California ISO Straw Proposal

Ancillary Services Procurement in HASP and Dispatch Logic

August 5, 2009

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Prepared for Discussion on a Stakeholder Conference Call – August 12, 2009

1 Issue and Background

The February 9, 2006 MRTU Tariff filed by the CAISO proposed to procure Ancillary Services from both internal and external resources in the Day-Ahead Market, the Hour-Ahead Scheduling Process (HASP), and the Real-Time Market. The HASP is designed to procure additional Ancillary Services needed to meet reliability requirements after the Day-Ahead Market, and to determine the optimal mix of Ancillary Services from internal resources, dynamic system resources, and non-dynamic system resources for the next trading hour. However, the market simulation revealed that software limitations prevented the CAISO from dispatching energy from the operating reserve capacity procured from non-dynamic system resources through HASP. To prepare for the new market launch, the CAISO filed and received approval from FERC to defer the procurement of Ancillary Services in HASP, and to procure any required incremental Ancillary Services after the Day-Ahead Market in the fifteen-minute Real-Time Pre-Dispatch (RTPD) process.

The CAISO filed the Deferred Function Amendment Filing with the FERC on October 31, 2008, and indicated to FERC that it anticipated reverting back to hour-ahead procurement of Ancillary Services six to nine months after the new market go-live. In the October 31, 2008 Order, FERC ordered the CAISO to conduct a stakeholder process to consider the reversion to this functionality and any resulting proposed amendments, and submit the proposal to the CAISO Board of Governors and the Commission for approval.

This proposal considers reverting back to Ancillary Service procurement in HASP and proposes solutions to dispatch energy from operating reserves procured from non-dynamic system resources in the hour ahead.

2 Ancillary Services Procurement in HASP

2.1 The Original Proposal and Deferral of This Functionality

The MRTU Tariff filed on February 9, 2006 proposed to procure incremental Ancillary Services from HASP to meet reliability requirements after the Day-Ahead Market. HASP was originally designed to determine the optimal mix of Ancillary Services from internal resources, dynamic system resources, and non-dynamic system resources for the next trading hour. The Tariff called for Ancillary Services awards for internal resources and dynamic system resources in HASP to be non-binding advisory awards and re-optimized in the subsequent 15-minute RTPD process, while the Ancillary Services (Spinning and Non-Spinning) awards for the non-dynamic system resources in HASP were to be binding awards and cleared for settlement. All operating reserves procured in HASP were to be designated as Contingency Only.[1]

In order for external resource capacity procured in HASP to be effective as operating reserves in real-time, the CAISO must be able to dispatch energy from such reserves in real time on a ten-minute basis. Due to software limitations that prevented the CAISO from dispatching energy from non-dynamic system resources in HASP, the CAISO deferred the procurement of Ancillary Services in HASP, and proposed to procure any incremental Ancillary Services after the Day-Ahead market from external resources in the fifteen-minute RTPD process. Non-dynamic system resources are allowed to participate in the RTPD process if energy from such resources can be dispatched for energy within ten minutes based on the definition of Spinning and Non-Spinning reserves.

The following tables compare the originally proposed functionality for procuring Ancillary Services in HASP to the functionality that is currently in practice.

[1] The CAISO February 9, 2006 MRTU Tariff, Section 33.7.

Original Proposal to Procure Ancillary Services in HASP

Hour Ahead Scheduling Process	15-min RTPD
Internal resources (non-binding advisory A/S awards)	Re-optimize non-binding A/S awards in RTPD
Dynamic system resources (non-binding advisory A/S awards)	
Non-dynamic system resources (Binding Spinning and Non-Spinning awards)	

Deferral of Ancillary Services Procurement in HASP

Hour Ahead Scheduling Process	15-min RTPD
No A/S procurement in HASP	Internal resources (Binding A/S awards)
	Dynamic external resources (Binding A/S awards)
	Non-dynamic external resources (registered and certified to participate in RTPD and dispatchable within 10-min) (Binding Spinning and Non-Spinning awards)

2.2 Proposed Dispatch Logic for Ancillary Services Procured in HASP

The current software functionality is configured to procure Ancillary Services in HASP from internal resources, dynamic system resources and non-dynamic system resources, however, Real-Time Dispatch (RTD) does not have a mechanism to dispatch energy associated with operating reserve capacity from non-dynamic system resources procured in HASP.

The CAISO has limited flexibility to dispatch energy from operating reserves for non-dynamic system resources in real-time due to agreements between the market participants and the neighboring Balancing Authority Areas. These agreements typically only allow for a one time mid-hour schedule change per hour. This proposal

