufficient to compensate for the resource's actual opportunity cost, the Scheduling Coordinator may submit evidence justifying the increased amount to the CAISO and to the FERC no later than seven (7) days after the end of the month in which the submitted Energy Self-Schedule was reduced by the CAISO to provide an Ancillary Service.

The CAISO will treat such information as confidential and will apply the procedures in Section 20.4 of this CAISO Tariff with regard to requests for disclosure of such information. The CAISO shall pay any higher opportunity costs approved by FERC.

- (4) A Resource Adequacy Resources must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in a Day-Ahead Schedule. Resource Adequacy Capacity participating in RUC will be optimized using a zero dollar (\$0/MW-hour) RUC Availability Bid.
- (5) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

#### **40.6.1.1 Day-Ahead Availability - Specific RA Resource Types**

- (a) **Distributed Generation Facilities.** Distributed Generation Facilities shall comply with the IFM and RUC bidding requirements that apply to the same technology type of a

resource connected to the CAISO Controlled Grid.

(b) **Non-Generator Resources**

(1) Non-Generator Resources that do not use Regulation Energy Management shall submit:

(A) Economic Bids or Self-Schedules into the IFM for all RA Capacity for all hours of the month the resource is physically capable of operating; and

(B) \$0/MW RUC Availability Bids for all RA Capacity for all hours of the month the resource is physically capable of operating,

(2) Non-Generator Resources using Regulation Energy Management shall submit Economic Bids or Self-Schedules into the IFM for all RA Capacity for Regulation for all hours of the month the resource is physically capable of operating.

(c) **Extremely Long-Start Resources.** Extremely Long-Start Resources that are Resource Adequacy Resources must make themselves available to the CAISO by complying with:

(1) the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the ELS Resource upon instruction from the CAISO, if physically capable; and

(2) the applicable provisions of Section 40.6.1 regarding Day-Ahead availability for the Trading Days for which it was committed.

**40.6.2 Real-Time Availability**

(a) **General Requirement.** Except as otherwise provided in Section 40.6.4, for every Trading Hour in which a Resource Adequacy Resource receives a Day-Ahead Schedule for Energy or Ancillary Services or a RUC Schedule, the Resource Adequacy Resource must submit Bids to the Real-Time Market for that Trading Hour that conform with the Resource Adequacy Resource's obligations under Section 40.6.1 for the Day-Ahead Market. Provided, however, that any reference in Section 40.6.1 to RUC bidding does not apply to the Real-Time Market bidding obligations.

(b) **Short Start Units or Medium Start Units.** Irrespective of their Day-Ahead Schedule for Energy, Day-Ahead Schedule for Ancillary Services, or RUC Schedule, Short Start Units

and Medium Start Units must, for each Trading Hour, submit Bids to the Real-Time Market that conform to their obligations under Section 40.6.1 for the Day-Ahead Market. Provided, however, that any reference in Section 40.6.1 to RUC bidding does not apply to the Real-Time Market bidding obligations for Short Start Units or Medium Start Units. The CAISO may waive these availability obligations for a resource that is not a Long Start Unit or an Extremely Long-Start Resource that does not have an Day-Ahead Schedule or a RUC Schedule based on a procedure to be published on the CAISO Website. The CAISO will insert Generated Bids in accordance with Section 40.6.8 for any Resource Adequacy Capacity subject to the above requirements for which the resource has failed to submit the appropriate bids to the RTM.

- (c) **Long Start Units.** Long Start Units not committed in the Day-Ahead Market will be released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule or Wheeling-Out in the RTM, unless precluded by terms of their contracts.
- (d) **Extremely Long-Start Resources.** Once an Extremely Long-Start Resource providing Resource Adequacy Capacity is committed by the CAISO, it shall comply, for the Trading Days for it was committed, with the Real-Time availability provisions in sub-sections (a) and (b) of this Section 40.6.2, including those provisions that otherwise apply only to Short Start Units or Medium Start Units.
- (e) **Self-Schedules.** The CAISO will honor submitted Energy Self-Schedules of Resource Adequacy Capacity unless the CAISO is unable to satisfy one hundred (100) percent of its Ancillary Services requirements. In such cases, the CAISO may curtail all or a portion of a submitted Energy Self-Schedule to allow Ancillary Service-certified Resource Adequacy Capacity to be used to meet the Ancillary Service requirements, as long as such curtailment does not lead to a real-time shortfall in energy supply. If the CAISO reduces a submitted Real-Time Energy Self-Schedule for Resource Adequacy Capacity when that capacity is needed to meet an Ancillary Services requirement, the Ancillary

Service Marginal Price for that capacity will be calculated in accordance with Sections 27.1.2 and 40.6.1.

