

Attachment A

Clean Tariff

Tariff Amendment to Implement the Resource Adequacy Enhancements Phase 1

Initiative – Summer 2021 Provisions

California Independent System Operator Corporation

March 29, 2021

9.3.1.3 Coordinating Outages of RA Resources

9.3.1.3.1 Maintenance Outages Requested Before Cure Period

Other than Outage types identified in Section 9.3.1.3.3, the CAISO denies Maintenance Outage requests or Approved Maintenance Outages on RA Resources requested before the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place if the Scheduling Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan. The RA Substitute Capacity must be provided by the monthly RA Substitute Capacity deadline established in the Business Practice Manual, which cannot be more than 72 hours after the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place.

Once the CAISO grants final approval for a Maintenance Outage and the Outage has commenced, the CAISO does not subsequently deny the Outage for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.

9.3.1.3.2 Maintenance Outages Requested After Cure Period

Other than Outage types identified in Section 9.3.1.3.3, the CAISO denies Maintenance Outage requests on RA Resources submitted after the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place if the Scheduling Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the requested Maintenance Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan. The RA Substitute Capacity must be provided by the post-monthly RA Substitute Capacity deadline established in the Business Practice Manual, which cannot be no more than 72 hours after the Outage request.

Once the CAISO grants final approval for a Maintenance Outage and the Outage has commenced, the CAISO does not subsequently deny the Outage for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the

Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.**9.3.1.3.3 Exceptions to Requirement to Provide RA Substitute Capacity**

The CAISO does not automatically deny an Outage pursuant to Section 9.3.1.3.1 or Section 9.3.1.3.2 if the Maintenance Outage is: (a) an Off-Peak Opportunity RA Maintenance Outage approved Pursuant to Section 9.3.1.3.6; (b) caused by an Outage on transmission facilities in the CAISO Controlled Grid; or (c) on RA Capacity that is solely Flexible RA Capacity.

9.3.1.3.4 Cancellation or Denial of Maintenance Outages for Reasons other than Lack of RA Substitute Capacity

Notwithstanding provision of RA Substitute Capacity, the CAISO may deny, reschedule or cancel a Maintenance Outage on a RA Resource if it determines that the Outage is likely to have a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid or the facilities of a Connected Entity.

9.3.1.3.5 Obligations of RA Substitute Capacity

RA Substitute Capacity provided pursuant to Section 9.3.1.3.1 or Section 9.3.1.3.2 is subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed on Resource Adequacy Resources by the CAISO Tariff, including the must-offer obligations in Section 40.6 and the RAAIM provisions in Section 40.9, for the MW amount and duration of the outage substitution period, which includes the full day of the start date and the full day of the end date of the outage.

9.3.1.3.6 Off-Peak Opportunity RA Maintenance Outage

- (a) **Option for Off-Peak Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for an Off-Peak Opportunity RA Maintenance Outage without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAAIM calculation under Section 40.9.
- (b) **Request.** A request for an Off-Peak Opportunity RA Maintenance Outage must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date for the outage;

(ii) schedule the outage to begin during off-peak hours (as specified in the Business Practice Manuals) on a weekday, and to be completed prior to on-peak hours (as specified in the Business Practice Manuals) the following weekday, or to begin during off-peak hours (as specified in the Business Practice Manuals) on Friday, or on Saturday, Sunday, or a holiday, and to be completed prior to on-peak hours (as specified in the Business Practice Manual) on the next weekday; and (iii) otherwise comply with the requirements set forth in Section 9.

(c) **Approval.**

- (1) The CAISO will consider requests for an Off-Peak Opportunity RA Maintenance Outage in the order the requests were received.
- (2) If the request was submitted no less than eight (8) days prior to the start date for the outage, the CAISO may approve the request as an Off-Peak Opportunity RA Maintenance Outage if it determines that: (i) the request meets the requirements set forth in Section 9.3.1.3.6(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.
- (3) If the CAISO denies a request for an Off-Peak Opportunity RA Maintenance Outage for failing to meet the requirements in Section 9.3.1.3.6(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.
- (4) To the extent that an approved Off-Peak Opportunity RA Maintenance Outage is not completed during off-peak hours as scheduled, and extends into on-peak hours, the Scheduling Coordinator for the resource shall submit the portion of the outage that extends into on-peak hours as a new Forced Outage, which shall be subject to the RAIM provisions in Section 40.9.

9.3.1.3.7 Short-Notice Opportunity RA Outage

- (a) **Option for Short-Notice Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for a Short-Notice Opportunity RA Outage without a requirement to provide RA Substitute Capacity for the Resource Adequacy Capacity that will be on the Forced Outage to be excluded from the RAIM calculation under Section 40.9.
- (b) A Short-Notice Opportunity RA Outage shall not exceed five days in length. The request for a Short-Notice Opportunity RA Outage must: (i) be submitted no more than seven (7) days prior to the requested start date for the outage; (ii) provide the CAISO adequate time to analyze the request before the outage begins; (iii) be submitted before the outage has commenced as a Forced Outage; and (iv) otherwise comply with the requirements of Section 9.
- (c) **Approval.**
 - (1) The CAISO will consider Short-Notice Opportunity RA Outages in the order the requests are received.
 - (2) If the request was submitted no more than seven days and no less than four days prior to the start date of the outage, the CAISO may approve the request as a Short Notice Opportunity RA Outage if it determines that: (i) the outage and the request meet the requirements set forth in Section 9.3.1.3.7(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The approved outage will be a Forced Outage and will not be subject to the RAIM provisions in Section 40.9.
 - (3) If the request was submitted three days or less prior to the start date of the outage, the CAISO may approve the request as a Forced Outage if it determines

that: (i) the outage and request meet the requirements set forth in Section 9.3.1.3.7(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period; and (iv) the repairs are necessary to maintain system or resource reliability and require immediate attention to prevent equipment damage or failure. A Short-Notice Opportunity RA Outage approved under this Section will be a Forced Outage and will not be subject to the RAIM provisions in Section 40.9.

- (4) To the extent that an approved Short-Notice Opportunity RA Outage is not completed during the originally approved outage schedule, the Scheduling Coordinator for the resource must submit the portion of the outage that continues from the approved completion time until the time the outage is actually completed as a new Forced Outage, which will be subject to the RAIM provisions in Section 40.9.

9.3.1.3.8 Outage Reporting for Resource Adequacy Resources between 1 MW and 10 MW

Scheduling Coordinators for Resource Adequacy Resources with a PMax of at least one (1) MW but less than 10 MWs that do not meet the requirement to provide information on Forced Outages in accordance with Section 9.3.10 shall report Outages in accordance with the process set forth in the Business Practice Manual.

9.3.1.3.9 Transition Period for Providing RA Substitute Capacity for Maintenance Outages

Notwithstanding Sections 9.3.1.3.1 and 9.3.1.3.2, Maintenance Outages on RA Resources in the June 2021 and July 2021 RA months require RA Substitute Capacity as follows to avoid Outage denial.

Maintenance Outage requests or Approved Maintenance Outages on RA Resources taken in June 2021 are reviewed for RA Substitute Capacity per the provisions of part 2 of Appendix J.

The CAISO denies Maintenance Outage requests or Approved Maintenance Outages on RA Resources planned to start or continue in July 2021 and that were requested before June 6, 2021, if the Scheduling

Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan. The RA Substitute Capacity must be provided by the July 2021 monthly RA Substitute Capacity deadline established in the Business Practice Manual. Maintenance Outage requests on RA Resources planned to start in July 2021 that are requested on or after June 6, 2021, are reviewed for RA Substitute Capacity per Section 9.3.1.3.2.

The CAISO will not subsequently deny a Maintenance Outage on a RA Resource that it permits to commence in July 2021 for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.

9.3.2 Requirement for Approval

An Operator or Scheduling Coordinator shall not take: (i) facilities that comprise the CAISO Controlled Grid; or (ii) Generating Units of Participating Generators out of service for the purposes of planned maintenance or for new construction or other work except as approved by the CAISO, except that final approval may not be required for a Transmission Maintenance Outage as provided in Section 9.3.9.1. The information relating to each Maintenance Outage submitted by a Participating Generator in accordance with Section 9.3.5, or by a Participating TO in accordance with Section 9.3.5, constitutes a request for a long-range Maintenance Outage and is not considered an Approved Maintenance Outage until the CAISO has notified the Participating Generator of such approval pursuant to Section 9.3.6, or the Participating TO pursuant to Section 9.3.6.

