Mitigation for Exceptional Dispatch in LMPM Enhancements Phase 2

Draft Final Proposal

September 4, 2012

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1   Introduction

Implementation of the second phase of the LMPM Enhancements market initiative will introduce a dynamic assessment of local market power and end the static approach that has historically been taken. While this feature will greatly improve the accuracy of local market power mitigation within the market dispatch, it does introduce a gap in identifying and mitigating for Exceptional Dispatch that have local market power. This proposal addresses that gap through a separate set of path designations that are based on the dynamic designations and will be used in applying mitigation to Exceptional Dispatch. The proposal also extends the methodology to providing a set of default path designations that will be used as "back-up" in the event that the dynamic competitive path assessment within the market software fails to produce a valid set of path designations.

2   Process and Time Table

Item	Date
Post Issue Paper and Straw Proposal	July 20, 2012
Stakeholder Conference Call	July 27, 2012
Stakeholder Comments Due	August 3, 2012
Post Draft Final Proposal	September 7, 2012
Stakeholder Conference Call	September 11, 2012
Stakeholder Comments Due	September 18, 2012
Board Meeting	November 1-2, 2012

3   Latest Development, Stakeholder Feedback, and Historical Analysis

Since the previous conference call on the issue paper and straw proposal, several stakeholders have provided comments and feedback. The ISO has also filed to adjust mitigation applied to Exceptional Dispatch in response to observed exercise of market power. While not related to the implementation of the second phase of LMPM enhancements, this filing is directly related to the subject of this market initiative.

Recent ISO Filing on Exceptional Dispatch Mitigation

ISO has submitted a tariff filing to revise the existing method of exceptional dispatch mitigation. The filing is a separate process, but is related to this initiative. In the tariff filing on August 23, 2012, the ISO requested an addition to the existing exceptional dispatch mitigation such that all exceptional dispatch instructions to a resources minimum dispatchable level be subject to mitigation up to that output level. This applies only to resources that have a ramp rate differential along their output curve. The mitigation applies for all reasons, including but not

limited to constraint management and non-modeled issue.[1] Since the exceptional dispatch mitigation up to the minimum dispatchable level generation is already covered by the emergency tariff filing, the purpose of this initiative is to address mitigation for capacity starting from dispatchable minimum generation.

Summary of Stakeholder Feedback

Stakeholders commented that Path 15 and 26 is treated differently, by being designated as competitive by default unless historical data analysis shows otherwise. The proposal provides separate rules for determining the competitiveness of Path 15 and Path 26 in recognition of the observations that (1) these inter-zonal interfaces are not often binding and (2) cover a sufficiently large pool of supply with sufficient ownership and control that they are more likely to be competitive. Historically, these paths have been "grandfathered" competitive. DMM has found that under most conditions, these paths have a competitive supply of counter-flow. The separate rule applied to determining the competitiveness of these paths is intended to avoid having them deemed non-competitive much of the time simply because they have not been congested at least 10 hours in the past 60 days.

There was concern expressed that energy from Exceptional Dispatch should be excluded from the DCPA for in-market mitigation. While this energy is dispatched outside of the market, the resulting schedule is recognized and accounted for by the market software in dispatch and pricing. Removing ExD unit capacity from the DCPA would decrease the extent to which the DCPA results reflect actual market conditions. For this reason, we propose to continue to include ExD energy in the DCPA calculation.

There was also concern regarding the proposed threshold parameters. The proposal suggests a small hour threshold (10 hours) and a large but not too stringent percent threshold (75%) to use historical results. The current hour and percent threshold, although not perfect, can serve the purpose well. These thresholds are retained in the draft final proposal.