- (f) **Distributed Generation Facilities.** Distributed Generation Facilities shall comply with the RTM bidding requirements that apply to the same technology type of resource connected to the CAISO Controlled Grid.
- (g) **Non-Generator Resources**
  - (1) Non-Generator Resources that do not use Regulation Energy Management shall submit -
    - (A) Economic Bids or Self-Schedules into the RTM for any remaining RA Capacity scheduled in the IFM or RUC; and
    - (B) Economic Bids or Self-Schedules into the RTM for all RA Capacity not scheduled in the IFM.
  - (2) Non-Generator Resources using Regulation Energy Management that are not Use-Limited Resources under Section 40.4.6.1 shall submit Economic Bids or Self-Schedules into the RTM for any remaining RA Capacity from resource scheduled in IFM or RUC.

\* \* \* \* \*

#### **40.6.8 Use of Generated Bids**

- (a) **Day-Ahead Market.** Prior to completion of the Day-Ahead Market, the CAISO will determine if Resource Adequacy Capacity subject to the requirements of Section 40.6.1 and for which the CAISO has not received notification of an Outage has not been reflected in a Bid and will insert a Generated Bid for such capacity into the CAISO Day-Ahead Market.
- (b) **Real-Time Market.** Prior to running the Real-Time Market, the CAISO will determine if Resource Adequacy Capacity subject to the requirements of Section 40.6.2 and for which the CAISO has not received notification of an Outage has not been reflected in a Bid and

will insert a Generated Bid for such capacity into the Real-Time Market.

- (c) **Partial Bids for RA Capacity.** If a Scheduling Coordinator for an RA Resource submits a partial bid for the resource's RA Capacity, the CAISO will insert a Generated Bid only for the remaining RA Capacity. In addition, the CAISO will determine if all dispatchable Resource Adequacy Capacity from Short Start Units, not otherwise selected in the IFM or RUC, is reflected in a Bid into the Real-Time Market and will insert a Generated Bid for any remaining dispatchable Resource Adequacy Capacity for which the CAISO has not received notification of an Outage.
- (d) **Calculation of Generated Bids.** A Generated Bid for Energy will be calculated pursuant to Sections 30.7.3.4 and 30.7.3.5. A Generated Bid for Ancillary Services will equal zero dollars (\$0/MW-hour).
- (e) **Exemptions.** Notwithstanding any of the provisions of Section 40.6.8, for the following resource types providing Resource Adequacy Capacity, the CAISO only inserts a Bid in the Day-Ahead Market or Real-Time Market where the generally applicable bidding rules in Section 30 call for bid insertion: Use-Limited Resource, Non-Generator Resource, Variable Energy Resource, Hydroelectric Generating Unit, Proxy Demand Resource, Reliability Demand Response Resource, Participating Load, including Pumping Load, Combined Heat and Power Resource, Conditionally Available Resource, Non-Dispatchable Resource, and resources providing Regulatory Must-Take Generation.
- (f) **NRS-RA Resources.** The CAISO will submit a Generated Bid in the Day-Ahead Market for a non-Resource Specific System Resource in each RAIM assessment hour, to the extent that the resource provides Resource Adequacy Capacity subject to the requirements of Section 40.6.1 and does not submit an outage request or Bid for the entire amount of that Resource Adequacy Capacity. Aside from where the generally applicable bidding rules in Section 30 call for Bid insertion, the CAISO will not submit a Generated Bid in the Real-Time Market for a Non-Resource-Specific System Resource that fails to meet its bidding obligations under Section 40.6.2. A Bid inserted for the Real-Time Market pursuant to the generally applicable bidding rules in Section 30 may not

necessarily cover the full Real-Time Market obligation under Section 40.6.2 and the resource may thus remain exposed to Non-Availability Charges.