9.3.3 Request Submission and Information

The Operator or Scheduling Coordinator of facilities that comprise the CAISO Controlled Grid or of a Participating Generator, Participating Intermittent Resource, Generating Unit, System Unit, Physical Scheduling Plant, Proxy Demand Resource, Reliability Demand Response Resource, Non-Generation Resource, Participating Load, or other resource subject to the outage management requirements of Section 9, shall use the ISO's outage management system to –

- (1) Submit all outage requests under Section 9.
- (2) Provide the required information about the outage and work to be performed using the nature of work categories described in the Business Practice Manual.
- (3) For transmission outage requests, additionally provide structured and detailed outage modeling information at the facility level and/or the breaker/switch level. If the work to be performed will require a switch position to change during the outage period, the Operator or Scheduling Coordinator must submit a separate outage request for each configuration.
- (4) For resource outage requests, additionally provide the required information for the resource at the aggregate project or plant level, and also at the individual unit level for a unit de-rate greater than 50 MW, and any limitations on the resource's availability to provide each type of ancillary service for which it is certified.
- (5) Notify the CAISO of temporary changes in physical characteristics specified in the Master File, including the PMax, Minimum Load, and Ramping capability of the unit, due to changes in their actual physical characteristics. Changes in the physical characteristics related to Minimum Load shall only be for temporary increases in Minimum Load due to ambient temperature, outages of mechanical equipment, or environmental regulations.
- (6) For Outages that involve extending or increasing the scheduled duration of an Outage or MW amount of capacity on Outage, respectively, submit a new Outage request to cover the extension or increase in the extent of the Outage.

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40.3 Local Capacity Area Resource Requirements for SCs for LSEs

40.3.1 Local Capacity Technical Study

On an annual basis, pursuant to the schedule set forth in the Business Practice Manual, the CAISO will, perform, and publish on the CAISO Website the Local Capacity Technical Study. The Local Capacity Technical Study shall identify Local Capacity Areas, determine the minimum amount of Local Capacity Area Resources in MW that must be available to the CAISO within each identified Local Capacity Area,

and identify the Generating Units within each identified Local Capacity Area. The CAISO shall collaborate with the CPUC, Local Regulatory Authorities within the CAISO Balancing Authority Area, federal agencies, and Market Participants to ensure that the Local Capacity Technical Study is performed in accordance with this Section 40.3 and to establish for inclusion in the Business Practice Manual other parameters and assumptions applicable to the Local Capacity Technical Study and a schedule that provides for: (i) reasonable time for review of a draft Local Capacity Technical Study, (ii) reasonable time for Participating TOs to propose operating solutions, and (iii) release of the final Local Capacity Technical Study no later than 120 days prior to the date annual Resource Adequacy Plans must be submitted under this Section 40.

40.3.1.1 Local Capacity Technical Study Criteria

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. The Local Capacity Technical Study also will consider hourly load shapes and system limits under emergency conditions to quantify minimum amounts of hourly capacity and energy, that Local Capacity Area Resources must be able to provide within each identified Local Capacity Area in order to resolve Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided in NERC Reliability Standards regarding Transmission System Planning Performance Requirements (TPL-001-4 or its successor), as augmented by CAISO Reliability Criteria in accordance with the Transmission Control Agreement and Section 24.3.1. The CAISO Reliability Criteria shall include:

- (1) Time Allowed for Manual Readjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. This time should not be more than thirty (30) minutes.
- (2) No voltage collapse or dynamic instability shall be allowed for a Contingency in Category Extreme Events [any P1 system readjusted (Common Structure) P7], as listed in TPL-001-4 in areas with load of 250 MW or more. For areas with less than 250 MW of load, mitigation will only be proposed if there is a risk of cascading beyond the area directly

affected by the outage.

40.3.1.2 Local Capacity Technical Study Contingencies.

The Local Capacity Technical Study shall assess all the Contingencies and appropriate performance levels required by mandatory standards including, but not limited to, NERC, WECC and CAISO Planning Standards.

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40.5 Minimum State of Charge Tool for Non-Generator Resources Electing Limited Energy Storage Resource Status that Provide RA Capacity

40.5.1 Operation of the MSOC Tool

Through June 1, 2023, the CAISO enforces the MSOC Tool in the RTM on any Non-Generator Resource that has selected a primary fuel type in Master File of “Limited Energy Storage Resource” and is an RA Resource for the day on which the MSOC is enforced. The MSOC Tool limits RTM awards to any covered resource in the market intervals preceding any Trading Hour that meets the requirements specified in Section 40.5.2 such that, based on its registered operating parameters, the resource will have sufficient charge to meet its discharge awards from its Day-Ahead Schedule for any Trading Hour that meets the requirements specified in Section 40.5.2. The MSOC tool does not increase the charge on a resource beyond what is necessary to ensure it can meet a discharge award from a Day-Ahead Schedule.

When reviewing market and system conditions on the Operating Day, the CAISO may choose not to apply the MSOC Tool for particular Trading Hours if its assessment of projected conditions reflects that the MSOC Tool is not necessary for system reliability in those Trading Hours.

40.5.2 Determining the Days and Hours for which the MSOC Applies

The CAISO enforces the MSOC Tool for a Trading Day if there is at least one Trading Hour on that Trading Day for which, per Section 31.5.5, the RUC process initially cannot find a feasible solution without adjusting the constraints described in Section 31.5.4. For such Trading Days, the MSOC Tool applies to discharge awards from Day-Ahead Schedules for the Trading Hours that the CAISO projects, at the time the Day-Ahead Market runs, will have the highest CAISO system load net of wind and solar output.

40.5.3 Notification of Applying the MSOC ToolAt approximately the same time it publishes Day-

Ahead Market Results for a Trading Day, the CAISO provides public notice if the Trading Day will be subject to enforcement of the MSOC Tool and, if so, the Trading Hours whose discharge awards will be subject to the MSOC Tool.

40.5.4 [Not Used]

40.5.5 [Not Used]

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40.9.3.4 Treatment of Outages

- (a) **RA Substitute Capacity Not Required.** The RAIM 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.
- (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 RAIM charges –
 - (1) the RAIM 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 RAIM 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 RAIM 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 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 RAAIM charges, the RAAIM 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 RAAIM for certain Outage types.** The RAAIM Availability Assessment excludes the capacity, duration, and must-offer requirement for local and/or system Resource Adequacy Capacity or Flexible RA Capacity on an Outage in a nature of work category specified in the Business Practice Manual that relates to: (i) an administrative action by the resource owner; (ii) a cause outside of the control of the resource owner, (iii) or a short-term use limitation; or (iv) a non-Run-of-River Resource hydroelectric Generating Unit's management of water-related operational or regulatory limitations. Through the December 31, 2020, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit that has limited the capacity it has shown on the monthly Supply Plan corresponding to the day of the Outage to reflect historical hydrological conditions or actual hydrological conditions in 2020. The limitations based on hydrological conditions must be mutually agreed upon with the unit's Scheduling Coordinator and the CAISO. Starting with the January 1, 2021, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit whose Qualifying Capacity was established pursuant to a CPUC or Local Regulatory Authority methodology under which the Qualifying Capacity is calculated to reflect historical hydrological conditions.
- (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 RAAIM 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 [Not Used]

40.9.3.6.2 CAISO Evaluation of Need for Substitute Capacity for Forced Outages

A Forced Outage on a RA Resource, irrespective of whether the resource is providing RA Capacity or Flexible RA Capacity, subjects the resource's Scheduling Coordinator to RAAIM unless the Scheduling Coordinator for the resource provides RA Substitute Capacity by the deadline specified in the relevant Business Practice Manual, the outage is exempt from RAAIM as set forth in Section 9 or Section 40, the outage is cancelled, or the outage is rescheduled.

40.9.3.6.3 General Provisions on Substitute Capacity

(a) **Substitution** 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, including Legacy 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.

- (4) RA Substitute Capacity shall not qualify to be RMR Capacity, including Legacy 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

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 resource as RA Substitute Capacity, the Scheduling

Coordinator for RA Capacity other than Listed Local RA Capacity that has an 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).

- (2) **Approval.** The CAISO will grant the request if the alternate resource has adequate deliverable capacity to provide the RA Substitute Capacity and meets the requirements in Sections 40.9.3.6.4(c)(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 an Outage 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 40.9.3.6.4(d)(1) and 40.9.3.6.3(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).
 - (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.

* * * *

40.9.4 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:

- (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 Outage is excluded from RAAIM under Section 40.9.3.4(d); 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

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

* * *

43A.2.2 Collective Deficiency in Local Capacity Area Resources

The CAISO shall have the authority to designate CPM Capacity where the Local Capacity Area Resources (irrespective of status as Listed Local RA Capacity) specified in the annual Resource Adequacy Plans of all applicable Scheduling Coordinators, after the opportunity to cure under Section 43A.2.2.1 has been exhausted, fail to ensure compliance in one or more Local Capacity Areas with the Local Capacity Technical Study criteria provided in Section 40.3.1.1, regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity Technical Study, and after assessing during all hours the effectiveness of Generating Units under RMR Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans, whether or not such Generating Units under RMR Contracts and Resource Adequacy Resources are located in the applicable Local Capacity Area. The CAISO may, pursuant to this Section 43A.2.2, designate CPM Capacity in an amount and location sufficient to ensure compliance during all hours with the Reliability Criteria applied in the Local Capacity Technical Study.

