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## **Issue Paper**

# **Congestion Revenue Rights Credit Policy Enhancements**

**March 25, 2008**

# Congestion Revenue Rights Credit Policy Enhancements

## Table of Contents

1	Introduction and Executive Summary.....	3
2	Proposed Timetable .....	5
3	Risk Factors Revealed by Default in PJM.....	6
4	CRR Credit Policy Issues and Proposed Options .....	7
4.1	Credit Policy Enhancements Related to CRR Transfers Associated with Load Migration.....	7
4.2	Calculation of Credit Requirement for Holding a CRR based on Auction Price versus a More Accurate Measure of the Expected Value of the Right – An Enhancement based on Lessons Learned from CRR Allocation and Auction .....	8
4.3	Assessment and Mitigation of Credit Risks as a Result of Lessons Learned from the PJM Default & Review of the NYISO and MISO Credit Policy Filings.....	11

## CRR Credit Policy Enhancements

*Prepared for Discussion at Stakeholder Meeting on April 1, 2008*

### 1 Introduction and Executive Summary

Since FERC accepted the CAISO Tariff provisions on credit policy for Congestion Revenue Rights (CRRs) on August 28, 2007, the CAISO has gained additional experience concerning CRRs and the risks that CAISO credit policies are intended to address. In addition, the recent PJM Firm Transmission Rights (FTR) default has revealed risks associated with undiversified counter-flow portfolios. In light of the PJM default, both the New York ISO (NYISO) and the Mid West ISO (MISO) have also filed additional credit provisions to address the potential default risk associated with negative, zero, and low-positively priced transmission rights acquired in auctions. The CAISO believes it is necessary to review lessons learned from its own experience to date and the PJM default, and to explore with its stakeholders additional areas for improvement to its CRR credit policies to reduce potential financial risks.

This paper reviews current CRR credit policy and proposes the following policy enhancements for discussion with stakeholders.

- 1) Credit policy enhancements related to CRR transfers associated with load migration;

Pursuant to existing tariff provisions, when load migrates from one LSE to another, the CAISO will create new CRRs that will be provided to the load gaining LSE and the load losing LSE will be assigned counter-flow CRRs to offset the newly created CRRs allocated to the load gaining LSE. If the load losing LSE has already sold the allocated CRRs prior to load migration or the LSE has procured offsetting counter-flow CRRs through the auction, there is a potential risk that the load losing LSE may not have enough credit coverage to cover the counter-flow CRRs, and may be unable to provide it. To prevent this from occurring, the CAISO proposes the following policy enhancements.

- i) Disallow credit netting between allocated CRRs and auctioned CRRs in the credit requirement calculation. This would prevent a LSE from cashing out its allocated CRRs and eliminating ongoing credit requirements for the allocated CRRs, and
- ii) In conjunction with item i), one of the following options:
  - 2a) Prohibit LSEs from selling allocated CRRs, or
  - 2b) Require LSEs selling allocated CRRs to maintain sufficient credit coverage to collateral to cover the counter-flow CRRs that offset the CRRs being sold (even though the counter-flow CRR would not be created and assigned until and unless load migration occurs)

To achieve sufficient financial protection for CRRs for load migration, this enhancement has to be implemented as the combination of item i) with either item 2a) or 2b). The CAISO seeks stakeholder comment on the preferred

combination. The other option, with stakeholders' consensus, is not to change the current credit policy for CRRs related to load migration.

- 2) Improve the accuracy of the valuation of CRR portfolios for credit purposes by revising the CRR valuation formula to use historical expected value of CRRs in the event the auction price undervalues the risk of the CRR when compared to the historical expected value;
- 3) Assessment and mitigation of credit risks as a result of lessons learned from the PJM FTR market defaults and a review of the recent NYISO and MISO credit policy filings.

