



Financial Risk Mitigation Senior Task Force

Credit & Collateral Best Practices

What is it?

The risk that the counterparty (or Market Participant) to a transaction could default on its obligations or deteriorate in creditworthiness before the financial settlement of a transaction.

How do you manage it?

Counterparty credit risk management is multi-dimensional and requires a combination of risk-management techniques from credit, market and operational risk disciplines.

Best practices suggest the importance of implementing a clear policy to manage and monitor counterparty risk and it should, at the very least, address the following items:

- Purpose & Scope
- Governance
- Roles and Responsibilities
- Market Participant Eligibility & Approval
- Risk Assessment
- Variable Position Limits based on risk assessment
- Variable Credit Limits based on risk assessment
- Credit Risk Measurement Methodology
- Collateral Management

PJM acting as a neutral, independent entity, operates a centralized, competitive wholesale electricity market for over 1,000 Members who participate in the generation, transmission, distribution, purchase and/or sale of electricity, ancillary services, and any other products and services provided under the PJM Tariff or Operating Agreement.

The purpose of the policy is to specify the practices to govern commodity credit risk and define roles and responsibilities for credit risk management. It is intended to be a roadmap for navigating credit risk management at PJM, as well as a reference document.

The policy is intended to provide a framework of the Company's key credit risk governance structure and processes. It is not intended to be a comprehensive manual of all of the Company's risk management processes, controls, and limits.

The policy is intended to minimize the risk of default associated with any and all Market Participants that transact in the PJM market.

- Expanded the scope of the Risk & Audit Committee of the Board of Managers to include governance of Risk Management matters.
- Established the Enterprise Risk Management Steering Committee
- Chief Risk Officer responsibilities include:
 - Developing and recommending changes to risk management policies and practices for risk management and measurement
 - Supplying the expertise to ensure that appropriate limits, policies and other measures are in place to mitigate risk
 - Determining eligibility to transact as a Market Participant in PJM
 - Maintaining the list of eligible Market Participants
 - Managing collateral demands
 - Monitoring and reporting on counterparty credit exposure
 - Periodically reporting; at least quarterly

Each Market Participant should be assessed using criteria that is reflective of their respective risk profiles. Each Market participant may have different financial or business risk profiles, and/or strategies that need to be taken into consideration. It is recommended that several enhancements are made to PJMs current risk assessment of Market Participants to meet industry standards.

- (1) Require audited financials for Market Participants
- (2) Implement best practices around Know-Your-Customer rules (KYC)
- (3) Incorporate knowledge of default history for Market Participants
- (4) Implement credit risk scoring models that incorporate various financial ratios and other factors such as, industry characteristics, financial risks, and the nature of the business

Reliability of Information

It is best practice to rely on audited financial statements when important decisions are made on the financial condition of a company. The preference is to utilize statements that have passed a rigorous examination by a qualified public accounting firm knowledgeable about the energy industry.

PJM will need to analyze financial statements of companies in order to form opinions about their financial well-being. Relying on audited financial statements as a tool will satisfy most questions about the reliability of data.

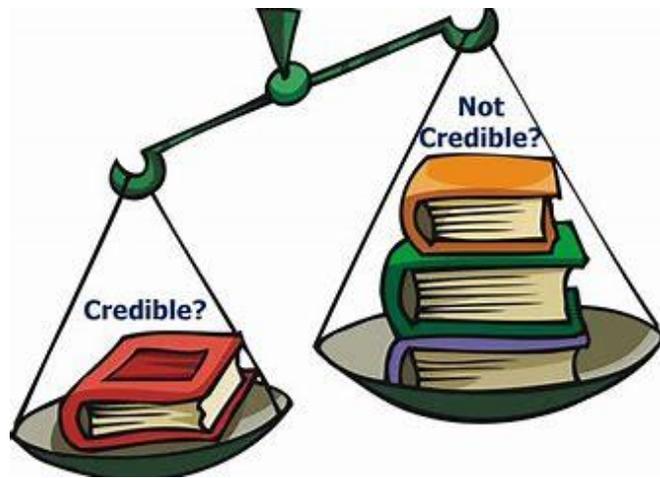
Recommendation:

Require audited financials from potential Market Participants.