43A.2.2.1 LSE Opportunity to Resolve Collective Deficiency in Local Capacity Area Resources

Where the CAISO determines that a need for CPM Capacity exists under Section 43A.2.2, but prior to any designation of CPM Capacity, the CAISO shall issue a Market Notice identifying the deficient Local Capacity Area and the quantity of capacity that would permit the deficient Local Capacity Area to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1 and, where only specific resources are effective to resolve the Reliability Criteria deficiency, the CAISO shall provide the identity of such resources. Any Scheduling Coordinator may submit a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year demonstrating procurement of additional Local Capacity Area Resources consistent with the Market Notice issued under this Section.

Any Scheduling Coordinator that provides such additional Local Capacity Area Resources consistent with the Market Notice under this Section shall have its share of any CPM procurement costs under Section 43A. 8.3 reduced on a proportionate basis. If the full quantity of capacity is not reported to the CAISO under revised annual Resource Adequacy Plans in accordance with this Section, the CAISO may designate CPM Capacity sufficient to alleviate the deficiency.

* * *

Appendix A

- Minimum State of Charge (MSOC) Tool

A functionality in the RTM that limits awards for a Non-Generator Resource that has selected a primary fuel type in Master File of "Limited Energy Storage Resource" and is an RA Resource such that they will have sufficient charge to meet the discharge elements of their Day-Ahead Schedule.

* * *

Appendix J

LEGACY STANDARD CAPACITY PRODUCT AND RA SUBSTITUTE CAPACITY PROVISIONS

Part 1 – Legacy Standard Capacity Product Provisions

Notwithstanding any other provisions of the CAISO Tariff, the following provisions shall apply pursuant to Section 40.9.2.1(a)(1).

40.9.2 Exemptions

The following exemptions apply to the CAISO's Availability Standards program of this Section 40.9:

- (1) Capacity under a resource specific power supply contract that existed prior to June 28, 2009 and Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval prior to June 28, 2009, and is associated with specific Generating Units or System Resources, will not be subject to Non-Availability Charges or Availability Incentive Payments. Such contracted Resource Adequacy Capacity, except for non-Resource-

Specific System Resources, will be included in the development of Availability Standards and will be subject to any Outage reporting requirements necessary for this purpose.

The exemption will apply only for the initial term of the contract and to the MW capacity quantity and Resource Adequacy Resources specified in the contract prior to June 28, 2009. The exemption shall terminate upon the conclusion of the initial contract term.

Exempt contracts may be re-assigned or undergo novation on or after June 28, 2009, but the exemption shall not apply for any extended contract term, increased capacity quantity or additional resource(s) beyond those specified in the contract prior to June 28, 2009,

except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to these contracts will be required to certify the start date of the contract, the expiration date, the Resource ID(s), and the amount of Resource Adequacy Capacity associated with each Resource ID included in the contract.

For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output, the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (2) will not be subject to Non-Availability Charges or Availability Incentive Payments, except that the deadline date for either type of contract shall be August 22, 2010 instead of June 28, 2009.

- (2) For a contract entered into prior to June 28, 2009 that provides for the amount of Resource Adequacy Capacity to increase during the original term of the contract, based on a ratio of the Resource Adequacy Resource's output or due to an addition of capacity, the exemption provided in subsection (2) of this Section 40.9.2 will apply to the additional capacity allowed under the contract; provided that the capacity increase (i) is expressly contained in the provisions of the contract, (ii) occurs during the primary term of the contract; and (iii) does not result from contract extensions or other amendments to the original terms and conditions of the contract, except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to

contracts that provide for such capacity increases or additions must include in their certification, in addition to the requirements of subsection (2) of this Section 40.9.2, (i) the citation to any contract provisions that might entitle them to increased exempt Resource Adequacy Capacity from the contracted resources during the primary term of the contract; (ii) the amount of additional capacity to which they might be entitled; and (iii) the actual effective date of the capacity increase. If the actual amount of capacity and/or the actual effective date of the capacity increase is not known at the time of the initial certification, the Scheduling Coordinator shall provide a supplemental certification(s) when this information becomes known. For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output the exemption provided in subsection (2) of this Section 40.9.2 will apply to an increase in the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (3), except that the deadline date for either type of contract to be exempt shall be August 22, 2010 instead of June 28, 2009.

Part 2 – Legacy RA Substitute Capacity Provisions

Notwithstanding any other provisions of the CAISO Tariff, the following provisions apply to Outages on RA Resources taken in June 2021. In all other respects, the CAISO Tariff, including the provisions of Sections 9 and 40 not covered in this Appendix J, apply to Outages on RA Resources taken in June 2021.

9.3.1.3 Coordinating Outages of RA Resources

In performing outage coordination management under Section 9, and this Section 9.3.1.3, the CAISO may take into consideration the status of a Generating Unit as a Resource Adequacy Resource, including whether it is Listed Local RA Capacity. The CAISO may deny, reschedule or cancel an Approved Maintenance Outage for facilities that comprise the CAISO Controlled Grid or Generating Units of Participating Generators if it determines that the outage is likely to have a detrimental effect on the availability of Resource Adequacy Capacity or the efficient use and reliable operation of the CAISO

Controlled Grid or the facilities of a Connected Entity.

9.3.1.3.1 [Not Used]

9.3.1.3.2 [Not Used]

9.3.1.3.3 Substitution Opportunity for RA Resources

To the extent that a resource is committed to provide Resource Adequacy Capacity during a month, the Scheduling Coordinator for the resource may request an RA Maintenance Outage With Substitution, RA Maintenance Outage Without Substitution, Off Peak Opportunity RA Maintenance Outage, or Short-Notice Opportunity RA Outage, or may request to reschedule an Approved Maintenance Outage, for that Resource Adequacy Capacity in accordance with the provisions of this Section. The timelines set forth in this Section for submitting an Outage request and classifying the outage as a Maintenance Outage or a Forced Outage exclude the day that the request is submitted and the day that the outage is scheduled to commence.

9.3.1.3.3.1 RA Maintenance Outage With Substitution

- (a) **Substitution Option.** The Scheduling Coordinator of a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a planned Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage With Substitution during that month.
- (b) **Request.** A request for an RA Maintenance Outage With Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start of the outage; (ii) provide RA Substitution Capacity in an amount no less than the amount of Resource Adequacy Capacity that would be on scheduled outage; and (iii) otherwise comply with the requirements set forth in Section 9.
- (c) **Approval.**
 - (1) The CAISO will consider requests for an RA Maintenance Outage With Substitution in the order that the requests are received.
 - (2) The CAISO may approve the request for an RA Maintenance Outage With Substitution if it determines that: (i) the request meets the requirements in

Section 9.3.1.3.3.1(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.

- (3) If the request was submitted no less than eight (8) days prior to the start date for the outage, and it meets the requirements in Section 9.3.1.3.3.1(c)(2) the CAISO may approve the request as an RA Maintenance Outage With Substitution.
- (4) If the CAISO denies the request for failing to meet the requirements in Section 9.3.1.3.3.1(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request a different schedule for the RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage without RA Substitute Capacity at another time.

- (d) **Resource Adequacy Obligation.** The RA Substitute Capacity for an RA Maintenance Outage With Substitution approved under Section 9.3.1.3.3.1(c)(3) shall be subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed on Resource Adequacy Resources by the CAISO Tariff, including the must-offer obligations in Section 40.6 and the RAIM provisions in Section 40.9, for the MW amount and duration of the outage substitution period, which includes the full day of the start date and the full day of the end date of the outage.

9.3.1.3.3.2 RA Maintenance Outage Without Substitution

- (a) **Option for No Substitution.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage Without Substitution, without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAIM calculation under Section 40.9.
- (b) **Request.** A request for an RA Maintenance Outage Without Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date of the outage;

and (ii) otherwise comply with the requirements of Section 9.

(c) **Approval.**

- (1) The CAISO will consider requests received for an RA Maintenance Outage Without Substitution in the order the requests were received.
- (2) The CAISO may approve a request for an RA Maintenance Outage Without Substitution if it determines that: (i) the request meets the requirements in Section 9.3.1.3.3.2(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The analysis of system conditions and the overall outage schedule will include Approved Maintenance Outage requests that were received before and after the request for an RA Maintenance Outage Without Substitution.
- (3) The CAISO will not approve a request for an RA Maintenance Outage Without Substitution earlier than seven days before the first day of the resource adequacy month, and may hold the request as pending until system conditions are sufficiently known for the CAISO to determine whether the outage meets the requirements in Section 9.3.1.3.3.2(c)(2).
- (4) If the CAISO denies a request for an RA Maintenance Outage Without Substitution for failing to meet the requirements in Section 9.3.1.3.3.2(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.

9.3.1.3.3.3 Off-Peak Opportunity RA Maintenance Outage

- (a) **Option for Off-Peak Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for an Off-Peak Opportunity RA Maintenance Outage

without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAIM calculation under Section 40.9.