### 3.1) Pre-Auction Credit Margin Requirement

To date, the CAISO has not proposed to require auction participants to post sufficient credit to cover the auction prices and the Credit Margin for their bids. The Credit Margin is currently a component of the credit requirements for holding CRRs. The CAISO contemplated calculating the holding requirements after the completion of the auction. Accordingly, there is a risk that the total amount of available auction credit/collateral is lower than the requirements for holding the CRRs. It is possible that a CRR auction participant could successfully win a portfolio of CRRs, but subsequently not be able to provide sufficient credit coverage for the portfolio. To mitigate this risk, the CAISO would like to explore with stakeholders whether to require auction participants to cover the Credit Margin, or a portion of it, as part of their credit requirements for participating in the auction.

### 3.2) Re-filing the full-term credit coverage for Long-Term CRRs

The current Tariff requires only one year of credit coverage for Long-Term CRRs (LT-CRRs) <sup>1</sup> as a result of FERC's ruling on August 28, 2007, which specifically found that using the one-year auction price multiplied by the number of years in the LT-CRR term to establish the credit requirement for holding LT-CRRs would not be accurate. In light of the PJM default and with the proposed modified credit requirement calculation formula, the CASIO believes that FERC would be willing to reexamine its prior finding rejecting the initial CAISO proposal.

### 3.3) Requirement for corporate parent credit backing of affiliated market participants' Estimated Aggregated Liability

The default in the PJM market was attributable to one of several related entities that participated in the PJM market. The CAISO proposes to require entities providing corporate guarantees to multiple CAISO market participants provide a single guarantee drawable in the event of a default by any covered market participant. This should reduce, to some extent, the likelihood of a default if the CRR portfolio valuation for a single such market participant is inaccurate,

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<sup>1</sup> CAISO Tariff Section 12.6.3.3.

by making available additional coverage from the higher amount of the consolidated guaranty.

3.4) Allow the CAISO to increase credit requirements for CRRs based on extended transmission outages and other circumstances that could shift or increase CRR obligations substantially above expected values contemplated at the time of the CRR auction.

Extended transmission outages or other circumstances could change the risk profile of CRRs—even possibly flipping a positively valued CRR to a negatively valued CRR. This was another factor in the PJM default. The CAISO proposes to clarify its Tariff authority to ensure that it has the ability to request additional security for a prospective period to cover increased liabilities as appropriate under these circumstances.

## 2 Proposed Timetable

The CAISO will work with stakeholders to resolve the policy issues discussed in Section 4 below in time for the enhancements to be implemented prior to CRR Year 2 release. This would require Board of Governors' decision in May 2008. In the event that certain issues cannot be resolved within this timeline, the CAISO will continue to work with stakeholders to resolve the remaining outstanding issues over the summer. The important milestones and dates for the CRR credit policy enhancement initiative stakeholder activities are:

March 25, 2008	Post Issue Paper
April 1, 2008	Initial Stakeholder Meeting
April 8, 2008	Stakeholder Written Comments Due to <a href="mailto:CRRComments@caiso.com">CRRComments@caiso.com</a>
April 14, 2008	Post Straw Proposal
April 21, 2008	Stakeholder Conference Call
April 28, 2008	Stakeholder Written Comments Due to <a href="mailto:CRRComments@caiso.com">CRRComments@caiso.com</a>
April 30, 2008	Post Final Proposal
May 7, 2008	Final Stakeholder Conference Call
May 21-22, 2008	BOG Decision

The CAISO requests stakeholders input on issues discussed in this paper. Written comments should be sent to [CRRComments@caiso.com](mailto:CRRComments@caiso.com) by close of business on April 8, 2008. The CAISO will post a template for stakeholder comments to its website at <http://www.caiso.com/1b8c/1b8cdf25138a0.html>.

The CAISO anticipates posting a Straw Proposal for the CRR credit policy issues raised within this paper, and then conducting two additional stakeholder conference calls

– tentatively planned for April 21 and May 7 -- with the aim to develop the proposed tariff changes that will be presented to the CAISO Board of Governors.