Finally, the issue was raised regarding how non-modeled reasons for ExD would be evaluated in the proposed framework. If an issue is not modeled then it will not have the opportunity to bind in the market, be evaluated by the in-line DCPA, and have a history of path designations to draw upon for purposes of determining whether or not the ExD was made under competitive conditions. Without this history of DCPA results, the ExD reason will always fail to meet the established criteria and will then be deemed non-competitive by default (per the proposal). This is a valid observation, and DMM's position on non-modeled constraints is that they are in most instances non-competitive. The analysis below shows that, in conjunction with the August 23rd filing, a non-competitive designation for ExD made to resolve non-modeled issues impacts a small percent of ExD. In addition, an ad hoc competitiveness assessment for each individual non-modeled constraint would be cumbersome and, because they may not be flow-based, would not fit into the existing competitive path assessment framework and each may require a customized methodology. For these reasons, the draft final proposal maintains the proposed treatment of non-modeled reasons such that they are most likely to be deemed non-competitive status.

Historical Exceptional Dispatch Analysis

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[1] For more detail on the changes requested by the ISO in the August 23 filing, see
http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13054231

California ISO

To better understand the real impact of the proposal on the future exceptional dispatch mitigation, historical data is compiled to show the categories of ExD. The historical analysis is based on data from the 12-month period August 1, 2011, to July 31, 2012. The data source is the exceptional dispatch logs, which includes both formatted and unformatted information. The analysis considers only exceptional dispatch with a "minimum go-to" and thus would most likely be subject to mitigation. All records are categorized as "System Competitive", "TModel Competitive", "TModel NonCompetitive", "NonTModel". For the category of "NonTModel", it is further categorized by whether the ExD is below or at dispatchable minimum generation, or other (meaning either it is above dispatch minimum generation, or such information is not available).

The potential impact from the current proposal on mitigation is shown below.

Category	Mitigation			
	Current(*)	Proposed	Change	Impact MW
TModel Competitive	Partial	Partial	No	-
TModel NonCompetitive	Full	Full	No	-
System Competitive	None	None	No	-
NonTModel <= DPmin	Full	Full	No	-
NonTModel Other	Partial/NA(**)	Full	Yes	Dispatchable Pmin up to ExD MW

(*): Based on both existing method and changes proposed in the August 23rd filing.

(**): Not all ExD records can be analyzed to decide whether the dispatch is at or above dispatch minimum generation.

In the table above, "Partial" indicates a portion of the bid curve is subject to mitigation and "Full" indicates the entire bid curve is subject to mitigation. Further discussion of the "TModel", "NonTModel", and other ExD codes is found in the ISO Market Operations BPM and Operating Procedure 2330.[2]

Only ExD for the "NonTModel Other" category is impacted by the current proposal, and the impacted capacity is limited to the positive difference between the ExD MW and the minimum dispatchable level.

The chart below shows the breakdown of each category during the historical 12-month period. The category "NonTModel Other" is only 14% of exceptional dispatch.

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[2] See Market Operations BPM at https://bpm.caiso.com/bpm/bpm/version/000000000000175 and Operating Procedure 2330 at http://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx.
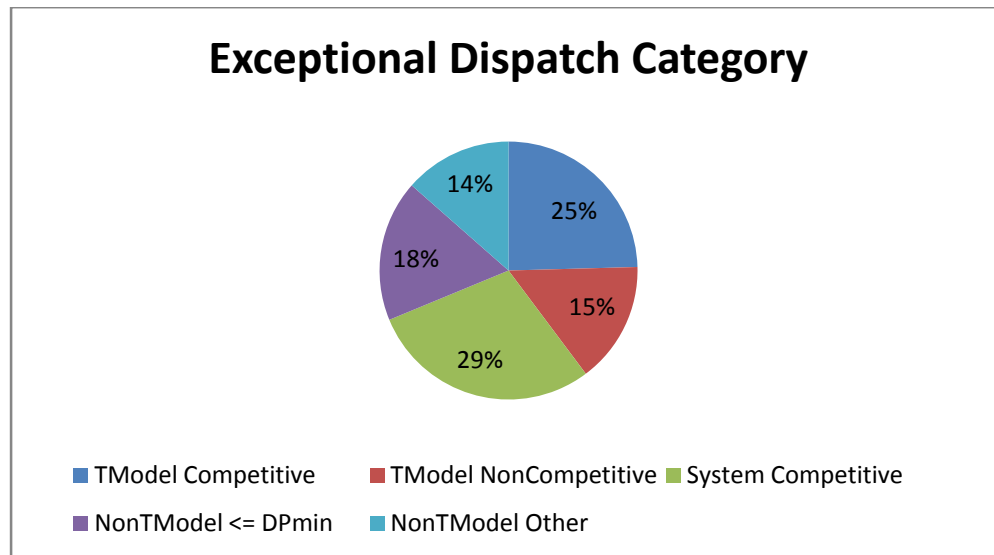
Figure 1: Relative frequency of Exceptional Dispatch by category

