Submitted By	Company	Date Submitted
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The CAISO has proposed two changes to its Pay-For-Performance Regulation ("PFPR") program based on a review following the first year of the PFPR program:

1. Calculate the monthly accuracy metric use a weighted average of differences between the resource's set point and its telemetered output; and

2. Decrease the threshold at which a PFPR regulation resource would be required to recertify from the current value of 50% to 25%.

With regard to the second proposed change – it seems clear from the CAISO's statistics that the current fleet is unable to meet the proposed 50% monthly accuracy metric. Given that, the proposed reduction in the monthly threshold is reasonable. Until there is a fundamental change in the nature and capabilities of the resources providing regulation service, requiring all resources to regularly recertify because they cannot meet a monthly performance threshold would provide no benefit. NRG does not oppose this change.

With regards to the first proposed change –

As the CAISO explains:

> *This change is appropriate because the simple average assumes the same potential reliability impact for poor performance in intervals with limited mileage as poor performance in intervals with high mileage. However, when high mileage occurs in a 15 minute interval this is evidence of greater reliability concerns since regulation resources are moved farther from the regulation set point. This occurs because of larger differences between system conditions assumed in the real-time dispatch and actually observed requiring more movement.* (Issue Paper and Straw Proposal at 6.)

NRG questions this proposed change. In the example offered in the CAISO's issue paper and straw proposal, the resource that has a greater error to its DOT has a higher accuracy, because that accuracy is measured is measured as a percentage of the resource's output relative to its DOT:

DOT (MW)	Output (MW)	Accuracy (%)	Variance from DOT (MW)
50	5	10%	45
250	200	80%	50
		45%	

However, measuring accuracy as a percentage of the resource's output relative to its DOT means that, in the CAISO's example, the resource that has a greater absolute error relative to its instruction (50 MW) is

determined to have a higher accuracy (80%) than the resource that has a smaller absolute error relative to its instruction (45 MW, 10%).

While a regulation resource's performance in different situations may have different impacts on reliability (e.g., during over-generation conditions, a regulation resource whose output is much lower than its set point (and therefore have a lower accuracy) may be improving reliability relative to a regulation resource whose output is slightly higher than its DOT (and therefore has a high accuracy). In general, a regulation resource's performance could be measured as the absolute error from its set point, not the percent of its MW error relative to its DOT. Accepting that premise, measuring performance as a percentage of error – whether a weighted average or a simple average of that percentage – may not be the most effective measure of regulation performance.

Whether a regulation resource has a high mileage or a low mileage requirement relative to a given set point is the result of several factors, including how other resources are complying with their set point instructions. NRG is not yet persuaded that a high mileage requirement in a given 15-minute interval is *de facto* evidence that there will be greater reliability impacts associated with not accurately following the set point. As a result, NRG is not yet persuaded that the CAISO's proposal to calculate the accuracy metric as a weighted average instead of a simple average of the resource's output relative to its set point is a reasonable change. Based on the CAISO's example, NRG also questions whether the fundamental nature of the accuracy calculation should be re-examined.