

Stakeholder Comment Form

Rule 6.6 Review – Recommendation Update

Date of Request for Comment: February 2, 2009
Period of Consultation: January 15, 2009 to February 2, 2009

Stakeholder: ENMAX_____

Recommendation	Stakeholder Comments
1 The AESO recommends that steady state dispatch compliance is based on the unit integrated average MW output for each clock 10 minute period	<p>If the average unit outputs over specific 10-minute intervals (say, hh:00 to hh:09, hh:10 to hh:19, ... hh:50 to hh:59) are used as a metrics, situations could arise in which one, but not the other, of two units exhibiting identical deviations from their dispatch levels is flagged for a rule violation. An example is provided in Chart 1 at the end of our comments, which shows the (obviously contrived) minute-by-minute deviations of two units from their respective steady state dispatch levels. Except for the time shift, the two sets of deviations are identical. However, the blue unit's 10-minute averages (which are not shown in the chart) are all zero, while the red unit's averages (shown as red squares) oscillate from above to below the tolerance level. Thus, the red unit is flagged as violating the rule while the blue unit is not.</p> <p>The clock-time dependence of the 10-minute averages can be removed by using a 10-minute moving average, as shown in Chart 2. In this case both units are seen to be moving in and out of the tolerance band by the same amount, so the one-but-not-the-other problem is eliminated. Since increasing the length of the moving average to 15 minutes eliminates the violations (Chart 3), the choice of the averaging interval is important. Some of the methods suggested in our previous comments, such as determining zero-crossing times or counting consecutive measurements above or below the dispatch level, might also be useful.</p> <p>Another disadvantage of a fixed-interval average is that the status of a unit is updated only every interval-length minutes. A moving average may therefore provide a more responsive</p>

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	<p>mechanism for the system controller to determine whether a unit is moving back into compliance.</p> <p>A simple moving average is a particular type of digital filter. Various digital filter design techniques can be used to create other filters (essentially <i>weighted</i> moving averages) that may be better suited to the detection of dispatch variances and the avoidance of “false positives.” ENMAX would be happy to discuss these with the AESO and other stakeholders. (Given the rather technical nature of the design techniques, this comment matrix is not the right forum for such a discussion.)</p>
<p>2 The AESO recommends that the maximum delay time to start ramping be increased to 10 minutes and</p>	<p>ENMAX supports allowing 10 minutes for a ramp to start. We note, however, that due to random fluctuations in unit output, detecting a single up or down movement (depending on whether the dispatch level is to rise or fall) is generally not an effective method for determining whether the a unit has started to ramp.</p>
<p>3. Participants submit a ramp profile for each of their generating assets.</p>	<p>ENMAX supports having the ability to submit a ramp profile for each unit. Appropriate leeway is required around that profile, however, because ramping can take place under a wide range of operating conditions and the units do not necessarily respond the same way in every case.</p>
<p>4. The rule will contain language that prohibits intentional deviation from the dispatch level. Checks for intentional non-compliance include deviation and price correlation, synchronization to the grid, intentionally operating at a different level than the dispatch level</p>	<p>ENMAX supports prohibiting intentional deviations from the dispatch level. We also support having a “due diligence” defense to any violations, and we remain concerned about the potential for a PPA Buyer to be held accountable for actions taken or not taken by PPA Owners.</p> <p>The suggested metrics for non-compliance, such as price correlations, require further discussion before we can state whether or not we support them. Regardless of which metrics are ultimately selected, however, we believe it is important for the AESO and the market participant to communicate during and after any suspected dispatch violation and to work cooperatively to resolve them. Given the number of dispatches in a year, the statistical likelihood of zero violations is small, even if the participant is using good electric operating</p>

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	procedures, so it is important that the AESO check out any operational reasons for violations before determining that a rule violation has occurred.
5. Next steps	<p>Following a final decision on the metric(s) that will be used to measure compliance, the detailed wording of the rule must be developed. That wording is critical, and ENMAX cannot “sign off” on its support for the rule until that task is completed.</p> <p>As a final comment, ENMAX appreciates the level of consultation that the AESO has undertaken on this rule.</p>

Chart 1: Deviations from the dispatch level for the Red and Blue Units and the Red Unit's 10-minute, fixed-interval average deviations. (The values are illustrative only and not intended to relate to the final rule.)

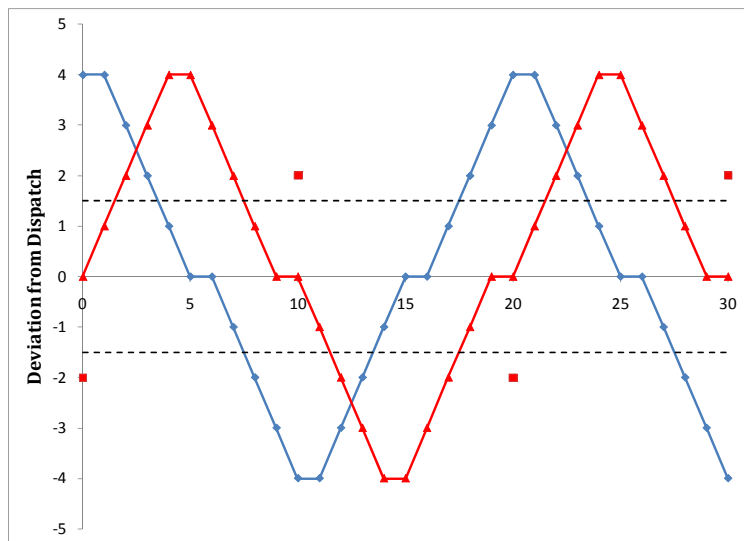


Chart 2: The Red and Blue Units' 10-minute moving average deviations

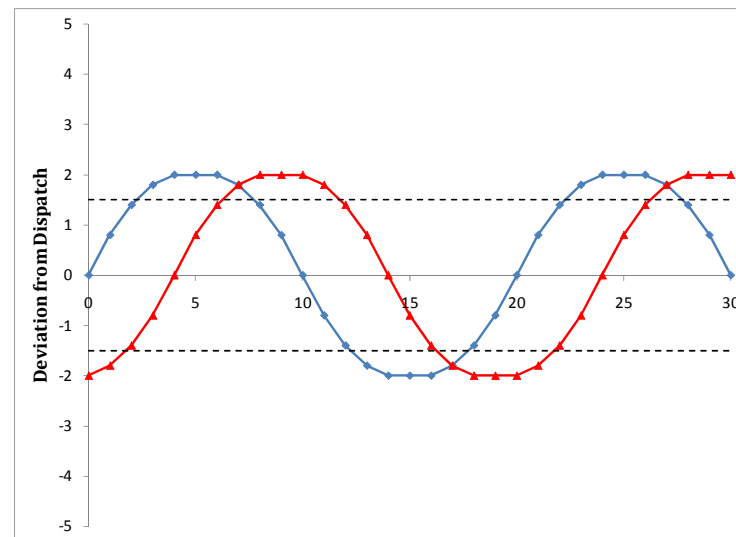


Chart 3: Comparing 10-minute (dashed line) and 15-minute (solid line) moving averages for the Blue Unit.