### 3 Risk Factors Revealed by Default in PJM

For the benefit of stakeholders, the CAISO provides the following assessment of the PJM FTR market default. A review of PJM default reveals the following major risk factors:

- 1) Risk associated with undiversified negative counter-flow positions;
- 2) Offsetting positions taken by affiliates;
- 3) An extended transmission outage coupled with atypical weather conditions causing positions to deteriorate.

According to PJM's analysis, Power Edge acquired approximately 14,000 MW of counter-flow FTRs, approximately 5000 MW through the 2007/2008 annual auction, and 8900 MW by purchasing bilaterally FTR positions another market participant acquired in the 2007/2008 auctions. Through the end of February 2008, Power Edge's default is estimated to be over \$50 million. Its affiliate, BJ Energy, has earned approximately \$10.4 million in net revenues from its activities in PJM FTR markets for June 2007 through February 2008, much of which is attributable to the offsetting FTR positions it purchased. According to PJM, approximately 50% of the FTRs purchased by BJ Energy are in locations known to provide offset to Power Edge's poor performing counter-flow FTRs. Had BJ Energy's offsetting FTRs been held by Power Edge, they would have directly offset Power Edge's counter-flow position, thereby reducing Power Edge's defaults. Power Edge's position deteriorated significantly due to extended transmission outage that commenced in late November and atypically warmer weather past fall. Power Edge was billed approximately \$2.3 million for its November 2007 activity, \$19.9 million for its December activity, and \$16.0 million for its January 2008 activity.

**Table 1. Default in PJM.**

Participant	FTR Profit (or Loss) June 1, 2007 – February 29, 2008	FTR MW Acquired through 07/08 Annual Auction and Aug ~ Feb 2008 Monthly Auctions	
		Counter Flow (MW)	Prevailing Flow (MW)
Power Edge (FTRs acquired from Exel)	-\$31 million	8931.7	0
Power Edge (FTRs purchased through auctions)	-\$30 million	5671.5	5602.6
Total Power Edge Counter-flow Position		14603.2	
BJ Energy	\$10 million	579.6	1698.5

Both the NYISO and MISO have recently filed at FERC enhancements to their credit policies by requiring minimum credit posting requirements in auctions to address

the risk of loss associated with negative, zero-price, and low-positive priced transmission rights obtained in auctions. The NYISO's proposal was accepted by FERC on February 12, 2008. MISO filed its proposal on February 28, requesting an effective date on or before April 28, 2008 when its next upcoming annual FTR Auction begins.

#### **4 CRR Credit Policy Issues and Proposed Options**

This section discusses major CRR credit policy issues and proposes policy options for stakeholder review and discussion.

##### **4.1 Credit Policy Enhancements Related to CRR Transfers Associated with Load Migration**

LSEs receive allocated CRRs free of charge through the allocation process based on the load that they serve. When load migrates from one LSE to another, the CRRs associated with the migrated load must be transferred to the load gaining LSE. According to the current CAISO MRTU Tariff, the CAISO will create new CRRs that will be provided to the load gaining LSE and the load losing LSE will be assigned counter-flow CRRs to offset the newly created CRRs allocated to the load gaining LSE. Specifically, MRTU Tariff Section 36.8.5.3 states that, upon load migration, the CAISO *“will perform the adjustments by creating and allocating equal and opposite sets of new CRRs for each pair of LSEs affected by Load Migration. The net Load gaining LSE of the pair will receive a set of new CRRs that match the CRR Sources and CRR Sinks of all the Seasonal CRRs and Long Term CRRs previously allocated to the net Load losing LSE of the pair, in MW quantities proportional to the net amount of the net Load losing LSE's Load that migrated to the net Load gaining LSE of the pair within each LAP in which the LSEs serve Load. The net Load losing LSE of the pair will receive a set of new Offsetting CRRs.”*

A potential financial risk exists in the situation where the original owner does not have financial capability to cover the credit requirements of the counter-flow CRRs upon load migration. This could occur in either one of the following circumstances: 1) The load losing LSE has already sold the allocated CRRs prior to load migration; or 2) the LSE has procured offsetting counter-flow CRRs through a subsequent auction. In either case, prior to the load migration, the LSE may need to maintain little or no credit coverage for the CRRs or other obligations with the CAISO. Therefore, once load migration occurs, there is a risk that the load losing LSE would be unable to meet the financial requirements of taking on the counter-flow CRRs.

