Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: June 21, 2016

Re: **Decision on congestion revenue right settlement modifications**

This memorandum requires Board action.

EXECUTIVE SUMMARY

Management proposes revisions to rules established in conjunction with the implementation of convergence bidding in 2010 that prevent using convergence bids to artificially inflate congestion revenue right (CRR) payments. Convergence bid awards (i.e., "virtual awards") can alter congestion in the day-ahead market and impact payments for a congestion revenue right. Under the ISO's congestion revenue right "settlement" rule, if the congestion impact of a market participant's virtual award exceeds a threshold, the ISO settlement process rescinds the market participant's CRR payments resulting from the virtual awards. Imports or exports that are reduced in the real-time market are also considered virtual awards under the settlement rule. However, virtual bids cleared at default load aggregation points and trading hubs are exempt from the settlement rule.

Market participants have stated that having import and export reductions subject to the CRR settlement rule limits the quantity of economic bids they are willing to submit to the real-time market to reduce day-ahead scheduled imports and exports. In response, Management reviewed with stakeholders the application of the settlement rule to imports and exports to examine if it could be modified to eliminate potential disincentives to economical bids in the real-time market. In reviewing this issue and the current congestion revenue right settlement rule, the ISO's Department of Market Monitoring identified a second issue; the exemption for virtual awards at default load aggregation points and trading hubs could allow market participants to inflate CRR payments without being subject to the settlement rule.

To address these issues Management proposes two modifications to the CRR settlement rule: (1) import and export reductions that are the result of an economic bid that meet specified criteria will not result in settlement of CRR payments, and (2) virtual bids at default load aggregation points and trading hubs will no longer be exempt from the settlement rule.

> ***Moved, that the ISO Board of Governors approves the congestion revenue right settlement modifications, as described in the memorandum dated June 21, 2016; and***

> ***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposed tariff change.***

DISCUSSION AND ANALYSIS

The CRR settlement rule was developed as part of the ISO's original convergence bidding design to mitigate concerns that a market participant could use virtual bids to inflate CRR payments. A congestion revenue right entitles a market participant to receive the difference in the marginal cost of congestion between two pricing nodes. The market participant receives a payment if the transmission system is congested from the source node to the sink node. The settlement rule evaluates the impact that awarded virtual bids and reduced imports and exports have on congestion in the day-ahead market. These "virtual awards" can alter congestion and thus inflate the CRR payment. If the modeled electrical flow caused by a virtual award exceeds 10 percent of the transmission capacity of an internal path or intertie, then the ISO's settlement process rescinds 100 percent of the market participant's CRR payment from that path. Virtual bids at default load aggregation points and trading hubs are currently exempt from the settlement rule.

Management proposes two modifications to the CRR settlement rule: (1) To mitigate disincentives to economically bid imports and exports into the real-time market, import and export reductions between the day-ahead and real-time market that are the result of an economic bid that meet specified criteria will not result in settlement of CRR payments, and (2) to mitigate the potential of a market participant inefficiently inflating CRR payments, virtual bids at default load aggregation points and trading hubs will no longer be exempt from the settlement rule.

Import and Exports Bids

The current CRR settlement rule considers import and export reductions to be virtual awards regardless of the reason for the reduction. Imports and exports that are reduced in the real-time market can impact congestion in the day-ahead market and congestion revenue rights payments. They are termed "implicit virtual bids" because, similar to virtual bids, the reduced import or export is not physically delivered and thus represents a "virtual" transaction.

During a recent workshop the ISO held to examine the causes of the relatively low amount of import and export bids submitted to the real-time market, market participants stated that having import and export reductions subject to the CRR settlement rule limits the quantity of economic bids they are willing to submit to the real-time market to reduce day-ahead scheduled imports and exports. The rule reduces their willingness to rebid imports and exports because a schedule reduction exceeding 10 percent of an intertie's transmission capacity results in settlement of the market participant's CRR payment received in the day-ahead market.

Rebidding day-ahead import and export schedules in the real-time market provides beneficial flexibility and liquidity on the interties. In the case of real-time market 15-minute imports and exports, market participants have stated that it often does not make business sense to bid incremental imports and exports because the market participant has to secure external transmission for the entire hour but is not assured of having its import or export bid dispatched in each 15-minute market interval. However, for day-ahead scheduled imports and exports, the market participant has already procured external transmission for the day-ahead schedule. Thus, market participants can submit economic bids into the real-time market to reduce imports and exports without the added cost and risk of procuring additional external transmission. These bids to reduce day-ahead scheduled imports or exports benefit the real-time market the same as incremental imports and exports. For example, the ISO balancing area gains the same amount of additional energy if the real-time market schedules an incremental import or decreases a day-ahead scheduled export.