- (b) **Request.** A request for an Off-Peak Opportunity RA Maintenance Outage must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date for the outage; (ii) schedule the outage to begin during off-peak hours (as specified in the Business Practice Manuals) on a weekday, and to be completed prior to on-peak hours (as specified in the Business Practice Manuals) the following weekday, or to begin during off-peak hours (as specified in the Business Practice Manuals) on Friday, or on Saturday, Sunday, or a holiday, and to be completed prior to on-peak hours (as specified in the Business Practice Manual) on the next weekday; and (iii) otherwise comply with the requirements set forth in Section 9.

(c) **Approval.**

- (1) The CAISO will consider requests for an Off-Peak Opportunity RA Maintenance Outage in the order the requests were received.
- (2) If the request was submitted no less than eight (8) days prior to the start date for the outage, the CAISO may approve the request as an Off-Peak Opportunity RA Maintenance Outage if it determines that: (i) the request meets the requirements set forth in Section 9.3.1.3.3.3(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.
- (3) If the CAISO denies a request for an Off-Peak Opportunity RA Maintenance Outage for failing to meet the requirements in Section 9.3.1.3.3.3(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.
- (4) To the extent that an approved Off-Peak Opportunity RA Maintenance Outage is not completed during off-peak hours as scheduled, and extends into on-peak

hours, the Scheduling Coordinator for the resource shall submit the portion of the outage that extends into on-peak hours as a new Forced Outage, which shall be subject to the RAIM provisions in Section 40.9.

9.3.1.3.3.4 Short-Notice Opportunity RA Outage

- (a) **Option for Short-Notice Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for a Short-Notice Opportunity RA Outage without a requirement to provide RA Substitute Capacity for the Resource Adequacy Capacity that will be on the Forced Outage to be excluded from the RAIM calculation under Section 40.9.
- (b) A Short-Notice Opportunity RA Outage shall not exceed five days in length. The request for a Short-Notice Opportunity RA Outage must: (i) be submitted no more than seven (7) days prior to the requested start date for the outage; (ii) provide the CAISO adequate time to analyze the request before the outage begins; (iii) be submitted before the outage has commenced as a Forced Outage; and (iv) otherwise comply with the requirements of Section 9.
- (c) **Approval.**
 - (1) The CAISO will consider Short-Notice Opportunity RA Outages in the order the requests are received.
 - (2) If the request was submitted no more than seven days and no less than four days prior to the start date of the outage, the CAISO may approve the request as a Short Notice Opportunity RA Outage if it determines that: (i) the outage and the request meet the requirements set forth in Section 9.3.1.3.3.4(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The approved outage will be a Forced Outage and will not be subject to the

RAAIM provisions in Section 40.9.

- (3) If the request was submitted three days or less prior to the start date of the outage, the CAISO may approve the request as a Forced Outage if it determines that: (i) the outage and request meet the requirements set forth in Section 9.3.1.3.3.4(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period; and (iv) the repairs are necessary to maintain system or resource reliability and require immediate attention to prevent equipment damage or failure. A Short-Notice Opportunity RA Outage approved under this Section will be a Forced Outage and will not be subject to the RAAIM provisions in Section 40.9.
- (4) To the extent that an approved Short-Notice Opportunity RA Outage is not completed during the originally approved outage schedule, the Scheduling Coordinator for the resource must submit the portion of the outage that continues from the approved completion time until the time the outage is actually completed as a new Forced Outage, which will be subject to the RAAIM provisions in Section 40.9.

9.3.1.3.4 Outage Reporting for Resource Adequacy Resources between 1 MW and 10 MW

Scheduling Coordinators or Resource Adequacy Resources with a PMax of at least one (1) MW but less than 10 MWs that do not meet the requirement to provide information on Forced Outages in accordance with Section 9.3.10 shall report Outages in accordance with the process set forth in the Business Practice Manual.

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 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 RAAIM charges, the RAAIM 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 RAAIM for certain Outage types.** The RAAIM Availability Assessment excludes the capacity, duration, and must-offer requirement for local and/or

system Resource Adequacy Capacity or Flexible RA Capacity on an Outage in a nature of work category specified in the Business Practice Manual that relates to: (i) an administrative action by the resource owner; (ii) a cause outside of the control of the resource owner, (iii) or a short-term use limitation; or (iv) a non-Run-of-River Resource hydroelectric Generating Unit's management of water-related operational or regulatory limitations. Through the December 31, 2020, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit that has limited the capacity it has shown on the monthly Supply Plan corresponding to the day of the Outage to reflect historical hydrological conditions or actual hydrological conditions in 2020. The limitations based on hydrological conditions must be mutually agreed upon with the unit's Scheduling Coordinator and the CAISO. Starting with the January 1, 2021, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit whose Qualifying Capacity was established pursuant to a CPUC or Local Regulatory Authority methodology under which the Qualifying Capacity is calculated to reflect historical hydrological conditions.

- (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 RAAIM 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.

40.9.3.6.2 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.

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 RAIM 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, including Legacy 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.
- (4) RA Substitute Capacity shall not qualify to be RMR Capacity, including Legacy 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 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 resource as RA Substitute Capacity, the Scheduling Coordinator for RA Capacity other than Listed Local RA Capacity that has an 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).

(2) **Approval.** The CAISO will grant the request if the alternate resource has adequate deliverable capacity to provide the RA Substitute Capacity and meets

the requirements in Sections 40.9.3.6.4(c)(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 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).

(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).
- (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 RAIM 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:
 - (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 Flexible RA Capacity was provided against the total number of days in the month.

- RA Maintenance Outage With Substitution

A Maintenance Outage, or change to an Approved Maintenance Outage, at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage and that includes RA Substitute Capacity for the Resource Adequacy Capacity on Outage.

- RA Maintenance Outage Without Substitution

A Maintenance Outage, or change to an Approved Maintenance Outage at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage without RA Substitute Capacity for the Resource Adequacy Capacity on Outage.

Attachment B

Marked Tariff

Tariff Amendment to Implement the Resource Adequacy Enhancements Phase 1

Initiative – Summer 2021 Provisions

California Independent System Operator Corporation

March 29, 2021

9.3.1.3 Coordinating Outages of RA Resources

9.3.1.3.1 Maintenance Outages Requested Before Cure Period

Other than Outage types identified in Section 9.3.1.3.3, the CAISO denies Maintenance Outage requests or Approved Maintenance Outages on RA Resources requested before the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place if the Scheduling Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan. The RA Substitute Capacity must be provided by the monthly RA Substitute Capacity deadline established in the Business Practice Manual, which cannot be more than 72 hours after the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place.

Once the CAISO grants final approval for a Maintenance Outage and the Outage has commenced, the CAISO does not subsequently deny the Outage for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.

9.3.1.3.2 Maintenance Outages Requested After Cure Period

Other than Outage types identified in Section 9.3.1.3.3, the CAISO denies Maintenance Outage requests on RA Resources submitted after the 30-day Supply Plan revision deadline in Section 40.4.7.1(c) for the RA month in which the outage would first take place if the Scheduling Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the requested Maintenance Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan. The RA Substitute Capacity must be provided by the post-monthly RA Substitute Capacity deadline established in the Business Practice Manual, which cannot be no more than 72 hours after the Outage request.

Once the CAISO grants final approval for a Maintenance Outage and the Outage has commenced, the CAISO does not subsequently deny the Outage for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the

Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.

9.3.1.3.3 Exceptions to Requirement to Provide RA Substitute Capacity

The CAISO does not automatically deny an Outage pursuant to Section 9.3.1.3.1 or Section 9.3.1.3.2 if the Maintenance Outage is: (a) an Off-Peak Opportunity RA Maintenance Outage approved Pursuant to Section 9.3.1.3.6; (b) caused by an Outage on transmission facilities in the CAISO Controlled Grid; or (c) on RA Capacity that is solely Flexible RA Capacity.

9.3.1.3.4 Cancellation or Denial of Maintenance Outages for Reasons other than Lack of RA Substitute Capacity

Notwithstanding provision of RA Substitute Capacity, the CAISO may deny, reschedule or cancel a Maintenance Outage on a RA Resource if it determines that the Outage is likely to have a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid or the facilities of a Connected Entity.

9.3.1.3.5 Obligations of RA Substitute Capacity

RA Substitute Capacity provided pursuant to Section 9.3.1.3.1 or Section 9.3.1.3.2 is subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed on Resource Adequacy Resources by the CAISO Tariff, including the must-offer obligations in Section 40.6 and the RAIM provisions in Section 40.9, for the MW amount and duration of the outage substitution period, which includes the full day of the start date and the full day of the end date of the outage.

