



California ISO
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**Rescission of Payments for
Undispatchable Capacity
Resulting From Inability to Provide
Spinning Reserve and Non-Spinning
Reserve at Operating Reserve Ramp
Rate during Normal Operations**

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Rescission of Payments for Undispatchable Capacity Resulting From Inability to Provide Spinning Reserve and Non-Spinning Reserve at Operating Reserve Ramp Rate during Normal Operations

This bulletin clarifies that Generating Units and System Resources certified to provide Ancillary Services may receive an award for Spinning and Non-Spinning Reserve from the California Independent System Operator Corporation (the ISO)¹ between their Minimum normal operation capability (PMin) and Maximum normal operating capability (PMax) as modified by a derate submitted via the Scheduling and Logging system for the ISO (SLIC). For purposes of providing an Ancillary Services Award, the ISO will use the certified Operating Reserve Ramp Rate of the Generating Unit or the Dynamic System Resource, which the ISO defines as “a single number included in Ancillary Service Bids and Submissions to Self-Provide Ancillary Services for Spinning Reserve and Non-Spinning Reserve that represents the Ramp Rate of a resource used in the procurement of Operating Reserve capacity.”² To the extent the Generating Unit or System Resource experiences normal Operational Ramp Rate limitations that result in Undispatchable Capacity, the ISO will rescind payment for the Ancillary Service Award. The following paragraphs briefly describe the ISO’s certification process to provide Spinning and Non-Spinning Reserves, the ISO’s procurement of Spinning and Non-Spinning Reserves based on the Operating Reserve Ramp Rate of a Generating Unit or System Resource, the rescission of payment for Undispatchable Capacity, and an additional mechanism to mitigate the possibility of Undispatchable Capacity resulting from ramp rate limitations during normal operations.

I. Certification of Spinning and Non-Spinning Reserves

Section 8 and Appendix K of the ISO Tariff describes the certification process for Spinning and Non-Spinning Reserves. Section 8.3.4 of the ISO Tariff provides in pertinent part:

Spinning Reserve may be provided only from Generating Units, System Resources that submit Bids to provide Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Part B of Appendix K. Non-Spinning Reserve may be provided

¹ The ISO is sometimes referred to CAISO. Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the CAISO Tariff.

² ISO Tariff, Appendix A.

from Curtailable Demand, on-demand rights from other entities or Balancing Authority Areas, Generating Units, System Resources that submit Bids to provide Non-Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Part C of Appendix K.

For Spinning and Non-Spinning Reserves, the ISO certifies an Operating Reserve Ramp Rate for a Generating Unit or a System Resource across a specified operating range. While a resource may establish certification within a specific range, the certified range does not serve as a limit to the procurement of Spinning or Non-Spinning Reserves. The ISO certifies the entire Generating Unit or System Resource to provide Spinning Reserve and Non-Spinning Reserve.³ The ISO applies the certified Operating Reserve Ramp Rate across the minimum and maximum output of the Generating Unit or System Resource for purposes of awarding Spinning and Non-Spinning Reserves.⁴ In contrast, the ISO certifies Generating Units and Dynamic System Resources to provide Regulation between a high limit and low limit at which the Generating Unit or Dynamic System Resource operates.⁵

II. Procurement of Spinning and Non-Spinning Reserves from Certified Generating Units and System Resources

In the Day-Ahead Market and Real-Time Market the ISO limits the quantity of Operating Reserves it procures from a Generating Unit or System Resource based on the resource's Ancillary Service Capability.⁶ For Spinning Reserve, this capability is the resource's Operating Reserve Ramp Rate multiplied by 10 minutes. For resources that are offline, the ISO limits the quantity of Non-Spinning Reserve it procures from a Generating Unit or System Resource based on the sum of the PMin and the amount of Operating Reserve Ramp Rate multiplied by the difference between 10 minutes and the start-up time of the Generating Unit or System Resource. For online resources providing Non-Spinning Reserve the ISO limits the Non-Spinning Reserve award to the Operating Reserve Ramp Rate multiplied by 10 minutes.⁷ The ISO calculates the 10 minute actual availability of a Generating Unit or System Resource to limit the amount of Spinning and Non-Spinning Reserve awarded in its Real-Time

³ Appendix K of ISO Tariff, Parts B.13 and C.15.

⁴ Appendix K of ISO Tariff, Parts B.12.3 and C.14.4.

⁵ Appendix K of ISO Tariff, Part A.1.2.2.2.

⁶ ISO Tariff, Section 8.4.3.

⁷ With the introduction of simplified ramping functionality, the ISO will use the Operational Ramp Rate to limit the allocation of ramping capability to the combination of Energy schedule changes and Ancillary Services Awards based on a ramp sharing coefficients. Please refer to Technical Bulletin 2009-08-01 for more information on Simplified Ramping <http://www.caiso.com/2437/2437db41245c0.pdf>.

Market to avoid counting reserves that may not be available based on the actual operating level of the resource and the Operational Ramp Rate capability of the resource at the respective actual operating level. If the ISO observes that there is a shortage of operating reserves, the ISO will adjust its procurement of operating reserves to account for actual availability.

For a resource not providing Regulation, the resource's maximum operating level as derated and reported in SLIC will limit the amount of Energy, Spinning Reserve and Non-Spinning Reserve capacity that is awarded to the resource. For a resource providing Regulation, the upper Regulation limit establishes the limit of total Energy, Spinning Reserve and Non-spinning Reserve and upward Regulation capacity awarded to a resource.

III. Rescission of Payments for Undispatchable Capacity

Pursuant to ISO Tariff section 8.10.8.1, the ISO tracks and rescinds payments for Ancillary Service Awards that the ISO determines are undispatchable based on actual operating level of a resource and the resource's Operational Ramp Rate function. In Real-Time, the ISO determines how much upward capability a resource may move in 10 minutes based on the actual operating level of the resource and its Operational Ramp Rate function. ISO Tariff section 8.10.8.1 states:

The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from Ancillary Services capacity or Self-Provided Ancillary Services capacity for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. System Resources that are awarded Ancillary Services capacity in the Day-Ahead Market are required to electronically tag (ETag as prescribed by the WECC) the Ancillary Services capacity. If the amounts of Ancillary Services capacity in an electronic tag differ from the amounts of Ancillary Services capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.

The ISO acknowledges a resource's Operational Ramp Rate may differ from its certified Operating Reserve Ramp Rate. The ISO uses the 10 minute availability value described above to reconcile payments for Ancillary Services capacity awarded and the Ancillary Services capacity actually available based on the actual operating conditions of the resource. The ISO does not consider ramp

rate limitations during normal operating conditions to constitute non-compliance with an operating order or Dispatch Instruction.

IV. Other Mechanisms to Mitigate Operating Reserve Ramp Rate Issues

The ISO has previously identified a means for Generating Units or System Resources to avoid dispatch into an operating range of a resource that may not perform at the Operating Reserve Ramp Rate. In order to protect against this occurrence, the resource may submit a normal derate card via SLIC. Please refer to the following url for technical information posted on March 30, 2009 regarding how use the normal card to protect awarded Ancillary Services capacity. <http://www.caiso.com/2381/2381f94734370.pdf>