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Distributed Generation Facility, must submit to the CAISO a request that the initial Net Qualifying Capacity be determined and approved as a combined Distributed Generation Facility.

40.8.1.16 Non-Generator Resources

- (a) Non-Generator Resources must be either Participating Generators or System Units to qualify as Resource Adequacy Capacity.
- (b) The CAISO will determine the Net Qualifying Capacity of each Non-Generator Resource based on the CAISO testing of the resource's sustained output over a four-hour period; however, the Net Qualifying Capacity shall not exceed the resource's maximum instantaneous discharge capability.

[Petition for Limited Tariff Waiver for Availability Assessment Hours and CPUC Demand Response Auction Mechanism entities is pending with FERC in Docket No. ER18-838.]

40.9 Resource Adequacy Availability Incentive Mechanism

40.9.1 Introduction to RAIM

The CAISO shall use RAIM to determine the availability of resources providing local and/or system Resource Adequacy Capacity and Flexible RA Capacity during the Availability Assessment Hours each month and then assess the resultant Availability Incentive Payments and Non-Availability Charges through the CAISO's settlements process.

40.9.2 Exemptions

- (a) **Capacity Exempt from RAIM – All Provisions.** The entire capacity of a resource in any of the following categories is exempt from the RAIM provisions in Section 40.9 –
 - (1) Resources with a PMax less than 1.0 MW;
 - (2) Non-specified resources that provide Resource Adequacy Capacity under contracts for Energy delivered within the CAISO Balancing Authority Area;
 - (3) Participating Load that is also Pumping Load; and
 - (4) RMR Units.

(b) **Capacity Exempt from RAAIM – Local/System**

- (1) The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity –
 - (A) Variable Energy Resources; and
 - (B) Combined Heat and Power Resources.
- (2) The capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Resource Adequacy Plan is exempt from the RAAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity, to the extent that the resource's capacity is also designated as Resource Adequacy Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.
- (3) Resources with Existing QF Contracts or Amended QF Contracts that are Resource Adequacy Resources are exempt from the RAAIM provisions in Section 40.9 applicable to local and system capacity --
 - (A) if the QF resource previously provided Resource Adequacy Capacity pursuant to an Existing QF Contract that was executed prior to August 22, 2010 and remained in effect pursuant to California Public Utilities Commission Decision 07-09-040 that extended the term of expiring contracts until such time as the new contracts resulting from that decision are available; or
 - (B) until the QF Resource's Existing QF Contract or Amended QF Contract terminates or if requested by the Scheduling Coordinator for the resource, whichever is earlier.

(c) **Capacity Exempt from RAAIM – Flexible Capacity.**

- (1) The capacity of Use-Limited Resources in a combination under Section 40.10.3.2(b), 40.10.3.3(b) or 40.10.3.4(b) is exempt from the RAAIM provisions in Section 40.9 applicable to Flexible RA Capacity to the extent that the resources

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are committed to provide Flexible RA Capacity as a combination on their respective monthly Supply Plans.

- (2) The Capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Flexible RA Plan is exempt from the RAIM provisions in Section 40.10 applicable to Flexible RA Capacity, to the extent that the resource's capacity is also designated as Flexible RA Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.

40.9.2.1 Acquired Resources.

- (a) **Exemption.** The entire capacity of an Acquired Resource is exempt from the RAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity if the resource provides Resource Adequacy Capacity under a resource-specific power supply contract that –
 - (1) was exempt from the prior standard capacity product in Section 40.9 as of the RAIM effective date, and continues to meet the requirements for that exemption, under the provisions of Sections 40.9.2(1) or 40.9.2(2) contained in Appendix J.
 - (2) includes an availability provision, or the resource under the power supply contract is located outside of the CAISO Balancing Authority Area and jointly operated with project participants located outside of the CAISO Balancing Authority Area, such that no single Load Serving Entity with contractual rights for the resource's output has the ability to effect changes to the resource's availability; and
 - (3) does not contain a provision that allows the contract to be modified for regulatory changes.
- (b) **Request.** To maintain the exemption, the Scheduling Coordinator for the Acquired Resource must annually request renewal of the exemption and –

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- (1) for Resource Adequacy Compliance Year 2016, submit an affidavit to the CAISO, by either the Scheduling Coordinator or resource owner, demonstrating that the Acquired Resource meets the eligibility criteria in Section 40.9.2.1(a), in accordance with the process and schedule in the Business Practice Manual; and
 - (2) for each Resource Adequacy Compliance Year thereafter until the contract terminates, submit confirmation to the CAISO that the information in the affidavit is still accurate and the Acquired Resource continues to meet the eligibility criteria in Section 40.9.2.1(a), in accordance with the process and schedule in Business Practice Manual.
- (c) **Approval.** The CAISO shall review the information submitted and --
- (1) approve a request that contains the information required by Sections 40.9.2.1(a) and (b) and that demonstrates the resource meets the eligibility criteria in Section 40.9.2.1(a);
 - (2) advise the Scheduling Coordinator for the resource if the request does not contain all of the information required by Sections 40.9.2.1(a) and (b), and allow the opportunity for the Scheduling Coordinator to submit the additional required information, in accordance with the process and schedule in the Business Practice Manual; or
 - (3) deny the request and permanently terminate the exemption if --
 - (A) the Scheduling Coordinator for the resource does not timely submit a request under Section 40.9.2.1(b);
 - (B) the Scheduling Coordinator for the resource does not submit, or does not timely submit, additional information required to complete the request under Section 40.9.2(c)(2); or
 - (C) the CAISO determines the resource does not meet the eligibility criteria in Section 40.9.2.1(a).
- (d) **Failure to Request Renewal.** If the Scheduling Coordinator for the resource does not submit a request to renew the exemption under Section 40.9.2.1(b), the exemption shall

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terminate and the CAISO shall notify the Scheduling Coordinator of the termination in accordance with the process and schedule in Business Practice Manual.