It has been observed in the first CRR allocation and auction that some LSEs that received allocated CRRs bought negatively valued near exact counter-flow CRRs from the auction (i.e. were paid by the CAISO to take on such CRRs). At present, the allocated CRRs offset the counter-flow CRRs in credit requirement calculation.<sup>2</sup> To mitigate this risk, the CAISO proposes to prohibit netting between allocated CRRs and

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<sup>2</sup> As defined in MRTU Tariff Section 12.6.3.1 (b), *“If a CRR Holder owns more than one CRR, such CRR Holder shall be subject to an overall credit requirement that is equal to the sum of the individual credit requirements applicable to each of the CRRs held by such CRR Holder.”*

auctioned CRRs in the credit requirement calculation. As a result, LSEs that acquire counter-flow CRRs in the auction will need to have sufficient available unsecured credit and/or posted collateral to hold those auctioned CRRs.

In summary, to mitigate the credit risk of CRR transfers associated with load migration, the CAISO proposes the following options for stakeholder discussion.

- 1) Disallow netting between allocated CRRs and auctioned CRRs in the credit requirement calculation.
- 2) Item 1) has to be implemented together with one of the following options:
  - 2a) Prohibit LSEs from selling allocated CRRs, or
  - 2b) Require LSEs selling allocated CRRs to maintain sufficient credit coverage (through an unsecured credit limit or posted collateral) to cover the counter-flow CRRs that offset the CRRs being sold.

The other option, with stakeholders' consensus, is not to change current credit policy for CRR related to load migration. Some stakeholders may view the cost of the additional credit requirements that would result from these proposed changes as outweighing the benefits of reduced risk of default from a load losing LSE that is unable to meet the credit requirements for holding the counter-flow CRRs.

The CAISO seeks stakeholder feedback on the preferred combination of Option 1 and 2, or whether the status quo is acceptable.

#### **4.2 Calculation of Credit Requirement for Holding a CRR based on Auction Price versus a More Accurate Measure of the Expected Value of the Right – An Enhancement based on Lessons Learned from CRR Allocation and Auction**

The current MRTU Tariff (Section 12.6.3.2) defines the credit requirement for holding a CRR with a term of one year or less as the following:

$$\text{CRR Credit Requirement} = - \text{CRR Auction Price} + \text{Credit Margin}$$

That is, the credit requirement for holding a CRR is calculated based on its auction price plus a credit margin. The credit margin is calculated based on the distribution of historical values of the CRR.<sup>3</sup> In this formula, the auction price is used as a proxy for the expected value of the underlying CRR.

There are two available alternatives for predicting the expected value of a CRR: 1) using the historical value of the CRR and, 2) using the auction price, which should reflect the anticipated value of the payments associated with the CRR if the auction is liquid and competitive. The CAISO has previously discussed with the stakeholders, and has

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<sup>3</sup> The methodology of credit margin calculation is documented in a technical bulletin posted to the CAISO website at <http://www.caiso.com/1bb4/1bb4745611d10.html#1c20b49260210>.



concluded that due to lack of market operation data prior to the start of MRTU, auction prices would be the best proxy for the expected value based on the assumption that the CRR auctions would be liquid and competitive enough to generate prices that truly reflect the market value of the rights.