~~In performing outage coordination management under Section 9, and this Section 9.3.1.3, the CAISO may take into consideration the status of a Generating Unit as a Resource Adequacy Resource, including whether it is Listed Local RA Capacity. The CAISO may deny, reschedule or cancel an Approved Maintenance Outage for facilities that comprise the CAISO Controlled Grid or Generating Units of Participating Generators if it determines that the outage is likely to have a detrimental effect on the availability of Resource Adequacy Capacity or the efficient use and reliable operation of the CAISO Controlled Grid or the facilities of a Connected Entity.~~

~~9.3.1.3.1 [Not Used]~~

~~9.3.1.3.2 [Not Used]~~

~~9.3.1.3.3 Substitution Opportunity for RA Resources~~

~~To the extent that a resource is committed to provide Resource Adequacy Capacity during a month, the Scheduling Coordinator for the resource may request an RA Maintenance Outage With Substitution, RA Maintenance Outage Without Substitution, Off Peak Opportunity RA Maintenance Outage, or Short-Notice Opportunity RA Outage, or may request to reschedule an Approved Maintenance Outage, for that Resource Adequacy Capacity in accordance with the provisions of this Section. The timelines set forth in this Section for submitting an Outage request and classifying the outage as a Maintenance Outage or a Forced Outage exclude the day that the request is submitted and the day that the outage is scheduled to commence.~~

~~9.3.1.3.3.1 RA Maintenance Outage With Substitution~~

- ~~(a) Substitution Option. The Scheduling Coordinator of a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a planned Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage With Substitution during that month.~~
- ~~(b) Request. A request for an RA Maintenance Outage With Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start of the outage; (ii) provide RA Substitution Capacity in an amount no less than the amount of Resource Adequacy Capacity that would be on scheduled outage; and (iii) otherwise comply with the requirements set forth in Section 9.~~
- ~~(c) Approval.~~
- ~~(1) The CAISO will consider requests for an RA Maintenance Outage With Substitution in the order that the requests are received.~~
- ~~(2) The CAISO may approve the request for an RA Maintenance Outage With Substitution if it determines that: (i) the request meets the requirements in~~

~~Section 9.3.1.3.3.1(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.~~

~~(3) If the request was submitted no less than eight (8) days prior to the start date for the outage, and it meets the requirements in Section 9.3.1.3.3.1(c)(2) the CAISO may approve the request as an RA Maintenance Outage With Substitution.~~

~~(4) If the CAISO denies the request for failing to meet the requirements in Section 9.3.1.3.3.1(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request a different schedule for the RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage without RA Substitute Capacity at another time.~~

~~(d) **Resource Adequacy Obligation.** The RA Substitute Capacity for an RA Maintenance Outage With Substitution approved under Section 9.3.1.3.3.1(c)(3) shall be subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed on Resource Adequacy Resources by the CAISO Tariff, including the must-offer obligations in Section 40.6 and the RAIM provisions in Section 40.9, for the MW amount and duration of the outage substitution period, which includes the full day of the start date and the full day of the end date of the outage.~~

~~9.3.1.3.3.2 RA Maintenance Outage Without Substitution~~

~~(a) **Option for No Substitution.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage Without Substitution, without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAIM calculation under Section 40.9.~~

~~(b) **Request.** A request for an RA Maintenance Outage Without Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date of the outage; and (ii) otherwise comply with the requirements of Section 9.~~

~~(c) **Approval.**~~

~~(1) The CAISO will consider requests received for an RA Maintenance Outage Without Substitution in the order the requests were received.~~

~~(2) The CAISO may approve a request for an RA Maintenance Outage Without Substitution if it determines that: (i) the request meets the requirements in Section 9.3.1.3.3.2(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The analysis of system conditions and the overall outage schedule will include Approved Maintenance Outage requests that were received before and after the request for an RA Maintenance Outage Without Substitution.~~

~~(3) The CAISO will not approve a request for an RA Maintenance Outage Without Substitution earlier than seven days before the first day of the resource adequacy month, and may hold the request as pending until system conditions are sufficiently known for the CAISO to determine whether the outage meets the requirements in Section 9.3.1.3.3.2(c)(2).~~

~~(4) If the CAISO denies a request for an RA Maintenance Outage Without Substitution for failing to meet the requirements in Section 9.3.1.3.3.2(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.~~

9.3.1.3.3-36 Off-Peak Opportunity RA Maintenance Outage

(a) **Option for Off-Peak Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for an Off-Peak Opportunity RA Maintenance Outage

without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAIM calculation under Section 40.9.

- (b) **Request.** A request for an Off-Peak Opportunity RA Maintenance Outage must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date for the outage; (ii) schedule the outage to begin during off-peak hours (as specified in the Business Practice Manuals) on a weekday, and to be completed prior to on-peak hours (as specified in the Business Practice Manuals) the following weekday, or to begin during off-peak hours (as specified in the Business Practice Manuals) on Friday, or on Saturday, Sunday, or a holiday, and to be completed prior to on-peak hours (as specified in the Business Practice Manual) on the next weekday; and (iii) otherwise comply with the requirements set forth in Section 9.

(c) **Approval.**

- (1) The CAISO will consider requests for an Off-Peak Opportunity RA Maintenance Outage in the order the requests were received.
- (2) If the request was submitted no less than eight (8) days prior to the start date for the outage, the CAISO may approve the request as an Off-Peak Opportunity RA Maintenance Outage if it determines that: (i) the request meets the requirements set forth in Section 9.3.1.3.3-36(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.
- (3) If the CAISO denies a request for an Off-Peak Opportunity RA Maintenance Outage for failing to meet the requirements in Section 9.3.1.3.3-36(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.
- (4) To the extent that an approved Off-Peak Opportunity RA Maintenance Outage is not completed during off-peak hours as scheduled, and extends into on-peak

hours, the Scheduling Coordinator for the resource shall submit the portion of the outage that extends into on-peak hours as a new Forced Outage, which shall be subject to the RAIM provisions in Section 40.9.

9.3.1.3.3-47 Short-Notice Opportunity RA Outage

- (a) **Option for Short-Notice Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for a Short-Notice Opportunity RA Outage without a requirement to provide RA Substitute Capacity for the Resource Adequacy Capacity that will be on the Forced Outage to be excluded from the RAIM calculation under Section 40.9.

- (b) A Short-Notice Opportunity RA Outage shall not exceed five days in length. The request for a Short-Notice Opportunity RA Outage must: (i) be submitted no more than seven (7) days prior to the requested start date for the outage; (ii) provide the CAISO adequate time to analyze the request before the outage begins; (iii) be submitted before the outage has commenced as a Forced Outage; and (iv) otherwise comply with the requirements of Section 9.

- (c) **Approval.**
 - (1) The CAISO will consider Short-Notice Opportunity RA Outages in the order the requests are received.
 - (2) If the request was submitted no more than seven days and no less than four days prior to the start date of the outage, the CAISO may approve the request as a Short Notice Opportunity RA Outage if it determines that: (i) the outage and the request meet the requirements set forth in Section 9.3.1.3.3-47(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period.

The approved outage will be a Forced Outage and will not be subject to the RAAIM provisions in Section 40.9.

- (3) If the request was submitted three days or less prior to the start date of the outage, the CAISO may approve the request as a Forced Outage if it determines that: (i) the outage and request meet the requirements set forth in Section 9.3.1.3.~~3-47~~(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period; and (iv) the repairs are necessary to maintain system or resource reliability and require immediate attention to prevent equipment damage or failure. A Short-Notice Opportunity RA Outage approved under this Section will be a Forced Outage and will not be subject to the RAAIM provisions in Section 40.9.
- (4) To the extent that an approved Short-Notice Opportunity RA Outage is not completed during the originally approved outage schedule, the Scheduling Coordinator for the resource must submit the portion of the outage that continues from the approved completion time until the time the outage is actually completed as a new Forced Outage, which will be subject to the RAAIM provisions in Section 40.9.

9.3.1.3.48 Outage Reporting for Resource Adequacy Resources between 1 MW and 10 MW

Scheduling Coordinators for Resource Adequacy Resources with a PMax of at least one (1) MW but less than 10 MWs that do not meet the requirement to provide information on Forced Outages in accordance with Section 9.3.10 shall report Outages in accordance with the process set forth in the Business Practice Manual.

9.3.1.3.9 Transition Period for Providing RA Substitute Capacity for Maintenance Outages
Notwithstanding Sections 9.3.1.3.1 and 9.3.1.3.2, Maintenance Outages on RA Resources in the June 2021 and July 2021 RA months require RA Substitute Capacity as follows to avoid Outage denial.

Maintenance Outage requests or Approved Maintenance Outages on RA Resources taken in June 2021 are reviewed for RA Substitute Capacity per the provisions of part 2 of Appendix J.

The CAISO denies Maintenance Outage requests or Approved Maintenance Outages on RA Resources planned to start or continue in July 2021 and that were requested before June 6, 2021, if the Scheduling Coordinator for the RA Resource does not provide RA Substitute Capacity to cover the extent of the Outage that occurs during the period for which the resource has been shown on a monthly Supply Plan.

The RA Substitute Capacity must be provided by the July 2021 monthly RA Substitute Capacity deadline established in the Business Practice Manual. Maintenance Outage requests on RA Resources planned to start in July 2021 that are requested on or after June 6, 2021, are reviewed for RA Substitute Capacity per Section 9.3.1.3.2.