4 Overview of Existing Mitigation Process

Under existing rules, Exceptional Dispatch are subject to mitigation under three circumstances where the Exceptional Dispatch was made to

1. Manage an non-competitive constraint,
2. Make available stranded Ancillary Services or RUC Availability that were procured in the day ahead, and
3. To manage specific resources whose water source comes from the Sacramento Delta ("delta dispatch").

When an exceptional dispatch is made for any of these three reasons, the price applied to the calculated Exceptional Dispatch Energy (EDE) is mitigated to the better of the resource's Default Energy Bid or the Locational Marginal Price (LMP).

Cases where the Exceptional Dispatch was made to manage an non-competitive constraint are identified by associating the constraint indicated by the CAISO Grid Operator in the Exceptional Dispatch log with the corresponding constraint on the list of competitive constraints that is produced four times each year by the Department of Market Monitoring using the static competitive path assessment methodology.

5 Impact of Dynamic Competitive Path Assessment on Mitigation for Exceptional Dispatch

As described above, the existing approach for determining when to apply mitigation to Exceptional Dispatch that were made to manage an non-competitive constraint relies on the existence of a list of competitive and non-competitive constraints. Currently a static list exists that is the outcome of a competitive path assessment performed four times each year by the Department of Market Monitoring. When LMPM Enhancements Phase 2 is implemented in the Spring of 2013 the real time market will have a dynamic competitive path assessment performed in-line with the execution of the market software and the static list will no longer be

produced. This creates a gap in identifying circumstances where Exceptional Dispatch are made to manage non-competitive constraints and appropriately applying local market power mitigation.

Most Exceptional Dispatch are preemptive – made in anticipation of certain circumstances based on observed system and market conditions as opposed to reacting to an event or circumstance that has already happened. Preemptive Exceptional Dispatch made to manage transmission constraints may have the effect of relieving the anticipated congestion such that it does not materialize in the market. In this case, since the congestion was preempted by the Exceptional Dispatch there will be no dynamic competitive path assessment performed for that constraint. This introduces a potentially material under-identification of local market power since the Exceptional Dispatch was made under circumstances that presumed congestion and was limited by the set of resources that were effective in relieving the presumed congestion. These circumstances may have been non-competitive and created local market power that could not be detected by the dynamic competitive path assessment since the Exceptional Dispatch relieved the congestion in the market and precluded assessment and application of mitigation.

A separate set of path designations is required to address applying mitigation to Exceptional Dispatch made to manage non-competitive constraints. This is only an issue with Exceptional Dispatch that are made to manage transmission constraints in real time.

The dynamic competitive path assessment that identifies local market power within the execution of the market software presumes a constraint is competitive unless it fails the competitiveness test. In this case, the presumption of competitive unless proven otherwise is predicated on the availability of a positive test for competitiveness. In the case described above where the Exceptional Dispatch relieved the congestion that would have prompted the test, there is no positive test to rely on to identify non-competitive circumstances. The default of competitive is not valid unless there is a positive test to determine otherwise. The proposed methodology accounts for this gap.