- (e) **Notice of Termination.** The Scheduling Coordinator for an Acquired Resource must notify the CAISO within 10 days if the contract terminates or no longer meets the eligibility criteria in Section 40.9.2.1(a).

[Petition for Limited Tariff Waiver for Availability Assessment Hours and CPUC Demand Response Auction Mechanism entities was granted by FERC in Docket No. ER18-838.]

40.9.3 Availability Assessment

40.9.3.1 Local and System RA Capacity Availability

(a) **Availability Assessment Hours**

(1) Prior to the start of each Resource Adequacy Compliance Year, the CAISO shall establish and publish in the Business Practice Manual the Availability Assessment Hours applicable for resources providing local and/or system Resource Adequacy Capacity for each month of that year.

(2) The Availability Assessment Hours shall be a pre-defined set of five consecutive hours for each month that –

(A) correspond to the operating periods when high demand conditions typically occur and when the availability of Resource Adequacy Capacity is most critical to maintaining system reliability:

(B) vary by season as necessary so that the coincident peak load hour typically falls within the five-hour range each day during the month, based on historical actual load data; and

(C) apply to each Trading Day that is a weekday and not a federal holiday.

- (b) **Must-Offer Availability Assessment.** The CAISO shall determine the extent to which each resource providing local and/or system Resource Adequacy Capacity made that capacity available to the CAISO each day during the Availability Assessment Hours by comparing –

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- (1) the MWs of local and/or system Resource Adequacy Capacity for which the Scheduling Coordinator for the resource submitted Economic Bids or Self-Schedules in the Day-Ahead Market and the Real-Time Market on a given day; and
- (2) the MWs of local and/or system Resource Adequacy Capacity for which the Scheduling Coordinator for the resource had a performance obligation to submit Economic Bids or Self-Schedules in the CAISO Markets under the must-offer requirements applicable under Section 40.6 on a given day.

40.9.3.2 Flexible RA Capacity Availability

- (a) **Availability Assessment Hours.** The Availability Assessment Hours for a Flexible RA Resource shall be the same period as the must-offer obligation for the Flexible Capacity Category that is designated on the Resource Flexible RA Capacity Plan for that month, as set forth in Section 40.10.6.
- (b) **Must-Offer Availability Assessment.** The CAISO shall determine the extent to which each Flexible RA Resource made that capacity available in each Availability Assessment Hour of the day by comparing –
 - (A) the MWs of Flexible RA Capacity for which the Scheduling Coordinator for the resource submitted Economic Bids in the Day-Ahead Market and the Real-Time Market on a given day; and
 - (B) the MWs of Flexible RA Capacity for which the Scheduling Coordinator for the resource had a performance obligation to submit Economic Bids in the CAISO Markets under the must-offer requirements applicable under Section 40.10.6 on a given day.
- (c) **Flexible Capacity Category.** If a Flexible RA Resource is designated to provide Flexible RA Capacity and/or RA Substitute Capacity in more than one Flexible Capacity Category on the same day, the CAISO will assess the availability of the resource using the must-offer obligation for the highest quality of Flexible Capacity Category designated.

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- (d) **Start-Up Less Than 90 Minutes.** For resources with a start-up time less than 90 minutes, the CAISO will use the resource's MWs of capacity from zero to the EFC value to assess the availability of the designated Flexible RA Capacity; provided that the Scheduling Coordinator for the resource does not submit Self-Schedules for the capacity from zero to PMin or for any portion of the capacity under the must-offer obligation for Energy. If the Scheduling Coordinator for the resource submits a Self-Schedule, the CAISO will deduct the MW value of PMin from the calculation of the resource's Flexible RA Capacity availability,
- (e) **Start-Up Greater Than 90 Minutes.** For resources with a start-up time greater than 90 minutes, the CAISO will use the MWs of capacity between the resource's PMin and EFC value in the availability assessment and validate whether the Scheduling Coordinator for the resource submitted Economic Bids for all MWs designated on the Resource Flexible RA Capacity Plan.
- (f) **Variable Energy Resources**
- (1) **Flexible RA Capacity Equal to EFC.** If the Flexible RA Capacity designated on the monthly Resource Flexible RA Capacity Plan is equal to the resource's EFC value, the CAISO will assess the availability of the designated Flexible RA Capacity based on the Economic Bids for Flexible RA Capacity the Scheduling Coordinator for the resource submitted up to the MWs in the Variable Energy Resource forecast applicable under Section 4.8.2.
- (2) **Flexible RA Capacity Less Than EFC.** If the Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan is less than the EFC value for the resource, the CAISO will assess availability using the ratio of the amount shown on the monthly plan to the relevant EFC value, and applies that ratio to the MWs of Economic Bids and the Variable Energy Resource forecast.
- (3) **VER Forecast Less Than Flexible RA Capacity.** If the MWs in the Variable Energy Resource forecast are less than the MWs of Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan, and the

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Economic Bids are greater than or equal to the forecast amount for that hour, the resource is 100 percent available up to the forecast amount.

