the hour) and ending at the first time point in its optimization period (i.e., ten minutes after the hour.) It will produce advisory prices and schedules for its second time point (which is five minutes after the first time point), and advisory prices and schedules for its third, fourth and fifth time points, each of which would be fifteen minutes apart. The RTD run that posts its results at ten minutes after the beginning of the hour ("RTD_{10}") will initialize at five minutes after the beginning of the hour and produce prices over a sixty minute optimization period. RTD_{10} will produce binding prices and schedules for the interval beginning when it posts its results (i.e., at ten minutes after the hour) and ending at the first time point in its optimization period (i.e., fifteen minutes after the hour.) It will produce advisory prices and schedules for its second, third, fourth and fifth time points, each of which would be fifteen minutes after the preceding time point.

b. Description of the Real-Time Dispatch Process

(i) The First Pass

The first Real-Time Dispatch pass consists of a least bid cost, multi-period co-optimized dispatch for Energy, Regulation Service and Operating Reserves that treats all Fixed Block Units that are committed by RTC, or are otherwise instructed to be online or remain online by the ISO as if they were blocked on at their UOL_N or UOL_E, whichever is applicable. Resources meeting Minimum Generation Levels and capable of being started in ten minutes that have not been committed by RTC are treated as flexible (i.e. able to be dispatched anywhere between zero (0) MW and their UOL_N or UOL_E, whichever is applicable). The first pass establishes "physical base points" (i.e., real-time Energy schedules) and real-time schedules for Regulation

Service and Operating Reserves for the first time point of the run. Physical base points and schedules established for the first time point shall be binding and shall remain in effect until the results of the next run are posted. Physical base points and schedules established for all subsequent time points shall be advisory. The first pass also produces information that is used to calculate the RTD Base Point Signals that the ISO sends to Suppliers.

When establishing physical base points, the ISO shall assume that each Generator will move toward the physical base point established during the first pass of the prior Real-Time Dispatch run at its specified response rate.

A. Upper and Lower Dispatch Limits for Dispatchable Resources not Intermittent Power Resources

When setting physical base points for a Dispatchable Resource at the first time point, the ISO shall ensure that they do not fall outside of the bounds established by the Resource's lower and upper dispatch limits. A Resource's dispatch limits shall be determined based on whether it was feasible for it to reach the physical base point calculated by the last RTD run given its: (A) metered output level at the time that the Real-Time Dispatch run was initialized; (B) response rate; (C) minimum generation level; and (D) UOL_N or UOL_E, whichever is applicable. If it was feasible for the Resource to reach that base point, then its upper and lower dispatch limits shall reflect the highest and lowest output levels it could achieve over the next RTD interval, given its UOL_N or UOL_E, as applicable, and starting from its previous base point. If it was not feasible for the Resource to reach that base point, then its upper and lower dispatch limits shall reflect the

B. Upper and Lower Dispatch Limits for Intermittent Power Resources that depend on wind as their fuel

For the first time point and later time points for Intermittent Power Resources, the Lower Dispatch Limit is zero and the Upper Dispatch Limit is the Wind Energy Forecast for that Resource.

C. Setting Physical Basepoints for Fixed Generators

When setting physical base points for Self-Committed Fixed Generators in any time point, the ISO shall consider the feasibility of the Resource reaching the output levels that it specified in its self-commitment request ~~or, for Intermittent Power Resources depending on wind as their fuel, the output level specified by the Wind Energy Forecast,~~ for each time point in the RTD run given: (A) its metered output at the time that the run was initialized; and (B) its response rate.

When setting physical base points for ISO-Committed Fixed Generators in any time point, the ISO shall consider the feasibility of the Resource reaching the output levels scheduled for it by RTC for each time point in the RTD run given: (A) its metered output at the time that the run was initialized; and (B) its response rate.