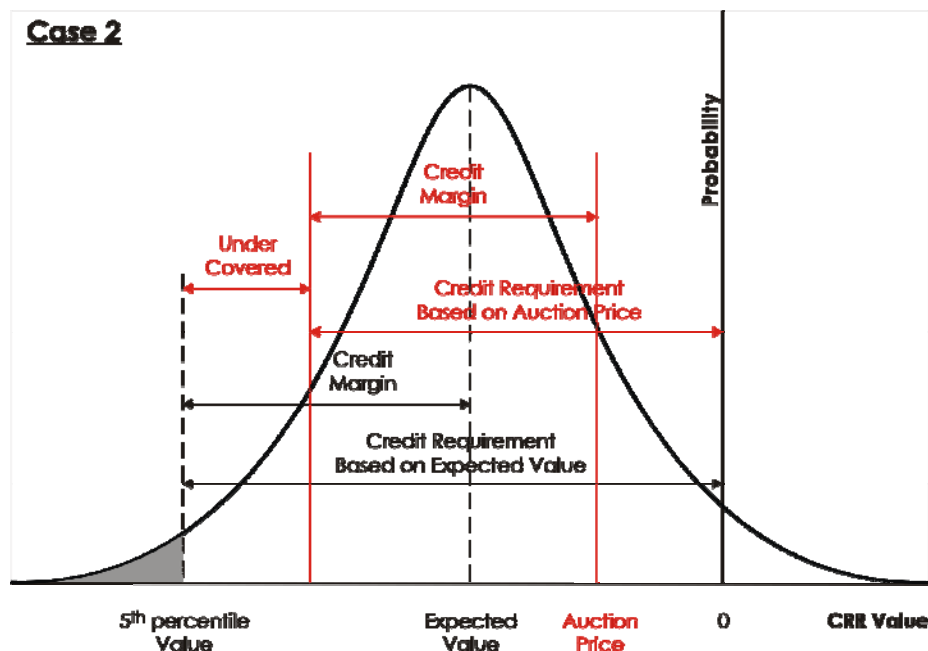
In reviewing the initial auction results, however, the CAISO has found that there was a lack of liquidity and market depth in the CRR auction. The resulting auction prices, therefore, may not reliably reflect the values of payments associated with the CRRs, and as a result, the credit requirements based on auction prices may not provide sufficient coverage for the financial risks associated with the CRRs.

The CAISO undertook an assessment to determine how likely this may be by comparing auction prices against historical expected values. The CAISO has examined various scenarios that could happen for both positively-valued and negatively-valued rights. The analysis shows that in most scenarios the existing credit requirement provides sufficient coverage for the financial risks associated with CRRs. However, under one specific scenario the credit requirement calculated based on auction prices would be insufficient.

Figure 1 demonstrates the scenario of a negatively-valued CRR, for which the auction price is higher (less negative) than the historical expected value. In this case, the credit requirement based on the auction price would be less than that based on the historical expected value.

When this occurs, the CAISO may not have sufficient credit coverage to protect against a default. In this circumstance, the CAISO believes that it should use the historical expected value rather than the auction price to establish the credit requirements for holding the CRR.

**Figure 1. Scenario of Insufficient Credit Requirement**



Although the CAISO anticipates that over time, CRR auctions may become more liquid and competitive as the auction market matures, having the ability to consider both auction price and the historical expected value of a CRR in the calculation of credit requirements would reduce the risk that CRRs would be under-valued and, therefore, reduce credit risk. The CAISO, therefore, proposes to include the historical expected value of CRR in determining credit requirements for holding CRRs. Specifically, the CAISO proposes to modify the formula for calculating the credit requirement for holding a CRR defined in Tariff Section 12.6.3.2

$$\textit{Credit Requirement} = -\textit{CRR Auction Price} + \textit{Credit Margin}$$

to the following

$$\begin{aligned} \textit{Credit Requirement} = & -\min(\textit{CRR Auction Price}, \textit{Historical Expected Value}) \\ & + \textit{Credit Margin} \end{aligned}$$

With this enhancement, when historical market data suggest that the auction prices are undervalued, the CAISO should be able to establish the credit requirement based on the historical expected value of the CRR derived from actual historical market data. The CAISO proposes to implement this policy enhancement one year after the start-up of MRTU when seasonal market operation data becomes available.<sup>4</sup>

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<sup>4</sup> Due to the seasonal pattern of power flows CRR values may change significantly from one season to another. Therefore historical expected values and credit margins should be calculated based on seasonal historical data.