- (4) **VER Forecast Greater Than Flexible RA Capacity.** If the MWs in the Variable Energy Resource forecast are greater than the MWs of Flexible RA Capacity designated in the monthly Resource Flexible RA Capacity Plan, the Scheduling Coordinator for the resource must submit Economic Bids equal to the forecast amount. If the Scheduling Coordinator for the resource submits Economic Bids for MWs above the forecast, or the resource generates above the forecast, the CAISO will limit the calculated availability to the forecast amount.
- (5) **No Day-Ahead Market Obligation.** For Variable Energy Resources that do not have an obligation to submit Economic Bids into the Day-Ahead Market, the CAISO will base the availability assessment of the Flexible RA Capacity only on the resource's Economic Bids in the Real-Time Market.

40.9.3.3 Availability for Overlapping Local/System and Flexible RA Capacity

- (a) **Overlap Determination.** The availability assessment for overlapping Resource Adequacy commitments shall apply to those MWs subject to the must-offer obligations for local and/or system Resource Adequacy Capacity and Flexible RA Capacity in any Availability Assessment Hour. For the purpose of this Section 40.9, capacity is deemed to have an overlapping Resource Adequacy commitment if it has a must-offer obligation based on its status as local and/or system Resource Adequacy Capacity and a must-offer obligation based on its status as Flexible RA Capacity during the same Availability Assessment Hour of a day.
- (b) **Must-Offer Availability Assessment.** The CAISO shall determine the extent to which each resource with overlapping Resource Adequacy commitments made that capacity available to the CAISO in each overlapping Availability Assessment Hour of the day by comparing –
 - (1) the MWs of local and/or system Resource Adequacy Capacity and Flexible RA Capacity for which the Scheduling Coordinator for the resource submitted

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Economic Bids in the Day-Ahead Market and the Real-Time Market; and

- (2) the MWs of local and/or system Resource Adequacy Capacity and Flexible RA Capacity for which the Scheduling Coordinator for the resource had a performance obligation to submit Economic Bids in the CAISO Markets, in accordance with the applicable must-offer requirements in Sections 40.6 and 40.10.6.

- (c) **Calculation.** The CAISO's calculation of the Availability Assessment for overlapping RA commitments shall count-

- (1) any MW only once; and
- (2) the total MWs of overlapping capacity as a Flexible RA Capacity commitment.

40.9.3.4 Treatment of Outages

- (a) **RA Substitute Capacity Not Required.** The RAAIM Availability Assessment for a Resource Adequacy Resource excludes the capacity, duration, and must-offer requirements for Resource Adequacy Capacity on an Outage during the Resource Adequacy month that does not require RA Substitution Capacity under Section 9.3.1.3.3.
- (b) **RA Substitute Capacity Required and Provided.** For each Outage that requires RA Substitute Capacity under Section 40.9.3.6 to avoid imposition of RAAIM charges –
 - (1) the RAAIM Availability Assessment for the resource excludes the capacity, duration, and must-offer requirement for Resource Adequacy Capacity on outage to the extent the resource provides RA Substitute Capacity for that outage as required under Section 40.9.3.6; and
 - (2) the RAAIM Availability Assessment for the substitute resource includes the capacity, duration, and must-offer requirement for the RA Substitute Capacity commitment. For each day the substitute resource is committed to provide Flexible RA Capacity and/or RA Substitute Capacity in more than one Flexible Capacity Category, the RAAIM Availability Assessment applies the must-offer obligation for the highest quality Flexible Capacity Category to the total MWs of the flexible capacity requirement. For the purposes of this Section 40.9, base

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ramping resources (as defined in section 40.10.3.2) are considered to be a higher quality of Flexible Capacity Category than either peak ramping resources (as defined in section 40.10.3.3) or super-peak ramping resources (as defined in section 40.10.3.4). Additionally, peak ramping resources (as defined in section 40.10.3.3) are considered to be a higher quality of Flexible Capacity Category than super-peak ramping resources (as defined in section 40.10.3.4).

- (c) **RA Substitute Capacity Required not Provided.** For each Outage that requires RA Substitute Capacity under Section 40.9.3.6 to avoid imposition of RAIM charges, the RAIM Availability Assessment for the resource includes the capacity, duration, and must-offer requirement for Resource Adequacy Capacity on an outage to the extent the resource does not provide RA Substitute Capacity for the outage as required under Section 40.9.3.6.
- (d) **Exclusions from RAIM for certain Forced Outage types.** The RAIM Availability Assessment excludes the capacity, duration, and must-offer requirement for local and/or system Resource Adequacy Capacity or Flexible RA Capacity on a Forced Outage in a nature of work category relating to an administrative action by the resource owner, a cause outside of the control of the resource owner, or a short-term use limitation, as those categories are specified in the Business Practice Manual.
- (e) **Derates on Generating Units Providing system RA Capacity and Listed Local RA Capacity.** If a Generating Unit providing both system RA Capacity and Listed Local RA Capacity is on Forced Outage, then for purposes of RAIM and RA Substitute Capacity the quantity of the Forced Outage will be apportioned first to the system RA Capacity provided from that Generating Unit. If the quantity of the Forced Outage exceeds the quantity of system RA Capacity provided by the Generating Unit, then the remainder of the Forced Outage shall be apportioned to the Listed Local RA Capacity provided by the Generating Unit.