The RTD Base Point Signals sent to Self-Committed Fixed Generators shall follow the quarter hour operating schedules that those Generators submitted in their real-time self-commitment requests ~~or, for Intermittent Power Resources depending on wind as their fuel, the output level specified by the Wind Energy Forecast,~~, regardless of their actual performance. The RTD Base Point Signals sent to ISO-Committed Fixed Generators shall follow the quarter hour operating schedules established for those Generators by RTC, regardless of their actual performance. To the extent possible, the ISO shall honor the response rates specified by such Generators when establishing RTD Base Point Signals. If a Self-Committed Fixed Generator's operating schedule is not feasible based on its real-time self-commitment requests then its RTD

Base Point Signals shall be determined using a response rate consistent with the operating schedule changes.

Issued by: Elaine D. Robinson, Dir. Reg. Affairs Effective: June 18, 2008
Issued on: April 18, 2008

regardless of their minimum run-time status. This pass shall establish "hybrid base points" (i.e., real-time Energy schedules) that are used in the third pass to determine whether minimum run-time constrained Fixed Block Units should be blocked on at their UOL_N or UOL_E, whichever is applicable, or dispatched flexibly. The ISO will not use schedules for Energy, Regulation Service and Operating Reserves established in the second pass to dispatch Resources.

The upper and lower dispatch limits used for ISO-Committed Fixed and Self-Committed Fixed Resources, as well as for Dispatchable Generators scheduled to provide Regulation Service, shall be the same as the physical base points calculated in the first pass.

A. Upper and Lower Dispatch Limits for Dispatchable Resources not Intermittent Power Resources

The upper dispatch limit for the first time point of the second pass for a Dispatchable Resource not scheduled to provide Regulation Service shall be the higher of: (A) its upper dispatch limit from the first pass; or (B) its "pricing base point" from the first time point of the prior RTD interval adjusted down within its Dispatchable range for any possible ramping since that pricing base point was issued.

The lower dispatch limit for the first time point of the second pass for a Dispatchable Resource not scheduled to provide Regulation Service shall be the lower of: (i) its upper dispatch limit from the first pass; or (ii) its pricing base point for the first time point of the prior RTD interval adjusted down within its Dispatchable range to account for any possible ramping since that pricing base point was issued.

The upper dispatch limit for the later time points of the second pass for a Dispatchable Resource that was not scheduled to provide Regulation Service in the first pass shall be

determined by increasing its upper dispatch limit from the first time point at the Resource's response rate, up to its UOL_N or UOL_E, whichever is applicable. The lower dispatch limit for the later time points of the second pass for such a Resource shall be determined by decreasing its lower dispatch limit from the first time point at the Resource's response rate, down to its minimum generation level.

B. Upper and Lower Dispatch Limits for Intermittent Power Resources that Depend on Wind as their Fuel

For the first time point and later time points for Intermittent Power Resources, the Lower Dispatch Limit is zero and the Upper Dispatch Limit is the Wind Energy Forecast for that Resource.

(iii) The Third Pass

The third Real-Time Dispatch pass is the same as the second pass with three variations. First, the third pass treats Fixed Block Units that are committed by RTC, or are otherwise instructed to be online or remain online by the ISO that received a non-zero physical base point in the first pass, and that received a hybrid base point of zero in the second pass, as blocked on at their UOL_N or UOL_E, whichever is applicable. Second, the third pass produces "pricing base points" (i.e., real-time Energy schedules) instead of hybrid base points. Third, and finally, the third pass calculates real-time Energy prices and real-time Shadow Prices for Regulation Service and Operating Reserves that the ISO shall use for settlement purposes pursuant to Article 4, Rate Schedule 3, and Rate Schedule 4 of this ISO Services Tariff respectively. The ISO shall not use schedules for Energy, Regulation Service and Operating Reserves that are established in the third pass to dispatch Resources.

c. Variations in RTD-CAM

When the ISO activates RTD-CAM, the following variations to the rules specified above in Sections I.A.1.a and 1.b shall apply.