The CAISO will not subsequently deny a Maintenance Outage on a RA Resource that it permits to commence in July 2021 for failure to provide RA Substitute Capacity by monthly RA Substitute Capacity deadlines that occur after the Outage has begun. Any such period of the Maintenance Outage for which the Scheduling Coordinator does not provide RA Substitute Capacity will be treated as a Forced Outage for purposes of assessing RAIM under Section 40.9 but the resource may not provide RA Substitute Capacity per Section 40.9.3.6.2.

9.3.2 Requirement for Approval

An Operator or Scheduling Coordinator shall not take: (i) facilities that comprise the CAISO Controlled Grid; or (ii) Generating Units of Participating Generators out of service for the purposes of planned maintenance or for new construction or other work except as approved by the CAISO, except that final approval may not be required for a Transmission Maintenance Outage as provided in Section 9.3.9.1.

The information relating to each Maintenance Outage submitted by a Participating Generator in accordance with Section 9.3.5, or by a Participating TO in accordance with Section 9.3.5, constitutes a request for a long-range Maintenance Outage and is not considered an Approved Maintenance Outage until the CAISO has notified the Participating Generator of such approval pursuant to Section 9.3.6, or the Participating TO pursuant to Section 9.3.6.

9.3.3 Request Submission and Information

The Operator or Scheduling Coordinator of facilities that comprise the CAISO Controlled Grid or of a

Participating Generator, Participating Intermittent Resource, Generating Unit, System Unit, Physical Scheduling Plant, Proxy Demand Resource, Reliability Demand Response Resource, Non-Generation Resource, Participating Load, or other resource subject to the outage management requirements of Section 9, shall use the ISO's outage management system to –

- (1) Submit all outage requests under Section 9.
- (2) Provide the required information about the outage and work to be performed using the nature of work categories described in the Business Practice Manual.
- (3) For transmission outage requests, additionally provide structured and detailed outage modeling information at the facility level and/or the breaker/switch level. If the work to be performed will require a switch position to change during the outage period, the Operator or Scheduling Coordinator must submit a separate outage request for each configuration.
- (4) For resource outage requests, additionally provide the required information for the resource at the aggregate project or plant level, and also at the individual unit level for a unit de-rate greater than 50 MW, and any limitations on the resource's availability to provide each type of ancillary service for which it is certified.
- (5) Notify the CAISO of temporary changes in physical characteristics specified in the Master File, including the PMax, Minimum Load, and Ramping capability of the unit, due to changes in their actual physical characteristics. Changes in the physical characteristics related to Minimum Load shall only be for temporary increases in Minimum Load due to ambient temperature, outages of mechanical equipment, or environmental regulations.
- (6) For Outages that involve extending or increasing the scheduled duration of an Outage or MW amount of capacity on Outage, respectively, submit a new Outage request to cover the extension or increase in the extent of the Outage.

* * *

40.3 Local Capacity Area Resource Requirements for SCs for LSEs

40.3.1 Local Capacity Technical Study

On an annual basis, pursuant to the schedule set forth in the Business Practice Manual, the CAISO will, perform, and publish on the CAISO Website the Local Capacity Technical Study. The Local Capacity Technical Study shall identify Local Capacity Areas, determine the minimum amount of Local Capacity Area Resources in MW that must be available to the CAISO within each identified Local Capacity Area, and identify the Generating Units within each identified Local Capacity Area. The CAISO shall collaborate with the CPUC, Local Regulatory Authorities within the CAISO Balancing Authority Area, federal agencies, and Market Participants to ensure that the Local Capacity Technical Study is performed in accordance with this Section 40.3 and to establish for inclusion in the Business Practice Manual other parameters and assumptions applicable to the Local Capacity Technical Study and a schedule that provides for: (i) reasonable time for review of a draft Local Capacity Technical Study, (ii) reasonable time for Participating TOs to propose operating solutions, and (iii) release of the final Local Capacity Technical Study no later than 120 days prior to the date annual Resource Adequacy Plans must be submitted under this Section 40.

40.3.1.1 Local Capacity Technical Study Criteria

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. The Local Capacity Technical Study also will consider hourly load shapes and system limits under emergency conditions to quantify minimum amounts of hourly capacity and energy, that Local Capacity Area Resources must be able to provide within each identified Local Capacity Area in order to resolve Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided in NERC Reliability Standards regarding Transmission System Planning Performance Requirements (TPL-001-4 or its successor), as augmented by CAISO Reliability Criteria in accordance with the Transmission Control Agreement and Section 24.3.1. The CAISO Reliability Criteria shall include:

- (1) Time Allowed for Manual Readjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. This time should not be more than thirty (30) minutes.
- (2) No voltage collapse or dynamic instability shall be allowed for a Contingency in Category Extreme Events [any P1 system readjusted (Common Structure) P7], as listed in TPL-001-4 in areas with load of 250 MW or more. For areas with less than 250 MW of load, mitigation will only be proposed if there is a risk of cascading beyond the area directly affected by the outage.

40.3.1.2 Local Capacity Technical Study Contingencies.

The Local Capacity Technical Study shall assess all the Contingencies and appropriate performance levels required by mandatory standards including, but not limited to, NERC, WECC and CAISO Planning Standards.

* * *

40.5 ~~[Not Used]~~ Minimum State of Charge Tool for Non-Generator Resources Electing Limited Energy Storage Resource Status that Provide RA Capacity

40.5.1 ~~[Not Used]~~ Operation of the MSOC Tool

Through June 1, 2023, the CAISO enforces the MSOC Tool in the RTM on any Non-Generator Resource that has selected a primary fuel type in Master File of "Limited Energy Storage Resource" and is an RA Resource for the day on which the MSOC is enforced. The MSOC Tool limits RTM awards to any covered resource in the market intervals preceding any Trading Hour that meets the requirements specified in Section 40.5.2 such that, based on its registered operating parameters, the resource will have sufficient charge to meet its discharge awards from its Day-Ahead Schedule for any Trading Hour that meets the requirements specified in Section 40.5.2. The MSOC tool does not increase the charge on a resource beyond what is necessary to ensure it can meet a discharge award from a Day-Ahead Schedule.

When reviewing market and system conditions on the Operating Day, the CAISO may choose not to apply the MSOC Tool for particular Trading Hours if its assessment of projected conditions reflects that the MSOC Tool is not necessary for system reliability in those Trading Hours.

40.5.2 ~~[Not Used]~~ Determining the Days and Hours for which the MSOC Applies

The CAISO enforces the MSOC Tool for a Trading Day if there is at least one Trading Hour on that Trading Day for which, per Section 31.5.5, the RUC process initially cannot find a feasible solution without adjusting the constraints described in Section 31.5.4. For such Trading Days, the MSOC Tool applies to discharge awards from Day-Ahead Schedules for the Trading Hours that the CAISO projects, at the time the Day-Ahead Market runs, will have the highest CAISO system load net of wind and solar output.

40.5.3 ~~[Not Used]~~ Notification of Applying the MSOC Tool

At approximately the same time it publishes Day-Ahead Market Results for a Trading Day, the CAISO provides public notice if the Trading Day will be subject to enforcement of the MSOC Tool and, if so, the Trading Hours whose discharge awards will be subject to the MSOC Tool.

40.5.4 [Not Used]

40.5.5 [Not Used]

* * *

40.9.3.4 Treatment of Outages

- (a) **RA Substitute Capacity Not Required.** The RAIM 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 RAIM charges –
 - (1) the RAIM 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 RAIM 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 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 RAAIM charges, the RAAIM 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 RAAIM for certain Outage types.** The RAAIM Availability Assessment excludes the capacity, duration, and must-offer requirement for local and/or system Resource Adequacy Capacity or Flexible RA Capacity on an Outage in a nature of work category specified in the Business Practice Manual that relates to: (i) an administrative action by the resource owner; (ii) a cause outside of the control of the resource owner, (iii) or a short-term use limitation; or (iv) a non-Run-of-River Resource hydroelectric Generating Unit's management of water-related operational or regulatory limitations. Through the December 31, 2020, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit that has limited the capacity it has shown on the monthly Supply Plan corresponding to the day of the Outage to reflect historical hydrological conditions or actual hydrological conditions in 2020. The limitations based on hydrological conditions must be mutually agreed upon with the unit's

Scheduling Coordinator and the CAISO. Starting with the January 1, 2021, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit whose Qualifying Capacity was established pursuant to a CPUC or Local Regulatory Authority methodology under which the Qualifying Capacity is calculated to reflect historical hydrological conditions.

- (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 RAAIM 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~~ [Not Used]

~~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 RAIM 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.~~

40.9.3.6.2 CAISO ~~Rolling~~ Evaluation of Need for Substitute Capacity for ~~Outages Submitted after T-25~~ Forced Outages

~~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 A Forced Outage on a RA Resource, irrespective of whether the resource is providing RA Capacity or Flexible RA Capacity, subjects the resource's Scheduling Coordinator to RAIM unless the Scheduling Coordinator for the resource provides RA 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.~~

~~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, including Legacy 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.
- (4) RA Substitute Capacity shall not qualify to be RMR Capacity, including Legacy 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 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 resource as RA Substitute Capacity, the Scheduling Coordinator for RA Capacity other than Listed Local RA Capacity that has an 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).