40.9.3.5 [Not Used]

40.9.3.6 Substitute Capacity

40.9.3.6.1 CAISO Evaluation by T-22 of Need for Substitute Capacity for Outages Submitted by T-25

No later than 22 days before the start of each month, the CAISO will determine for each day in that month whether it will have sufficient operationally available RA Capacity from a combination of Local Capacity Area Resources and system capacity resources to meet or exceed the CAISO system RA Reliability Margin for each day. The CAISO will base this assessment on Maintenance Outages planned to be taken during the month that were submitted at least 25 days before the start of the month and any RA Substitute Capacity already provided to the CAISO for that month.

If the CAISO determines that it will have sufficient operationally available RA Capacity to meet or exceed the CAISO system RA Reliability Margin for a particular day, then no supplier with an outage submitted at least 25 days before the start of the month would be required to provide RA Substitute Capacity to be excluded from the RAAIM calculation as part of the analysis conducted no later than 22 days before the start of each month.

If the CAISO determines that it will not have sufficient operationally available RA capacity to meet the CAISO system RA Reliability Margin for a particular day, then it will determine which resources must provide RA Substitute Capacity to be excluded from the RAAIM calculation based on the reverse order of the dates on which the resources submitted the outage requests to the CAISO. The CAISO will first request the resource providing RA Capacity with the most-recently-requested outage for that day to provide RA Substitute Capacity and then will continue to assign substitution opportunities until the CAISO has sufficient operationally available RA Capacity to meet the CAISO system RA Reliability Margin for that particular day, assuming that all resources that are assigned a RA Substitute Capacity obligation actually provide RA Substitute Capacity for that day.

For purposes of this section 40.9.3.6.1, the CAISO will treat any request to extend the scheduled duration of an outage or increase the MW amount of capacity on outage as a new outage request and will assign a new priority date based on when the request to change the outage or derate was submitted to the CAISO.

For the purposes of this section 40.9.3.6.1, the CAISO will not assign a new priority date where the Scheduling Coordinator requests to reduce the scheduled duration of an outage or decrease the MW

amount of capacity on outage.

A resource designated to provide RA Substitute Capacity as part of the analysis conducted no later than 22 days before the start of each month must designate RA Substitute Capacity by the deadline specified in the relevant Business Practice Manual. Failure to designate the RA Substitute Capacity by the specified deadline will subject the resource to RAIM unless the outage is cancelled or rescheduled.

40.3.6.2 CAISO Rolling Evaluation of Need for Substitute Capacity for Outages Submitted after T-25

Starting at twenty-four days before the start of a month, the CAISO will consider submitted Maintenance Outages for a substitution requirement on a rolling basis, based on time of submission. Upon submission of the outage request, the CAISO will determine for each day of the outage whether the CAISO will have sufficient operationally available RA Capacity from a combination of Local Capacity Area Resources and system capacity resources to meet or exceed the CAISO system RA Reliability Margin for each day. The CAISO will base this assessment on Maintenance Outages planned to be taken for that day and any RA Substitute Capacity already provided to the CAISO for that day.

If the CAISO determines that it will have sufficient operationally available RA Capacity to meet or exceed the CAISO system RA Reliability Margin for a particular day, then the supplier will not be required to provide RA Substitute Capacity for that day to avoid imposition of RAIM.

If the CAISO determines that it will not have sufficient operationally available RA capacity to meet the CAISO system RA Reliability Margin for a particular day, then it will request substitution for the resource for that day. Failure to designate RA Substitute Capacity by the deadline specified in the relevant Business Practice Manual will subject the resource to RAIM unless the outage is cancelled or rescheduled.

The CAISO will not conduct an assessment to determine the need to provide RA Substitute Capacity for Forced Outages. Any such outage, irrespective of whether the resource is providing RA Capacity or Flexible RA Capacity, will be subject to applicable RAIM unless the Scheduling Coordinator for the resource provides Substitute Capacity by the deadline specified in the relevant Business Practice Manual, the outage is exempt from RAIM as set forth in Section 9 or Section 40, the outage is cancelled, or the outage is rescheduled.

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For purposes of this section 40.9.3.6.2, the CAISO will treat any request to extend the scheduled duration of an outage or increase the MW amount of capacity on outage as a new outage request and will assign a new priority date based on when the request to change the outage or derate was submitted to the CAISO. For purposes of this section 40.9.3.6.2, the CAISO will reevaluate the need for a Scheduling Coordinator to provide RA Substitute Capacity where the Scheduling Coordinator requests to reduce the scheduled duration of an outage or decrease the MW amount of capacity on outage but will not assign a new priority date.

40.9.3.6.3 General Provisions on Substitute Capacity

(a) **Substitution**

- (1) The Scheduling Coordinator for a Resource Adequacy Resource may provide RA Substitute Capacity for its local and/or system Resource Adequacy Capacity or Flexible RA Capacity on Outage. Certain types of Outages, as defined elsewhere in Section 9 or Section 40, will not subject the Scheduling Coordinator for a Resource Adequacy Resource to RAAIM if it declines to provide RA Substitute Capacity.
- (2) If the Resource Adequacy Resource on Outage and the substituting resource do not have the same Scheduling Coordinator, the Scheduling Coordinator for the substituting resource must confirm and approve the proposed substitution in accordance with the process set forth in the Business Practice Manual.