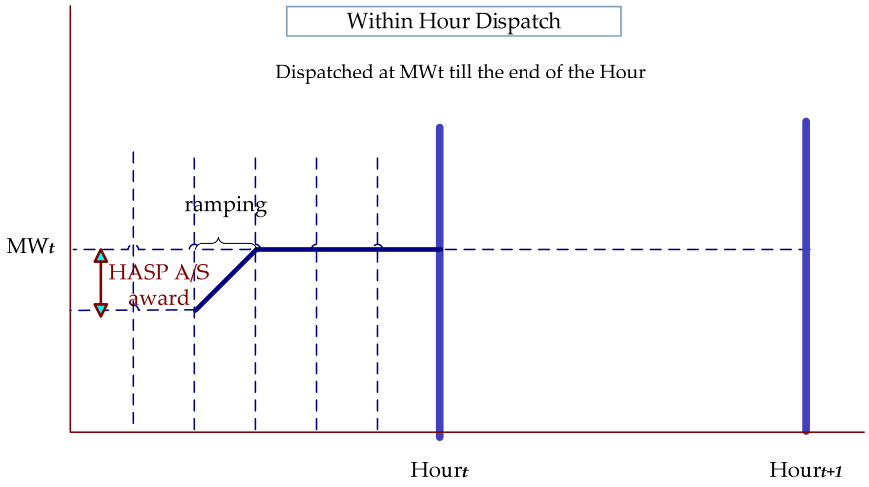
is designed to address the real-time dispatch logic subject to this constraint. The CAISO proposes the following methodology for dispatching hourly inter-tie operating reserve capacity under two assumptions:

1) Non-dynamic system resources are capable of having interchange schedules changed one time mid-hour in real time; and[2]

2) Because operating reserves procured in HASP are Contingency Only, the proposed solutions also assume a contingency dispatch.

1. *Within-Hour Dispatch*

When a real-time contingency occurs, if a non-dynamic system resource receives a dispatch instruction in mid hour for energy associated with its Spinning or Non-Spinning capacity awarded in HASP, it shall be dispatched to operate at a constant level until the end of the hour as shown below.



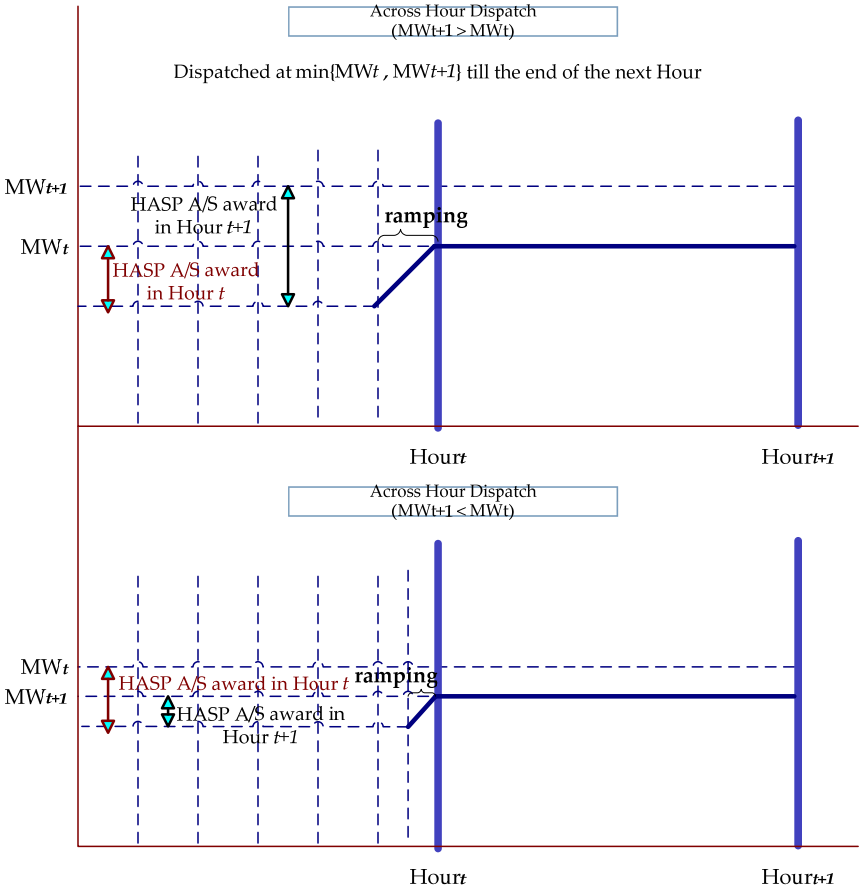
2. *Across-Hour Dispatch*

Since a contingency dispatch is for 10-minutes and can across an hourly boundary, if a contingency dispatch covers both the current hour and next hour, the dispatch level shall stay constant until the end of the next hour. If the awarded Spinning or Non-Spinning capacity is different between the current hour and the next hour, the lower amount of the awarded capacity shall be used for dispatch purposes.

In summary, when inter-tie operating reserve capacity procured in HASP is dispatched in real-time, the dispatch level will stay constant until the end of the hour if dispatched within the hour, or until the end of the next hour when dispatched across an

[2] Should non-dynamic system resources are capable of having more than one time mid-hour schedule changes in the future, then the proposed dispatch logic can be adjusted accordingly.

hourly boundary. In the latter case, the lower amount of the awarded operating reserve capacity between these two adjacent hours applies as shown below.



3 Process and Timetable

The following timetable shows the proposed stakeholder process for developing the proposal and presentation to CAISO Board of Governors for approval. The CAISO welcomes stakeholder comments on this straw proposal. Written comments should be submitted to Holly Liu at dliu@caiso.com by no later than August 19, 2009.

August 5, 2009	Post *Straw Proposal*
August 12, 2009	Stakeholder Conference Call
August 19, 2009	Written Comments due
August 27, 2009	Post *Final Proposal*
September 10 -11, 2009	Presentation to CAISO Board of Governors