## 4.3 Assessment and Mitigation of Credit Risks as a Result of Lessons Learned from the PJM Default & Review of the NYISO and MISO Credit Policy Filings

### 4.3.1 Pre-Auction Credit Margin Requirement

The current CAISO Tariff specifies the credit requirement for participating in the CRR auction as the greater of \$500,000 or the sum of the absolute values of the bids.<sup>5</sup> The purpose of this requirement is to ensure that auction participants bidding for positively-priced CRRs have sufficient credit to cover the bid price and to ensure that auction participants bidding for negatively-valued CRRs have sufficient available credit (through Unsecured Credit and/or posted collateral) to take on such negatively valued CRRs. However, this requirement is not intended to provide coverage for losses due to the volatility of the underlying value of the rights. For example, if an auction participant only bids for zero-priced CRRs, the submitted bids would be zero, and the only credit support posted would be \$500,000, which may be insufficient to cover the default risk associated with these rights if these rights turn out to be negative. While the participant would be required to post collateral sufficient to cover the auction price and the credit margin subsequent to the auction, a market participant may be unable to do so.

Both NYISO and MISO have also recently recognized the default risks associated with negative, zero, and low-positive priced CRRs. For example, based on a study conducted by the NYISO, low-positive transmission rights run a disproportionately greater risk of reversing, thereby becoming negative and requiring the customer to make payments.<sup>6</sup> Both NYISO and MISO have recently filed enhancements to their credit policies by requiring minimum dollar-per-MW credit posting requirements for submitting bids in auctions. The minimum posting requirements address the risk associated with a market participant who obtains a significant number of negative, zero-priced, or low-positive transmission rights during an auction but is unable to satisfy the credit requirements for holding those rights following the close of the auction. It is the CAISO's understanding that both NYISO and MISO will be making further enhancements to their credit policies to ensure that holding requirements are also similarly adjusted.

The CAISO's credit policies do address this risk as part of the CRR holding requirements. That is, the CAISO requires the CRR Holder to post a Credit Margin in addition to any credit requirements derived from the auction price (and/or historical expected value, as proposed elsewhere in this paper for a Tariff amendment.) To date, the CAISO has not required auction participants establish credit coverage for the Credit Margin during the auction. Accordingly, there is a risk that an auction participant could win CRRs that have a credit holding requirement in excess of their available credit during the auction, and they would be unable to post additional collateral. The CAISO would like to explore with stakeholders whether to require auction participants to cover the Credit Margin, or a portion of it, as part of their credit requirements for participation in the auction. This would provide coverage commensurate with the risk of the CRRs, in

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<sup>5</sup> Specifically, Tariff Section 12.6.2 states that "Each Candidate CRR Holder that participates in a CRR Auction shall ensure that its Aggregate Credit Limit in excess of its Estimated Aggregate Liability is the greater of \$500,000 or the sum of the absolute values of all of its bids for CRRs submitted in the relevant CRR Auction."

<sup>6</sup> The NYISO study was conducted based on TCC auction data through 2006.

that more volatile CRRs would need higher coverage and less volatile rights would require lower coverage.

There are two aspects of the current policy that may, in some cases, already provide some excess collateral coverage that could be used to meet the subsequent holding requirement including the credit margin. These include the \$500,000 minimum credit required to participate in the auction, and the fact that a participant is unlikely to be the winning bidder for all CRRs that they bid on. However, these may not provide sufficient coverage in all cases to ensure that the market participant is able to meet the subsequent CRR holding requirement established by the CAISO after the close of the auction. While the CAISO does have the ability to “repossess” CRRs and resell them in a subsequent auction if a participant does not meet a collateral call, this is an imperfect solution, as prices of other CRRs may have been affected by the bids of the defaulting party.