(b) **Availability**

- (1) RA Substitute Capacity must be operationally available to the CAISO:
- (2) Capacity on, or scheduled to be on, a Forced Outage, Approved Maintenance Outage, or de-rate, is not operationally available and shall not qualify to be RA Substitute Capacity for the duration of the period that it is unavailable.
- (3) RMR Capacity, CPM Capacity, and capacity committed to be Resource Adequacy Capacity in a monthly Supply Plan shall not qualify to be RA Substitute Capacity for the duration of that commitment.

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- (4) RA Substitute Capacity shall not qualify to be RMR Capacity, CPM Capacity, or Resource Adequacy Capacity in a monthly Supply Plan, for the duration of the substitution.
- (5) If a resource provides RA Substitute Capacity for multiple Resource Adequacy Resources under Section 40.9.3.6.6, the same capacity committed as RA Substitute Capacity for one Resource Adequacy Resource shall not qualify as RA Substitute Capacity for a different Resource Adequacy Resource during the same substitution period.
- (6) RA Substitute Capacity will be treated as Resource Adequacy Capacity during the period of substitution for purposes of a Forced Outage or de-rate allocation.

(c) **Timing of Substitution Request**

- (1) **Day-Ahead Market.** Requests for substitution for Forced Outages in the Day-Ahead Market must be submitted in accordance with the timeline specified in the Business Practice Manual and be approved by the CAISO to be included in the Day-Ahead Market for the next Trading Day. Requests for substitution for Forced Outages in the Day-Ahead Market submitted at or after the timeline specified in the Business Practice Manual and that are approved by the CAISO will be included in the Day-Ahead Market for the second Trading Day.
- (2) **Real-Time Market.** Requests for substitution for Forced Outages in the Real-Time Market must be submitted in accordance with the timeline in the Business Practice Manual.

40.9.3.6.4 RA Substitute Capacity from a Single Source

- (a) **Option.** The Scheduling Coordinator for a Resource Adequacy Resource that is on Outage may provide RA Substitute Capacity for that capacity from a single resource.
- (b) **Local Capacity Area Resource Substitution**
 - (1) **Pre-Qualified Substitution.**
 - (A) **Annual Process.** The CAISO annually will conduct a process to assess the eligibility of resources to pre-qualify as RA Substitute Capacity for

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Local Capacity Resource Adequacy Resources that potentially could be Listed Local RA Capacity in the time period covered by the process. The CAISO will publish a list of the pre-qualified resources in accordance with the timeline in the Business Practice Manual.

- (B) **Pre-Qualification Requirement.** The CAISO will pre-qualify a resource to provide RA Substitute Capacity that is located at the same bus as, or a compatible bus to, that of the Local Capacity Area Resource Adequacy Resource for which it could substitute.
- (C) **Request.** To use a pre-qualified resource in the Day-Ahead Market or Real-Time Market as RA Substitute Capacity, the Scheduling Coordinator for the Local Capacity Area Resource Adequacy Resource on Outage must submit a timely substitution request in accordance with Section 40.9.3.6.3(c).
- (D) **Approval.** The CAISO will grant a request that meets the requirements in Sections 40.9.3.6.4(b)(1)(C) and 40.9.3.6.3(b).

(2) **Non-Pre-Qualified Substitution.**

- (A) **Day-Ahead Market.** The Scheduling Coordinator for Listed Local RA Capacity on Outage may submit a request to substitute a non-pre-qualified resource only in the Day-Ahead Market.
- (B) **Request.** To use a non-pre-qualified resource as RA Substitute Capacity, the Scheduling Coordinator for the Listed Local RA Capacity must submit a timely substitution request in accordance with Section 40.9.3.6.3(c), and the alternate resource must be located in the same Local Capacity Area.
- (C) **Approval.** The CAISO will grant a request that meets the requirements in Sections 40.9.3.6.4(b)(2)(A) and (B), and 40.9.3.6.3(b).

(c) **Non-Local Capacity Area Resource Substitution**

- (1) **Request.** To use a Dynamic System Resource, Non-Dynamic System Resource, NRS-RA Resource, or Pseudo-Tie as RA Substitute Capacity, the Scheduling Coordinator for a Resource Adequacy Resource that has an Outage must submit a timely substitution request in the Day-Ahead Market in accordance with Section 40.9.3.6.3(c).
- (2) **Approval.** The CAISO will grant the request if the alternate resource is external to the CAISO Balancing Authority Area (including Pseudo-Ties), the Scheduling Coordinator for the resource has an adequate available import allocation at the resource's Scheduling Point to provide the RA Substitute Capacity, and meets the requirements in Sections 40.9.3.6.4(d)(1) and 40.9.3.6.3(b).

(d) **External Resources**

- (1) **Request.** To use a Dynamic System Resource, Non-Dynamic System Resource, NRS-RA Resource, or Pseudo-Tie as RA Substitute Capacity, the Scheduling Coordinator for a Resource Adequacy Resource that has a Forced Outage or de-rate must submit a timely substitution request in the Day-Ahead Market in accordance with Section 40.9.3.6(c).
- (2) **Approval.** The CAISO will grant the request if the alternate resource is external to the CAISO Balancing Authority Area (including Pseudo-Ties), the Scheduling Coordinator for the resource has an adequate available import allocation at the resource's Scheduling Point to provide the RA Substitute Capacity, and meets the requirements in Sections 40.9.3.6.1(d)(1) and 40.9.3.6(b).