Management proposes to modify the settlement rule to distinguish import and export "implicit virtual bids" from normal economic bids. Management proposes to modify the CRR settlement rule as follows:

- If a real-time market <u>import</u> bid price is <u>lower</u> than the day-ahead market bid price, then the import will not result in the rescission of the congestion revenue right payment.

- If a real-time market <u>export</u> bid price is <u>higher</u> than the day-ahead market bid price, then the export will not result in the rescission of the congestion revenue right payment.

- If a real-time market import or export schedule is reduced relative to the day-ahead schedule because the market participant did not submit an economic bid or self-schedule to the real-time market for the full amount of the day-ahead schedule, then the amount reduced will result in the rescission of the congestion revenue right payment.

Management designed these rules to distinguish implicit virtual bidding from normal economic bidding. A market participant seeking to submit implicit virtual bids solely to inflate CRR payments would bid in such a way as to not have a day-ahead scheduled import or export re-clear the real-time market. For example, a market participant could re-bid a day-ahead import into the real-time market at a high price close to the $1,000 bid cap. Alternatively, the market participant could re-bid an export into the real-time market at a low price, for example the -$150 bid floor. Either of these bids would likely not clear the market and will result in the import or export schedule being reduced to zero.

Similarly, the modifications also subject an import or export schedule to the settlement rule if the import or export is reduced in the real-time market because the market participant did not submit an economic bid or self-schedule in the real-time market for the full amount of the day-ahead schedule.

However, if a market participant rebids an import or export into the real-time market consistent with the day-ahead market price and the real-time market reduces the import or export schedule, this should <u>not</u> be considered an implicit virtual bid because the market participant did not bid in a way to increase the likelihood that the real-time market would reduce the import or export schedule.

Virtual Bids at Aggregation Points

Currently, virtual bids placed on trading hubs and load aggregation points are exempt from the CRR settlement rule. These bids were exempt because during the original virtual bidding design process Management anticipated that liquidity at these aggregation points would reduce the likelihood that an individual virtual bidder could effectively manipulate prices at these locations. Also, Management anticipated that the flows resulting from bids at these trading hubs and load aggregation points would be distributed across many nodes so it would be difficult for a market participant to target a single node at which it held congestion revenue rights.

However, the Department of Market Monitoring has identified instances in which market participants have submitted virtual bids at trading hubs and load aggregation points that resulted in inflated CRR payments. The market optimization clears bids at the aggregation point and manages congestion using the shift factor of the aggregation point to constraints. Thus, bids at aggregation points can cause constraints to bind resulting in congestion in the day-ahead market in the same manner as bids at individual pricing nodes. Therefore, Management proposes to make virtual bids at load aggregation points and trading hubs subject to the CRR settlement rule.

POSITIONS OF THE PARTIES

Stakeholders generally support the proposed changes to the application of the CRR settlement rule to imports and exports. Most believe the bidding provisions will allow market participants who bid consistent with the rules to increase the quantity of day-ahead schedules rebid into the real-time market. A limited number of stakeholders oppose the CRR settlement rule generally, arguing the rule restricts bidding and impedes their activity in the ISO market.

Stakeholders are divided on removing the exemption of virtual bids cleared at load aggregation points and trading hubs from the CRR settlement rule. Many stakeholders argue that virtual bids at these load aggregation points and trading hubs should be evaluated in the same manner as bids at individual nodes. Other stakeholders argue that given market liquidity at these pricing points and hubs and that flows resulting from bids at these points and hubs are distributed across the system, a market participant has limited ability to impact its own CRR payments. They argue these points and hubs should continue to be exempt because having them subject to potential CRR settlement impedes the ability to submit virtual bids without risk of CRR settlement. They argue this could impede the legitimate use of virtual bids for hedging or to increase market efficiency, such as reflecting renewable resource supply that is not scheduled in the day-ahead market.

Management has considered the potential adverse impact of applying the settlement rule to virtual awards at load aggregation points and trading hubs and finds the current exemption is not warranted. For example, if a market participant bid 100 MW at a trading hub and another market participant disaggregated the 100 MW to each of the underlying pricing nodes, the first market participant would not have its cleared convergence bids subject to the settlement rule but the second market participant would, even though the use of the transmission system and impact on congestion is the same. Moreover, because the flow resulting from virtual awards at load aggregation points and trading hubs is dispersed over the system, it would take a large amount of bids by a single participate to have the flow exceed the 10 percent of a transmission elements capacity necessary to trigger the settlement rule. Thus, virtual bids submitted in reasonable amounts at load aggregation points and trading hubs are not likely to trigger the settlement rule.

CONCLUSION

Management requests the Board approve the modifications to the congestion revenue right settlement rule as described in this memorandum. The proposed changes in the application of the rule to imports and exports will address an identified barrier to bidding imports and exports in the real-time market. The modifications will also provide additional protection against artificially inflating CRR payments.