As another refinement of this approach, CAISO could include only a portion of the credit margin in the credit adequacy check for each bid, by adjusting the Credit Margin by the probability that the bids will clear in the auction, which can be estimated by the ratio of cleared MW over bid-in MW in past auctions. The concern with this approach is that it can only be estimated using historical auction data, which may not reliably represent the market situation in the current year, especially during the first several years of the CRR market until the auction market matures--volumes bid into the auction and cleared in the auction may vary significantly from previous years. Further, the ratio of cleared MW over bid-in MW for the entire market is not necessarily indicative of the cleared versus bid-in results for a particular market participant. The benefit of this approach, including only a portion of the Credit Margin in the credit adequacy check applied to each bid, is that it is less onerous than the inclusion of the full Credit Margin. So, the cost of participating in the auction in terms of providing necessary credit support is reduced somewhat. Under either approach, any excess collateral coverage posted for auction participation in excess of holding requirements can be released to the Market Participants after the close of the auction. The CAISO welcomes stakeholder feedback on this issue.

### 4.3.2 Re-Filing the Full-Term Credit Coverage for Long-Term CRRs

The CAISO conducted a stakeholder process in summer 2007 and obtained the CAISO Board of Governors' approval for full-term credit coverage for LT-CRRs. The CAISO filed this proposal with FERC. FERC instead approved only a one year credit requirement for LT-CRRs finding that "multiplying by ten (or by the remaining number of years in the long-term CRR's term) the auction price of a one-year CRR does not accurately forecast the expected value of a long-term CRR for the duration of its term."<sup>7</sup> Based on this concern, FERC found it was "reasonable under the circumstances to choose lower barriers to entry over the risk of potentially burdensome over-collateralization. Nevertheless, we encourage the CAISO to develop an appropriate method for estimating the value of allocated long-term CRRs that is representative of the financial risk associated with the long-term CRR, and takes into account all years covered by the long-term CRR."<sup>8</sup> In light of the PJM default and the greater appreciation of the financial risks associated with CRRs that have negative and potentially negative values, and in light of the modification of the CRR Holding requirements discussed above, the CAISO believes that it is reasonable and appropriate to re-file a modified proposal for LT-CRR credit requirements.

The risk is apparent in case of a default involving a LT-CRR. According to the Tariff, the CAISO may choose to resell it in the subsequent auctions, but it is possible that this LT-CRR may not be liquidated at the auctions. In such case, the financial loss includes congestion revenue payments of the defaulting LT-CRR for not only the current year, but also all the years in the remaining term of the LT-CRR.

The FTR defaults at PJM involved a default by an initial market participant on its FTR portfolio, transfer of that portfolio to another market participant, where a lower credit coverage requirement was permitted in connection with the sale of the FTR portfolio. The loss from the default by the second market participant spanned multiple settlement periods.

To ensure adequate credit coverage for LT-CRRs, and to be consistent with that for ST-CRRs, the CAISO proposes to change the formula to determine the credit requirement for holding a LT-CRR from

$$\text{Credit Requirement} = -n * (1 \text{ year CRR Auction Price}) + \sqrt{n} * (1 \text{ year Credit Margin})$$

to

$$\text{Credit Requirement} = -n * \min(1 \text{ year CRR Auction Price}, 1 \text{ year Historical Expected Value}) + \sqrt{n} * (1 \text{ year Credit Margin})$$

where,  $n$  is the number of years remaining in the term of a LT-CRR.

<sup>7</sup> "Order Conditionally Accepting in Part and Rejecting in Part Tariff Revisions." 120 FERC ¶ 61,192 at P 45 (2007)

<sup>8</sup> *Id.*

With the use of both the auction price and the historical expected value of the CRR, which is based on actual market operations data, the proposed formula should improve the likelihood that the holder will have sufficient credit coverage for holding the LT-CRR and that the value of the CRR will be based on the best information available to the CAISO. Finally, the CAISO notes that since existing LT-CRRs were all nominated by the LSEs and obtained through the allocation process, they are mostly positively valued. This means that there would not be “onerous” credit requirements imposed on such LSE’s CRRs.