(e) **Flexible RA Capacity**

- (1) **Request.** To use a resource as RA Substitute Capacity, the Scheduling Coordinator for the Flexible RA Resource that has a Forced Outage must submit a timely substitution request in the Day-Ahead Market or Real-Time Market in accordance with Section 40.9.3.6.3(c) and specify the MW of RA Substitute Capacity to be provided, which may not exceed the MWs of the outage.

- (2) **Approval.** The CAISO will grant the request if the alternate resource has adequate deliverable capacity to provide the RA Substitute Capacity, meets the applicable requirements in Sections 40.9.3.6.4(e) and 40.9.3.6.3(b), and is capable of meeting the must-offer obligation in Section 40.10.6 applicable to the highest quality Flexible Capacity Category for the MWs of the Flexible RA Capacity commitments of the resource on outage and the alternate resource.

40.9.3.6.5 RA Substitute Capacity from Multiple Resources

- (a) **Option.** The Scheduling Coordinator for a Resource Adequacy Resource on Outage may submit a request to substitute that capacity with RA Substitute Capacity from multiple alternate resources, including a resource already providing RA Substitute Capacity for one or more Resource Adequacy Resources.

(b) **Local Capacity Area Resource Substitution**

- (1) **Request.** To use RA Substitute Capacity from multiple resources, the Scheduling Coordinator for Listed Local RA Capacity on Outage must submit a timely substitution request in the Day-Ahead Market in accordance with Section 40.9.3.6.3(c) if any of the alternate resources are not pre-qualified to substitute for the resource on the outage; however, if all of the alternate resources are pre-qualified to provide RA Substitute Capacity for that resource, the request may be submitted in the Day-Ahead Market or Real-Time Market.
- (2) **Approval.** The CAISO will grant the request if it meets the requirements in Sections 40.9.3.6.5(b)(1) and 40.9.3.6.3(c) and the alternate resources are either pre-qualified, or are not pre-qualified but are located in the same Local Capacity Area as the Resource Adequacy Resource.

(c) **Non-Local Capacity Area Resources**

- (1) **Request.** To use RA Substitute Capacity from multiple resources, the Scheduling Coordinator for RA Capacity other than Listed Local RA Capacity on Outage must submit a timely substitution request in the Day-Ahead Market or the Real-Time Market in accordance with Section 40.9.3.6.3(c).

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- (2) **Approval.** The CAISO will grant the request if all of the alternate resources meet the requirements in Sections 40.9.3.6.5(c)(1) and 40.9.3.6.3(c).

(d) **External Resources**

- (1) **Request.** To use multiple Dynamic System Resources, Non-Dynamic System Resources, NRS-RA Resources, or Pseudo-Ties as RA Substitute Capacity, the Scheduling Coordinator for a Resource Adequacy Resource that has an Outage must submit a timely substitution request in the Day-Ahead Market in accordance with Section 40.9.3.6.3(c).
- (2) **Approval.** The CAISO will grant the request if the alternate resources are external to the CAISO Balancing Authority Area (including Pseudo-Ties), and the Scheduling Coordinator of each alternate resource has an adequate available import allocation at the resource's Scheduling Point to provide the RA Substitute Capacity, and meet the requirements in Sections 40.9.3.6.5(d)(1) and 40.9.3.6.3(b).

(e) **Flexible RA Capacity**

- (1) **Request.** To use RA Substitute Capacity from multiple resources, the Scheduling Coordinator for a resource providing Flexible RA Capacity on a Forced Outage must submit a timely substitution request in the Day-Ahead Market or the Real-Time Market and the alternate resources must be located in the CAISO Balancing Authority Area, which does not include a Pseudo-Tie of a Generating Unit or a Resource-Specific System Resource.
- (2) **Approval.** The CAISO will grant the request if the alternate resources meet the requirements in Sections 40.9.3.6.5(e)(1) and 40.9.3.6.3(c).

40.9.3.6.6 Multiple Substitution by One Resource. The Scheduling Coordinator for a resource already providing RA Substitute Capacity may provide RA Substitute Capacity for one or more additional Resource Adequacy Resources on Outage, subject to approval by the CAISO pursuant to Section 40.9.3.6.4 or 40.9.3.6.5.

40.9.3.6.7 Resource Adequacy Obligation

To the extent a resource provides RA Substitute Capacity, the resource must meet and comply with all requirements in Section 40 applicable to RA Substitute Capacity for the duration of the substitution; except that RA Substitute Capacity shall be released from this obligation and the substitution requirements in Section 40.9 –

- (a) at the end of the approved substitution period; or
- (b) upon request by either the Scheduling Coordinator for the resource on Outage or the Scheduling Coordinator for the substitute resource, and approval by the other Scheduling Coordinator, in accordance with the process set forth in the Business Practice Manual.

40.9.3.6.8 Treatment of Unbid Capacity

If the Scheduling Coordinator for RA Substitute Capacity does not submit Bids or Self-Schedules for all or a portion of that capacity in accordance with Section 40.6 or 40.10.6, the CAISO –

- (1) will treat the unbid capacity as unavailable for purposes of Section 40.9; and
- (2) will reflect that unavailability in the RAAIM availability calculation for the Resource Adequacy Resource providing the RA Substitute Capacity.