**Attachment B – Marked Tariff**

**Alteration to Real-Time Market Bid Generation for Imported Resource Adequacy Capacity**

**California Independent System Operator Corporation**

#### **40.6.1 Day-Ahead Availability**

Except as otherwise provided in Sections 40.6.1.1 and 40.6.4, Scheduling Coordinators supplying Resource Adequacy Capacity shall make such Resource Adequacy Capacity, available Day-Ahead to the CAISO as follows:

- (1) Resource Adequacy Resources physically capable of operating must submit: (a) Economic Bids for Energy and/or Self-Schedules for all their Resource Adequacy Capacity and (b) Economic Bids for Ancillary Services and/or a Submission to Self-Provide Ancillary Services in the IFM for all of their Resource Adequacy Capacity that is certified to provide Ancillary Services. For Resource Adequacy Capacity that is certified to provide Ancillary Services and is not covered by a Submission to Self-Provide Ancillary Services, the resource must submit Economic Bids for each Ancillary Service for which the resource is certified. For Resource Adequacy Capacity subject to this requirement for which no Economic Energy Bid or Self-Schedule has been submitted, the CAISO shall insert a Generated Bid in accordance with Section 40.6.8. For Resource Adequacy Capacity subject to this requirement for which no Economic Bids for Ancillary Services or Submissions to Self-Provide Ancillary Services have been submitted, the CAISO shall insert a Generated Bid in accordance with Section 40.6.8 for each Ancillary Service the resource is certified to provide.
- (2) Resource Adequacy Resources must be available except for limitations specified in the Master File, legal or regulatory prohibitions or as otherwise required by this CAISO Tariff or by Good Utility Practice.
- (3) Through the IFM co-optimization process, the CAISO will utilize available Resource Adequacy Capacity to provide Energy or Ancillary Services in the most efficient manner to clear the Energy market, manage congestion and procure required Ancillary Services. In so doing, the IFM will honor submitted Energy Self-Schedules of Resource Adequacy Capacity unless the CAISO is unable to satisfy one hundred percent (100%) of the Ancillary Services requirements. In such cases, the CAISO may curtail all or a portion of a submitted Energy Self-Schedule to allow Ancillary Service-certified Resource Adequacy

Capacity to be used to meet the Ancillary Service requirements. The CAISO will not curtail for the purpose of meeting Ancillary Service requirements a Self-Schedule of a resource internal to a Metered Subsystem that was submitted by the Scheduling Coordinator for that Metered Subsystem. If the IFM reduces the Energy Self-Schedule of Resource Adequacy Capacity to provide an Ancillary Service, the Ancillary Service Marginal Price for that Ancillary Service will be calculated in accordance with Section 27.1.2 using the Ancillary Service Bids submitted by the Scheduling Coordinator for the Resource Adequacy Resource or inserted by the CAISO pursuant to this Section 40.6.1, and using the resource's Generated Energy Bid to determine the Resource Adequacy Resource's opportunity cost of Energy. If the Scheduling Coordinator for the Resource Adequacy Resource believes that the opportunity cost of Energy based on the Resource Adequacy Resource's Generated Energy Bid is insufficient to compensate for the resource's actual opportunity cost, the Scheduling Coordinator may submit evidence justifying the increased amount to the CAISO and to the FERC no later than seven (7) days after the end of the month in which the submitted Energy Self-Schedule was reduced by the CAISO to provide an Ancillary Service.

The CAISO will treat such information as confidential and will apply the procedures in Section 20.4 of this CAISO Tariff with regard to requests for disclosure of such information. The CAISO shall pay any higher opportunity costs approved by FERC.

- (4) A Resource Adequacy Resources must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in an ~~IFM-Day-Ahead~~ Schedule. Resource Adequacy Capacity participating in RUC will be optimized using a zero dollar (\$0/MW-hour) RUC Availability Bid.
- (5) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

#### **40.6.1.1 Day-Ahead Availability - Specific RA Resource Types**

- (a) **Distributed Generation Facilities.** Distributed Generation Facilities shall comply with the IFM and RUC bidding requirements that apply to the same technology type of a

resource connected to the CAISO Controlled Grid.

(b) **Non-Generator Resources**

(1) Non-Generator Resources that do not use Regulation Energy Management shall submit:—

(A) Economic Bids or Self-Schedules into the IFM for all RA Capacity for all hours of the month the resource is physically capable of operating; and

(B) \$0/MW RUC Availability Bids for all RA Capacity for all hours of the month the resource is physically capable of operating,

(2) Non-Generator Resources using Regulation Energy Management shall submit Economic Bids or Self-Schedules into the IFM for all RA Capacity for Regulation for all hours of the month the resource is physically capable of operating.