6   Proposal for Triggering Mitigation of Exceptional Dispatch for Non-competitive Constraints

The ISO proposes to use historical designations produced by the dynamic competitive path assessment that is executed in the RTUC market runs to create a set of path designations that are used in applying mitigation to Exceptional Dispatch. The proposed methodology applies a threshold to both the frequency of observed congestion as well as the frequency with which the constraint is deemed competitive by the dynamic competitive path assessment. As discussed above, the underlying premise that supports a competitive default designation does not hold in the case where the path has not been sufficiently tested. In cases where there is insufficient testing (the frequency with which the path has been binding and tested does not meet the threshold) the path will be deemed non-competitive for purposes of applying mitigation to Exceptional Dispatch.

The proposed methodology for determining path designations for purposes of applying mitigation to Exceptional Dispatch is

- A constraint that passes the following two thresholds will be deemed competitive for purposes of applying mitigation to Exceptional Dispatch:
  - Congestion Threshold: Congested in 10 hours or more in the RTUC run where the dynamic competitive path assessment is calculated, and

    o   Competitive Threshold: Deemed competitive 75 percent or more of the instances where the constraint was binding and tested.

- Data for the test statistics will reflect the most recent 60 days of trade dates available at the time of testing to focus application on more seasonal conditions.
- This set of designations will be updated not less frequently than every seven days to reflect changes in system and market conditions.

The purpose of the Congestion Threshold is to ensure there are sufficient instances where the constraint has been tested in the past 60 days such that the Competitive Threshold is a more robust statistic. The purpose of the Competitive Threshold is to strike a balance between the two non-observable conditions at the time of the Exceptional Dispatch. The proposed 75 percent threshold is intended to provide allowance for some historical observations of non-competitive conditions but still ensure that the constraint has been predominantly competitive before excusing associated Exceptional Dispatch from the application of local market power mitigation.

As described above, since there may be no positive test of competitiveness in a particular interval we substitute a statistic based on historical tests (via the dynamic assessment) as a proxy for determining whether or not the constraint for which the Exceptional Dispatch was made was competitive or non-competitive at the time the dispatch was made.

An exception to the above criteria will apply to Path 15 and Path 26. These two paths will be considered competitive unless the constraint was congested in 10 or more hours in the test period and was deemed non-competitive less than 75 percent of the time. This exception allows these major inter-zonal interfaces to remain competitive even when they have not been binding in the past 60 days. If they have been binding 10 or more hours and test competitive less than 75 percent of the time then the designation used for applying mitigation to Exceptional Dispatch will be non-competitive.

7 Default Designations for Use if LMPM Process Fails

There is an additional process that requires path designations in the event they are not available from the market. Competitive path designations are required in the event of a failure of the dynamic competitive path assessment in the market software. In this instance, the next step in the mitigation process, the mitigation trigger (LMP Decomposition), may still be able to run if provided a set of path designations that can be used in the decomposition of the LMP and evaluation of need for mitigation. Further, if the entire mitigation process is unable to run the price evaluation and correction process will need a set of path designations to use in evaluating whether or not the absence of mitigation had a material impact on price.

The path designations that result from the proposed approach in Section 6 can be used as the default set of path designations effective in the event the dynamic competitive path assessment does not complete successfully in the market software. The set of default path designations based on historical data from the real time market (used for mitigation of Exceptional Dispatch) will serve as the default designations for the HASP and RTUC runs of the mitigation process. The ISO will use the same methodology applied to historical data from the day ahead market to produce a set of default designations to be applied in the event of a failure of the dynamic competitive path assessment in the day ahead market.

8   Next Steps

The ISO will discuss this draft final proposal with stakeholders during a conference call to be held on September 11, 2012. The ISO requests comments from stakeholders on the proposed market design described in this straw proposal. Stakeholders should submit written comments by September 18, 2012 to EDMitigation@caiso.com.