40.9.3.6.9 Substitution Opportunity Information

In order to make information available to Market Participants pertinent to the provisions of this Section 40.9.3.6, the CAISO will:

- (a) Annually post on the CAISO Website the due dates for each month of the following Resource Adequacy compliance year the various submissions the CAISO requires under the Resource Adequacy program; and
- (b) Provide the opportunity for Market Participants to post and view information on an electronic bulletin board about non-Resource Adequacy Capacity that may be needed or available as RA Substitute Capacity in the bilateral market. Use of the bulletin board is voluntary and is for informational purposes only.

40.9.4 Additional Rules on Calculating Monthly and Daily Average Availability

- (a) The CAISO shall determine a resource's monthly average availability on a percentage basis, based on:

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- (1) the availability assessment of the resource's minimum daily availability of local and/or system Resource Adequacy Capacity under Section 40.9.3.1, Flexible RA Capacity under Section 40.9.3.2, and overlapping Resource Adequacy commitments under Section 40.9.3.3, in the Day-Ahead Market and Real-Time Market;
 - (2) separately-calculated availability assessments for local and/or system Resource Adequacy Capacity in one category and Flexible RA Capacity in a second category, with availability in an hour with overlapping commitments under Section 40.9.3.3 accounted for in the Flexible RA Capacity category availability assessment;
 - (3) The relative daily proportion of capacity as provided as local and/or system Resource Adequacy Capacity and Flexible RA Capacity, including both overlapping and non-overlapping commitments based on the Availability Assessment of Hours;
 - (4) the capacity, duration, and must-offer requirement for local and/or system Resource Adequacy Capacity or Flexible RA Capacity on an Outage, except to the extent the resource provides RA Substitute Capacity for the outage in accordance with Section 40.9.3.6, the Outage is approved by the CAISO without requiring RA Substitute Capacity under other authority of Section 9 or Section 40, or the Forced Outage is excluded from RAAIM under Section 40.9.3.4; and
 - (5) the capacity, duration, and must-offer requirement for any RA Substitute Capacity or CPM Capacity the resource is committed to provide.
- (b) If the resource's minimum daily availability is the same in the Day-Ahead Market and the Real-Time Market, the CAISO will use the availability in the Real-Time Market in the calculation of the monthly average availability.
- (c) If the resource is committed to provide local and/or system RA capacity and Flexible RA Capacity in a month, but is not committed to provide both for the full month, the CAISO prorates the number of days that local and/or system Resource Adequacy Capacity and

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Flexible RA Capacity was provided against the total number of days in the month.

40.9.5 Availability Standard

- (a) **Percentage.** The Availability Standard shall be 96.5 percent each month.
- (b) **Availability Range.** The CAISO shall apply the Availability Standard with a bandwidth of plus and minus two percent, which produces a range with a lower bound of 94.5 percent and an upper bound of 98.5 percent.

[Petition for Limited Tariff Waiver to Process out-of-time requests for Scheduling Coordinators to Recertify Units as Acquired Resources was granted by FERC in Docket No. ER18-857.]

40.9.6 Non-Availability Charges and Availability Incentive Payments

- (a) **Non-Availability Charges.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment in accordance with Section 40.9.3 and whose monthly availability calculation under Section 40.9.4 is below the lower bound of the monthly Availability Standard of 94.5 percent will be subject to a Non-Availability Charge for the month.
- (b) **Availability Incentive Payments.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment under Section 40.9.3 and whose availability calculation under Section 40.9.4 is above the upper bound of the monthly Availability Standard of 98.5 percent will be eligible for an Availability Incentive Payment for the month.
- (c) **No Payment or Charge.** A resource providing local and/or system Resource Adequacy Capacity, Flexible RA Capacity, or CPM Capacity that is subject to the availability assessment under Section 40.9.3 and whose monthly availability calculation under Section 40.9.4 is equal to or between the lower bound of 94.5 percent and the upper bound of 98.5 percent of the Availability Standard will not be assessed a Non-Availability Charge nor paid an Availability Incentive Payment.
- (d) **Advisory Period.** During an advisory period of April 1, 2018 through May 31, 2018, the CAISO will show the Non-Availability Charges and Availability Incentive Payments on Settlement Statements but will not include those Non-Availability Charges and Availability

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Incentive Payments on Invoices for financial settlement.

- (e) **Separate Calculation of Payments and Charges for Flexible RA Capacity.** The CAISO will calculate separate Non-Availability Charges and Availability Incentive Payments for Resource Adequacy Resources providing Flexible RA Capacity.

40.9.6.1 Determination of Non-Availability Charge

(a) **Calculation**

- (1) **RA Capacity.** The Non-Availability Charge for a Resource Adequacy Resource providing local, system, or Flexible RA Capacity shall be determined by the resource's average monthly RA and Flexible RA MWs multiplied by the difference between the lower bound of the monthly Availability Standard of 94.5 percent and the resource's monthly availability percentage, and multiplying the product by the RAAIM price.
- (2) **CPM Capacity.** The Non-Availability Charge for a Resource Adequacy Resource providing CPM Capacity shall be determined by the resource's average monthly CPM MWs multiplied by the difference between the lower bound of the monthly Availability Standard of 94.5 percent and the resource's monthly availability percentage, and multiplying the product by the maximum of the resource's CPM price and the RAAIM price.
- (b) **RAAIM Price.** The RAAIM price shall be 60 percent of the CPM Soft-Cap Price in Section 43A.4.1.1.
- (c) **Separate Collection of Non-Availability Charges for Flexible RA Capacity.** Separately-calculated Non-Availability Charges collected for Resource Adequacy Resources providing Flexible RA Capacity will be held separate from other Non-Availability Charges assessed for Resource Adequacy Resources.