(c) **Extremely Long-Start Resources.** Extremely Long-Start Resources that are Resource Adequacy Resources must make themselves available to the CAISO by complying with:—

(1) the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the ELS Resource upon instruction from the CAISO, if physically capable; and

(2) the applicable provisions of Section 40.6.1 regarding Day-Ahead availability for the Trading Days for which it was committed.

**40.6.2 Real-Time Availability**

(a) **General Requirement.** Except as otherwise provided in Section 40.6.4, for every Trading Hour in which a Resource Adequacy Resource receives a Day-Ahead Schedule for Energy or Ancillary Services or a RUC Schedule, the Resource Adequacy Resource must submit Bids to the Real-Time Market for that Trading Hour that conform with the Resource Adequacy Resource's obligations under Section 40.6.1 for the Day-Ahead Market. Provided, however, that any reference in Section 40.6.1 to RUC bidding does not apply to the Real-Time Market bidding obligations. Resource Adequacy Resources that have received an IFM Schedule for Energy or Ancillary Services or a RUC Schedule for all or part of their Resource Adequacy Capacity must remain available to the CAISO

~~through Real Time for Trading Hours for which they receive an IFM or RUC Schedule, including any Resource Adequacy Capacity of such resources that is not included in an IFM Schedule or RUC Schedule, except for Resource Adequacy Capacity that is subject to Section 40.6.4.~~

- (b) **Short Start Units or Medium Start Units.** Irrespective of their Day-Ahead Schedule for Energy, Day-Ahead Schedule for Ancillary Services, or RUC Schedule, Short Start Units and Medium Start Units must, for each Trading Hour, submit Bids to the Real-Time Market that conform to their obligations under Section 40.6.1 for the Day-Ahead Market. Provided, however, that any reference in Section 40.6.1 to RUC bidding does not apply to the Real-Time Market bidding obligations for Short Start Units or Medium Start Units. ~~Short Start Units or Medium Start Units that are Resource Adequacy Resources that do not have an IFM Schedule or a RUC Schedule for any of their Resource Adequacy Capacity for a given Trading Hour must be available to the CAISO through Real-Time. Resource Adequacy Resources with Resource Adequacy Capacity that is required to be available to the CAISO through Real-Time and does not have an IFM Schedule or a RUC Schedule for a given Trading Hour must submit to the RTM for that Trading hour: (a) Energy Bids and Self Schedules for the full amount of the available Resource Adequacy Capacity, including capacity for which it has submitted Ancillary Services Bids or Submissions to Self-Provide Ancillary Services; and (b) Ancillary Services Bids and Submissions to Self-Provide Ancillary Services for the full amount of the available Ancillary Service-certified Resource Adequacy Capacity and for each Ancillary Service for which the resource is certified, including capacity for which it has submitted Energy Bids and Self Schedules.~~ The CAISO may waive these availability obligations for a resource that is not a Long Start Unit or an Extremely Long-Start Resource that does not have an IFM-Day-Ahead Schedule or a RUC Schedule based on a procedure to be published on the CAISO Website. The CAISO will insert Generated Bids in accordance with Section 40.6.8 for any Resource Adequacy Capacity subject to the above requirements for which the resource has failed to submit the appropriate bids to the RTM.