#### **4.3.3 Requirement for Corporate Parent Credit Backing of Affiliated Market Participants Aggregated Liability**

The CAISO often accepts a corporate guaranty from a corporate parent or other affiliate to cover the Estimated Aggregated Liability (EAL) of a Market Participant. To date, CAISO has permitted such a guarantor to identify specific and different maximum amounts of credit backing for its Affiliates based on the anticipated EAL of each such affiliate Market Participant. As an example, assume Affiliate A had an EAL of \$6 million and Affiliate B has an EAL of \$10 million. Today, the CAISO would permit the corporate parent to provide separate guarantees (if it qualified for unsecured credit) capping its liability to \$6 million for Affiliate A and \$10 million to Affiliate B. It may be prudent to reconsider this policy with the addition of CRRs to the CAISO market, and given PJM FTR market defaults, where an entity with multiple affiliates failed to provide adequate credit support for one affiliate, leading to defaults that affected all PJM market participants.

A measure that may in some instances reduce such potential exposure to CAISO market participants, would be to require a corporate parent to provide a guaranty that was not limited to a single affiliate if multiple affiliates participated in the CAISO market. In the above example, this would mean that CAISO would require that a single guarantee be established for a total of \$16 million which could then be used entirely to cover the default of a single affiliate, if necessary. This change may help reduce the default risk of thinly capitalized limited liability corporations participating in the CAISO markets and would help discourage the creation of such entities for purposes of taking on undo risk for purposes of shifting default risk onto other Market Participants, as many believe happened in the FTR defaults at PJM.

CAISO's credit systems require a single credit limit per Market Participant. Continuing with the above example, the credit limit for Affiliate A would be recorded in CAISO's credit system at \$6 million, and the credit limit for Affiliate B would be recorded at \$10 million. Calls for additional collateral would then be made if those Market Participant's liabilities reached those amounts. Assuming there was a single guaranty in place for \$16 million that named both Market Participants, the parties (CAISO, Market Participants and guarantor) could agree to reallocate unused capacity from the guaranty to the other Market Participant and CAISO would update the \$6 million and \$10 million limits in the CAISO credit system, or, if there was no additional unused capacity in the guaranty, the guarantor would need to increase the guaranty or post other collateral.

In the event of a payment default by either Affiliate A or Affiliate B, CAISO would have be able to pursue the guarantor for the amount of the default, up to the full amount

of the guaranty, even if the EAL estimate CAISO used to monitor credit adequacy prior to the default was inaccurate. Given the potential volatility and inherent difficulties in valuing CRRs for credit purposes, this could result in decreased risk of losses being allocated to other market participants.

The CAISO seeks stakeholder comments on the following issues:

- 1) Is there merit in this potential change?
- 2) Should this concept apply to other forms of collateral, or just guarantees?
- 3) Would this concept present regulatory difficulties for affected entities?

#### **4.3.4 Allow the CAISO to Increase Credit Requirements for CRRs Based on Extended Transmission Outages and other Circumstances that Could Shift or Increase CRR Liabilities**

As discussed above, another contributing factor to the PJM default was an extended transmission outage. Although, over time, the CAISO will be able to incorporate historical outage information in the calculations of historical expected value, that calculation is necessarily historical and may not adequately cover anticipated prospective obligations associated with extended transmission outages or, possibly, other events that could dramatically change the risk profile of a CRR. Accordingly, the CAISO proposes to clarify its tariff language to make it clear that the CAISO can impose additional credit requirements if it finds that neither the auction value nor historical expected values adequately cover the anticipated exposure of the CRR.

Specifically, the CAISO would propose changes to Section 12.1.5 of the currently effective tariff and Section 12.1.3 of the MRTU tariff that the category of liabilities that the "Market Participant is liable or reasonably anticipated by the CAISO to be liable for" will include prospective liabilities of CRR Holders as the result of extended transmission outages or other circumstances in the CAISO markets not reflected in other calculations of Estimated Aggregate Liability.