40.9.6.2 Determination of Availability Incentive Payment

- (a) **Self-Funding.** The Availability Incentive Payment will be funded entirely through the monthly Non-Availability Charges assessed. Availability Incentive Payments for Resource Adequacy Resources providing Flexible RA Capacity will be funded exclusively

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by Non-Availability Charges assessed against Resource Adequacy Resources providing Flexible RA Capacity.

- (b) **Eligible Capacity.** The capacity of a Resource Adequacy Resource providing local, system or Flexible RA Capacity that is eligible to receive an Availability Incentive Payment shall be the resource's average monthly MWs of capacity that exceed the upper bound of the Availability Standard.
- (c) **Calculation.**
- (1) The monthly Availability Incentive Payment rate will equal the total Non-Availability Charges assessed for the month plus any unpaid funds under Section 40.9.6.2(d), divided by the total Resource Adequacy Capacity eligible to receive the Availability Incentive Payment that month.
 - (2) The Availability Incentive Payment rate shall not exceed three times the Non-Availability Charge rate.
 - (3) The Availability Incentive Payment the CAISO shall pay to each eligible resource shall equal the product of its eligible capacity and the Availability Incentive Payment rate.
- (d) **Unpaid Funds.** Any Non-Availability Charge funds that are not distributed to Resource Adequacy Resources eligible to receive Availability Incentive Payments in a month will be added to the funds available for Availability Incentive Payments in the next month and will continue to roll over to the successive month until paid out or December 31, at which time the separate pool of undistributed Non-Availability Charge funds collected for local and/or system Resource Adequacy Capacity will be distributed to Load Serving Entities based on their load ratio share for the year. The separate pool of undistributed Non-Availability Charge funds collected for Flexible RA Capacity will be distributed to Load Serving Entities based on their overall ratio of obligation to demonstrate Flexible RA Capacity for the year.

40.9.7 Reporting

By July 1 of each year, the CAISO will provide an informational report that will be posted on the CAISO Website and include information on the average actual availability each month of Resource Adequacy Resources, the total amount of Non-Availability Charges assessed and the total amount of Availability Incentive Payments made.

40.10 Flexible RA Capacity

40.10.1 Flexible Capacity Needs Assessment

The CAISO shall annually conduct a study to determine the Flexible Capacity Need of the CAISO Balancing Authority Area for each month of the next calendar year and provide the results of the study in the Flexible Capacity Needs Assessment.

40.10.1.1 Process

- (a) **Schedule.** The CAISO shall conduct the study pursuant to the schedule set forth in the Business Practice Manual, which shall include a process for stakeholders to review and provide input on the study methodology and assumptions and on the draft study results.
- (b) **Completion and Distribution.** The CAISO shall provide the final results of the Flexible Capacity Needs Assessment to each Local Regulatory Authority in the CAISO Balancing Authority Area and post the Flexible Capacity Needs Assessment on the CAISO Website no later than 120 days prior to the date that the annual Flexible RA Capacity Plans must be submitted under Section 40.

40.10.1.2 Required Information from LSEs

- (a) **Submission Requirement.** The Scheduling Coordinator for each Load Serving Entity in the CAISO Balancing Authority Area shall submit the information required by this Section, no later than January 15 each year, for use in the CAISO's study to generate minute-by-minute net-load data that will be used to determine the Maximum Three-Hour Net-Load Ramp for each month.
- (b) **Required Information.** The Scheduling Coordinator for each Load Serving Entity in the CAISO Balancing Authority Area must submit information that –

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- (1) covers the calendar year in which the information is submitted and each year in the next five-year period;
 - (2) identifies each wind and solar resource connected to the CAISO Controlled Grid, and distributed wind and solar resources, that is owned, in whole or in part, by the Load Serving Entity, or under contractual commitment to the Load Serving Entity or the Load-following MSS Load Serving Entity, for all or a portion of its capacity;
 - (3) indicates the status of the resource as either in service or in development with its expected commercial operation date;
 - (4) for each wind and solar resource, specifies the MWs of installed capacity, renewable energy area location, MWs of flexible capacity owned by or contractually committed to the Load Serving Entity, and other information required by the Business Practice Manual;
 - (5) describes the balancing services, if any, provided by another balancing authority area for a wind or solar resource that is located outside of the CAISO Balancing Authority Area and that is owned by or contractually committed to the Load Serving Entity; and
 - (6) forecasts the MW of installed, behind-the-meter solar capacity in the Load Serving Entity's service area or part of its forecast served load.
- (c) **Confidential Treatment.** The CAISO will treat the resource-specific information provided under Section 40.10.1.2(b) as confidential under Section 20.
- (d) **Aggregated Information.** In addition to the required resource-specific information, the Scheduling Coordinator for each Load Serving Entity in the CAISO Balancing Authority Area shall submit the information required in Section 40.10.1.2(b) on an aggregated basis, as described in the Business Practice Manual, for inclusion in the Flexible Capacity Needs Assessment that will be posted on the CAISO Website.