- (c) **Long Start Units.** Long Start Units not committed in the Day-Ahead Market will be released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule or Wheeling-Out in the RTM, unless precluded by terms of their contracts.
- (d) **Extremely Long-Start Resources.** Once an Extremely Long-Start Resource providing Resource Adequacy Capacity is committed by the CAISO, it shall comply, for the Trading Days for it was committed, with the Real-Time availability provisions in sub-sections (a) and (b) of this Section 40.6.2, including those provisions that otherwise apply only to Short Start Units or Medium Start Units.
- (e) **Self-Schedules.** The CAISO will honor submitted Energy Self-Schedules of Resource Adequacy Capacity unless the CAISO is unable to satisfy one hundred (100) percent of its Ancillary Services requirements. In such cases, the CAISO may curtail all or a portion of a submitted Energy Self-Schedule to allow Ancillary Service-certified Resource Adequacy Capacity to be used to meet the Ancillary Service requirements, as long as such curtailment does not lead to a real-time shortfall in energy supply. If the CAISO reduces a submitted Real-Time Energy Self-Schedule for Resource Adequacy Capacity when that capacity is needed to meet an Ancillary Services requirement, the Ancillary Service Marginal Price for that capacity will be calculated in accordance with Sections 27.1.2 and 40.6.1.
- (f) **Distributed Generation Facilities.** Distributed Generation Facilities shall comply with the RTM bidding requirements that apply to the same technology type of resource connected to the CAISO Controlled Grid.
- (g) **Non-Generator Resources**
  - (1) Non-Generator Resources that do not use Regulation Energy Management shall submit -
    - (A) Economic Bids or Self-Schedules into the RTM for any remaining RA Capacity scheduled in the IFM or RUC; and

- (B) Economic Bids or Self-Schedules into the RTM for all RA Capacity not scheduled in the IFM.
- (2) Non-Generator Resources using Regulation Energy Management that are not Use-Limited Resources under Section 40.4.6.1 shall submit Economic Bids or Self-Schedules into the RTM for any remaining RA Capacity from resource scheduled in IFM or RUC.

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#### 40.6.8 Use of Generated Bids

- (a) **Day-Ahead Market.** Prior to completion of the Day-Ahead Market, the CAISO will determine if Resource Adequacy Capacity subject to the requirements of Section 40.6.1 and for which the CAISO has not received notification of an Outage has not been reflected in a Bid and will insert a Generated Bid for such capacity into the CAISO Day-Ahead Market.
- (b) **Real-Time Market.** Prior to running the Real-Time Market, the CAISO will determine if Resource Adequacy Capacity subject to the requirements of Section 40.6.2 and for which the CAISO has not received notification of an Outage has not been reflected in a Bid and will insert a Generated Bid for such capacity into the Real-Time Market.
- (c) **Partial Bids for RA Capacity.** If a Scheduling Coordinator for an RA Resource submits a partial bid for the resource's RA Capacity, the CAISO will insert a Generated Bid only for the remaining RA Capacity. In addition, the CAISO will determine if all dispatchable Resource Adequacy Capacity from Short Start Units, not otherwise selected in the IFM or RUC, is reflected in a Bid into the Real-Time Market and will insert a Generated Bid for any remaining dispatchable Resource Adequacy Capacity for which the CAISO has not received notification of an Outage.
- (d) **Calculation of Generated Bids.** A Generated Bid for Energy will be calculated pursuant to Sections 30.7.3.4 and 30.7.3.5. A Generated Bid for Ancillary Services will equal zero

dollars (\$0/MW-hour).

- (e) **Exemptions.** Notwithstanding any of the provisions of Section 40.6.8, for the following resource types providing Resource Adequacy Capacity, the CAISO only inserts a Bid in the Day-Ahead Market or Real-Time Market where the generally applicable bidding rules in Section 30 call for bid insertion: Use-Limited Resource, Non-Generator Resource, Variable Energy Resource, Hydroelectric Generating Unit, Proxy Demand Resource, Reliability Demand Response Resource, Participating Load, including Pumping Load, Combined Heat and Power Resource, Conditionally Available Resource, Non-Dispatchable Resource, and resources providing Regulatory Must-Take Generation.
- (f) **NRS-RA Resources.** The CAISO will submit a Generated Bid in the Day-Ahead Market ~~or Real-Time Market~~ for a non-Resource Specific System Resource in each RAAIM assessment hour, to the extent that the resource provides Resource Adequacy Capacity subject to the requirements of Sections 40.6.1 ~~or 40.6.2~~ and does not submit an outage request or Bid for the entire amount of that Resource Adequacy Capacity. Aside from where the generally applicable bidding rules in Section 30 call for Bid insertion, the CAISO will not submit a Generated Bid in the Real-Time Market for a Non-Resource-Specific System Resource that fails to meet its bidding obligations under Section 40.6.2. A Bid inserted for the Real-Time Market pursuant to the generally applicable bidding rules in Section 30 may not necessarily cover the full Real-Time Market obligation under Section 40.6.2 and the resource may thus remain exposed to Non-Availability Charges.