(2) **Approval.** The CAISO will grant the request if the alternate resource has adequate deliverable capacity to provide the RA Substitute Capacity and meets the requirements in Sections 40.9.3.6.4(c)(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 an Outage 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 40.9.3.6.4(d)(1) and 40.9.3.6.3(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).
- (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.

* * * *

40.9.4 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:
 - (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 RAIM under Section 40.9.3.4(d); 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 Flexible RA Capacity was provided against the total number of days in the month.

* * *

43A.2.2 Collective Deficiency in Local Capacity Area Resources

The CAISO shall have the authority to designate CPM Capacity where the Local Capacity Area Resources (irrespective of status as Listed Local RA Capacity) specified in the annual Resource Adequacy Plans of all applicable Scheduling Coordinators, after the opportunity to cure under Section 43A.2.2.1 has been exhausted, fail to ensure compliance in one or more Local Capacity Areas with the Local Capacity Technical Study criteria provided in Section 40.3.1.1, regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity Technical Study, and after assessing during all hours the effectiveness of Generating Units under RMR Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans, whether or not such Generating Units under

RMR Contracts and Resource Adequacy Resources are located in the applicable Local Capacity Area. The CAISO may, pursuant to this Section 43A.2.2, designate CPM Capacity in an amount and location sufficient to ensure compliance during all hours with the Reliability Criteria applied in the Local Capacity Technical Study.

43A.2.2.1 LSE Opportunity to Resolve Collective Deficiency in Local Capacity Area Resources

Where the CAISO determines that a need for CPM Capacity exists under Section 43A.2.2, but prior to any designation of CPM Capacity, the CAISO shall issue a Market Notice identifying the deficient Local Capacity Area and the quantity of capacity that would permit the deficient Local Capacity Area to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1 and, where only specific resources are effective to resolve the Reliability Criteria deficiency, the CAISO shall provide the identity of such resources. Any Scheduling Coordinator may submit a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year demonstrating procurement of additional Local Capacity Area Resources consistent with the Market Notice issued under this Section.

Any Scheduling Coordinator that provides such additional Local Capacity Area Resources consistent with the Market Notice under this Section shall have its share of any CPM procurement costs under Section 43A. 8.3 reduced on a proportionate basis. If the full quantity of capacity is not reported to the CAISO under revised annual Resource Adequacy Plans in accordance with this Section, the CAISO may designate CPM Capacity sufficient to alleviate the deficiency.

* * *

Appendix A

- Minimum State of Charge (MSOC) Tool

A functionality in the RTM that limits awards for a Non-Generator Resource that has selected a primary fuel type in Master File of "Limited Energy Storage Resource" and is an RA Resource such that they will have sufficient charge to meet the discharge elements of their Day-Ahead Schedule.

~~**-RA Maintenance Outage With Substitution**~~

~~A Maintenance Outage, or change to an Approved Maintenance Outage, at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage and that includes RA Substitute Capacity for the Resource Adequacy Capacity on Outage.~~

~~**-RA Maintenance Outage Without Substitution**~~

~~A Maintenance Outage, or change to an Approved Maintenance Outage at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage without RA Substitute Capacity for the Resource Adequacy Capacity on Outage.~~

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Appendix J

**GRANDFATHERED LEGACY STANDARD CAPACITY PRODUCT AND RA SUBSTITUTE CAPACITY
PROVISIONS**

Part 1 – Grandfathering of Legacy Standard Capacity Product Provisions

Notwithstanding any other provisions of the CAISO Tariff, the following provisions shall apply pursuant to Section 40.9.2.1(a)(1).

40.9.2 Exemptions

The following exemptions apply to the CAISO's Availability Standards program of this Section 40.9:

- (1) Capacity under a resource specific power supply contract that existed prior to June 28, 2009 and Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval prior to June 28, 2009, and is associated with specific Generating Units or System Resources, will not be subject to Non-Availability Charges or Availability Incentive Payments. Such contracted Resource Adequacy Capacity, except for non-Resource-Specific System Resources, will be included in the development of Availability Standards and will be subject to any Outage reporting requirements necessary for this purpose. The exemption will apply only for the initial term of the contract and to the MW capacity

quantity and Resource Adequacy Resources specified in the contract prior to June 28, 2009. The exemption shall terminate upon the conclusion of the initial contract term. Exempt contracts may be re-assigned or undergo novation on or after June 28, 2009, but the exemption shall not apply for any extended contract term, increased capacity quantity or additional resource(s) beyond those specified in the contract prior to June 28, 2009, except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to these contracts will be required to certify the start date of the contract, the expiration date, the Resource ID(s), and the amount of Resource Adequacy Capacity associated with each Resource ID included in the contract. For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output, the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (2) will not be subject to Non-Availability Charges or Availability Incentive Payments, except that the deadline date for either type of contract shall be August 22, 2010 instead of June 28, 2009.

- (2) For a contract entered into prior to June 28, 2009 that provides for the amount of Resource Adequacy Capacity to increase during the original term of the contract, based on a ratio of the Resource Adequacy Resource's output or due to an addition of capacity, the exemption provided in subsection (2) of this Section 40.9.2 will apply to the additional capacity allowed under the contract; provided that the capacity increase (i) is expressly contained in the provisions of the contract, (ii) occurs during the primary term of the contract; and (iii) does not result from contract extensions or other amendments to the original terms and conditions of the contract, except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to contracts that provide for such capacity increases or additions must include in their certification, in addition to the requirements of subsection (2) of this Section 40.9.2, (i) the citation to any contract provisions that might entitle them to increased exempt Resource

Adequacy Capacity from the contracted resources during the primary term of the contract; (ii) the amount of additional capacity to which they might be entitled; and (iii) the actual effective date of the capacity increase. If the actual amount of capacity and/or the actual effective date of the capacity increase is not known at the time of the initial certification, the Scheduling Coordinator shall provide a supplemental certification(s) when this information becomes known. For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output the exemption provided in subsection (2) of this Section 40.9.2 will apply to an increase in the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (3), except that the deadline date for either type of contract to be exempt shall be August 22, 2010 instead of June 28, 2009.

Part 2 – Legacy RA Substitute Capacity Provisions

Notwithstanding any other provisions of the CAISO Tariff, the following provisions apply to Outages on RA Resources taken in June 2021. In all other respects, the CAISO Tariff, including the provisions of Sections 9 and 40 not covered in this Appendix J, apply to Outages on RA Resources taken in June 2021.

9.3.1.3 Coordinating Outages of RA Resources

In performing outage coordination management under Section 9, and this Section 9.3.1.3, the CAISO may take into consideration the status of a Generating Unit as a Resource Adequacy Resource, including whether it is Listed Local RA Capacity. The CAISO may deny, reschedule or cancel an Approved Maintenance Outage for facilities that comprise the CAISO Controlled Grid or Generating Units of Participating Generators if it determines that the outage is likely to have a detrimental effect on the availability of Resource Adequacy Capacity or the efficient use and reliable operation of the CAISO Controlled Grid or the facilities of a Connected Entity.

9.3.1.3.1 [Not Used]

9.3.1.3.2 [Not Used]

9.3.1.3.3 Substitution Opportunity for RA Resources

To the extent that a resource is committed to provide Resource Adequacy Capacity during a month, the Scheduling Coordinator for the resource may request an RA Maintenance Outage With Substitution, RA Maintenance Outage Without Substitution, Off Peak Opportunity RA Maintenance Outage, or Short-Notice Opportunity RA Outage, or may request to reschedule an Approved Maintenance Outage, for that Resource Adequacy Capacity in accordance with the provisions of this Section. The timelines set forth in this Section for submitting an Outage request and classifying the outage as a Maintenance Outage or a Forced Outage exclude the day that the request is submitted and the day that the outage is scheduled to commence.

9.3.1.3.3.1 RA Maintenance Outage With Substitution

- (a) **Substitution Option.** The Scheduling Coordinator of a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a planned Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage With Substitution during that month.
- (b) **Request.** A request for an RA Maintenance Outage With Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start of the outage; (ii) provide RA Substitution Capacity in an amount no less than the amount of Resource Adequacy Capacity that would be on scheduled outage; and (iii) otherwise comply with the requirements set forth in Section 9.
- (c) **Approval.**
- (1) The CAISO will consider requests for an RA Maintenance Outage With Substitution in the order that the requests are received.
 - (2) The CAISO may approve the request for an RA Maintenance Outage With Substitution if it determines that: (i) the request meets the requirements in Section 9.3.1.3.3.1(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental

effect on the efficient use and reliable operation of the CAISO Controlled Grid.

(3) If the request was submitted no less than eight (8) days prior to the start date for the outage, and it meets the requirements in Section 9.3.1.3.3.1(c)(2) the CAISO may approve the request as an RA Maintenance Outage With Substitution.

(4) If the CAISO denies the request for failing to meet the requirements in Section 9.3.1.3.3.1(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request a different schedule for the RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage without RA Substitute Capacity at another time.

(d) **Resource Adequacy Obligation.** The RA Substitute Capacity for an RA Maintenance Outage With Substitution approved under Section 9.3.1.3.3.1(c)(3) shall be subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed on Resource Adequacy Resources by the CAISO Tariff, including the must-offer obligations in Section 40.6 and the RAIM provisions in Section 40.9, for the MW amount and duration of the outage substitution period, which includes the full day of the start date and the full day of the end date of the outage.

9.3.1.3.3.2 RA Maintenance Outage Without Substitution

(a) **Option for No Substitution.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may request that a Maintenance Outage be scheduled, or an Approved Maintenance Outage be rescheduled, as an RA Maintenance Outage Without Substitution, without a requirement to provide RA Substitute Capacity for the unavailable capacity for the duration of the outage to be excluded from the RAIM calculation under Section 40.9.

(b) **Request.** A request for an RA Maintenance Outage Without Substitution must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date of the outage; and (ii) otherwise comply with the requirements of Section 9.

(c) Approval.

- (1) The CAISO will consider requests received for an RA Maintenance Outage Without Substitution in the order the requests were received.
- (2) The CAISO may approve a request for an RA Maintenance Outage Without Substitution if it determines that: (i) the request meets the requirements in Section 9.3.1.3.3.2(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The analysis of system conditions and the overall outage schedule will include Approved Maintenance Outage requests that were received before and after the request for an RA Maintenance Outage Without Substitution.
- (3) The CAISO will not approve a request for an RA Maintenance Outage Without Substitution earlier than seven days before the first day of the resource adequacy month, and may hold the request as pending until system conditions are sufficiently known for the CAISO to determine whether the outage meets the requirements in Section 9.3.1.3.3.2(c)(2).
- (4) If the CAISO denies a request for an RA Maintenance Outage Without Substitution for failing to meet the requirements in Section 9.3.1.3.3.2(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.

9.3.1.3.3.3 Off-Peak Opportunity RA Maintenance Outage

- (a) Option for Off-Peak Outage. The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for an Off-Peak Opportunity RA Maintenance Outage without a requirement to provide RA Substitute Capacity for the unavailable capacity for

the duration of the outage to be excluded from the RAIM calculation under Section 40.9.

(b) **Request.** A request for an Off-Peak Opportunity RA Maintenance Outage must: (i) be submitted to the CAISO no less than eight (8) days prior to the start date for the outage; (ii) schedule the outage to begin during off-peak hours (as specified in the Business Practice Manuals) on a weekday, and to be completed prior to on-peak hours (as specified in the Business Practice Manuals) the following weekday, or to begin during off-peak hours (as specified in the Business Practice Manuals) on Friday, or on Saturday, Sunday, or a holiday, and to be completed prior to on-peak hours (as specified in the Business Practice Manual) on the next weekday; and (iii) otherwise comply with the requirements set forth in Section 9.

(c) **Approval.**

(1) The CAISO will consider requests for an Off-Peak Opportunity RA Maintenance Outage in the order the requests were received.

(2) If the request was submitted no less than eight (8) days prior to the start date for the outage, the CAISO may approve the request as an Off-Peak Opportunity RA Maintenance Outage if it determines that: (i) the request meets the requirements set forth in Section 9.3.1.3.3.3(b); and (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid.

(3) If the CAISO denies a request for an Off-Peak Opportunity RA Maintenance Outage for failing to meet the requirements in Section 9.3.1.3.3.3(c)(2), the Scheduling Coordinator for the Resource Adequacy Resource may request an RA Maintenance Outage With Substitution or may request that the CAISO accommodate the outage at another time.

(4) To the extent that an approved Off-Peak Opportunity RA Maintenance Outage is not completed during off-peak hours as scheduled, and extends into on-peak hours, the Scheduling Coordinator for the resource shall submit the portion of the

outage that extends into on-peak hours as a new Forced Outage, which shall be subject to the RAIM provisions in Section 40.9.

9.3.1.3.3.4 Short-Notice Opportunity RA Outage

- (a) **Option for Short-Notice Outage.** The Scheduling Coordinator for a Resource Adequacy Resource designated as Resource Adequacy Capacity during the resource adequacy month may submit a request for a Short-Notice Opportunity RA Outage without a requirement to provide RA Substitute Capacity for the Resource Adequacy Capacity that will be on the Forced Outage to be excluded from the RAIM calculation under Section 40.9.
- (b) A Short-Notice Opportunity RA Outage shall not exceed five days in length. The request for a Short-Notice Opportunity RA Outage must: (i) be submitted no more than seven (7) days prior to the requested start date for the outage; (ii) provide the CAISO adequate time to analyze the request before the outage begins; (iii) be submitted before the outage has commenced as a Forced Outage; and (iv) otherwise comply with the requirements of Section 9.
- (c) **Approval.**
- (1) The CAISO will consider Short-Notice Opportunity RA Outages in the order the requests are received.
- (2) If the request was submitted no more than seven days and no less than four days prior to the start date of the outage, the CAISO may approve the request as a Short Notice Opportunity RA Outage if it determines that: (i) the outage and the request meet the requirements set forth in Section 9.3.1.3.3.4(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; and (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period. The approved outage will be a Forced Outage and will not be subject to the

RAAIM provisions in Section 40.9.

- (3) If the request was submitted three days or less prior to the start date of the outage, the CAISO may approve the request as a Forced Outage if it determines that: (i) the outage and request meet the requirements set forth in Section 9.3.1.3.3.4(b); (ii) system conditions and the overall outage schedule provide an opportunity to take the resource out of service without a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid; (iii) the outage will not result in insufficient available Resource Adequacy Capacity during the outage period; and (iv) the repairs are necessary to maintain system or resource reliability and require immediate attention to prevent equipment damage or failure. A Short-Notice Opportunity RA Outage approved under this Section will be a Forced Outage and will not be subject to the RAIM provisions in Section 40.9.
- (4) To the extent that an approved Short-Notice Opportunity RA Outage is not completed during the originally approved outage schedule, the Scheduling Coordinator for the resource must submit the portion of the outage that continues from the approved completion time until the time the outage is actually completed as a new Forced Outage, which will be subject to the RAIM provisions in Section 40.9.

9.3.1.3.4 Outage Reporting for Resource Adequacy Resources between 1 MW and 10 MW

Scheduling Coordinators or Resource Adequacy Resources with a PMax of at least one (1) MW but less than 10 MWs that do not meet the requirement to provide information on Forced Outages in accordance with Section 9.3.10 shall report Outages in accordance with the process set forth in the Business Practice Manual.

40.9.3.4 Treatment of Outages

- (a) **RA Substitute Capacity Not Required.** The RAIM 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 RAIM charges –

(1) the RAIM 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 RAIM 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 RAIM 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 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 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 an Outage in a nature of work category specified in the Business Practice Manual that relates to: (i) an administrative action by the resource owner; (ii) a cause outside of the control of the resource owner, (iii) or a short-term use limitation; or (iv) a non-Run-of-River Resource hydroelectric Generating Unit's management of water-related operational or regulatory limitations. Through the December 31, 2020, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit that has limited the capacity it has shown on the monthly Supply Plan corresponding to the day of the Outage to reflect historical hydrological conditions or actual hydrological conditions in 2020. The limitations based on hydrological conditions must be mutually agreed upon with the unit's Scheduling Coordinator and the CAISO. Starting with the January 1, 2021, Trading Day, item (iv) of this Section 40.9.3.4(d) applies only to a hydroelectric Generating Unit whose Qualifying Capacity was established pursuant to a CPUC or Local Regulatory Authority methodology under which the Qualifying Capacity is calculated to reflect historical hydrological conditions.

(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 RAAIM 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 RAIM 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 RAIM 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.

40.9.3.6.2 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.

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 RAIM 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, including Legacy 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.
- (4) RA Substitute Capacity shall not qualify to be RMR Capacity, including Legacy 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 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 resource as RA Substitute Capacity, the Scheduling Coordinator for RA Capacity other than Listed Local RA Capacity that has an 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).

(2) **Approval.** The CAISO will grant the request if the alternate resource has adequate deliverable capacity to provide the RA Substitute Capacity and meets the requirements in Sections 40.9.3.6.4(c)(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 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).

(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).

(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 RAIM 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:
 - (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 Flexible RA Capacity was provided against the total number of days in the month.

- RA Maintenance Outage With Substitution

A Maintenance Outage, or change to an Approved Maintenance Outage, at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage and that includes RA Substitute Capacity for the Resource Adequacy Capacity on Outage.

- RA Maintenance Outage Without Substitution

A Maintenance Outage, or change to an Approved Maintenance Outage at a Resource Adequacy Resource that the CAISO receives no less than eight (8) days prior to the start of the outage without RA

Substitute Capacity for the Resource Adequacy Capacity on Outage.