Less Credible

Unaudited financial statements are generally used internally by companies and are considered less accurate than audited statements. While most of the information should contain the same information (cash flow statement, income statement, balance sheet) and are prepared by accountants, the major difference is credibility.



There is no external third party checking that GAAP rules are being followed and that there are good internal controls in place.

Recommendation:

- If a potential Market Participant does not have audited financials, PJM should be given the authority to restrict the Member from participating in certain markets (e.g. FTR).
- Actions should include requiring restricted collateral to be held in escrow or requesting additional collateral enhancements.

Know your customer, alternatively known as KYC, is the process of knowing/understanding potential customers (Market Participants) and their financial dealings by assessing their suitability, along with the potential risks of illegal intentions towards the business relationship. In the case of PJM, we are concerned with manipulative and/or fraudulent behavior.

Best practices employed by exchanges, energy companies, banks, and other service providers are:

- Establishing the identity of the customer and the customer's legitimate activities
- Additional information collected for potentially higher risk customers
- Ongoing review of customers; review against flagged lists (external or internal)



In implementing these best practices, PJM shall establish a 5 year look back and require the following:

- Market Participants, their affiliates, top 4-5 principals, and ultimate parent company to disclose **“Order to Show Cause” and/or enforcement action** by any of the regulatory bodies (FERC, SEC, CFTC, any exchange monitored by the NFA) related to market manipulation, whether initiated by self-reporting or otherwise, within 5 days of application and/or order **and** during annual certification.
- Market participants shall disclose any energy market criminal or civil litigation within the last 5 years that resulted in criminal penalties and/or enforcement actions.
- To understand the risk associated with equity/hedge funds and/or other private LLCs, we need the ability to understand certain agreements or formation documents so that we can assess:
 - The risk associated with investors and how they may aggregate with other funds
 - The risk associated with the top 4-5 principals

As part of KYC, PJM will need to enhance its processes by using **non-public and public information** to know the current default status and history of the entity, affiliates, and/or principals of the entity as well as any financial issues.

Where will we look?

- Within PJM
- Default in another ISO/RTO, energy market, exchange, etc.
- Bankruptcy filings, litigation or evidence of fraud and manipulation
- Officer Certifications and self-disclosures

What will PJM do with this information?

PJM understands that the action of an individual or group of individuals may not be a reflection upon the company or group of companies. Upon disclosure of a formal investigation being opened, PJM will reach out to the Market Participant to understand:

- Issue
- Actions taken by company
- Compliance efforts to resolve/close investigation

If FERC enforcement occurs within 5 year look back, we will look to understand if the principles/officers/traders that were found liable are still in place or can influence company behavior. If not, then we will consider timelines, and other factors.

In common with best practices, PJM requires the ability to perform any or all of the following:

- Require explanation from Market Participant
- Request evidence of corrective action (e.g., discontinued behavior, additional controls)
- Require additional restricted collateral
- Additional monitoring and verification
- Limit, suspend or ban a Market Participant or individuals from PJM market based on reasonable grounds of insecurity gathered from confidential, discretionary and/or public information (e.g., named person in a settled case, prohibition from trading)

Market Participants to inform PJM of Material Adverse Change (MAC), as described in the Tariff, Attachment Q. However, the tariff limits PJM's ability to act to only with regard to limiting or reducing the amount of unsecured credit.

Concerns:

It does not tell PJM how to act with regard to participating in markets where unsecured credit is not allowed (e.g., FTRs).



Recommendation:

- PJM should have the authority to act upon reasonable grounds for insecurity regarding the performance of any material obligation or adverse material change to include credit rating downgrades, unexplained write-offs.
- Clarify the meaning of material adverse change within Attachment Q.
- Actions should include limiting participation in market by term and tenure, suspending trading activity, or banning altogether.

How will this determination be made?

It depends...

Who will make the determination?

Recommendation of Chief Risk Officer to Enterprise Risk Management Steering Committee

Can the decision be challenged?

Yes. PJM's Dispute Resolution Procedures (OA) or FERC filing.

Another best practice employed in the energy industry is the establishment of **position or term/tenure limits**. These can be predetermined volumetric levels or terms that limit the amount of risk or the number of transactions a trader, or any affiliated group of traders may own. The limits are put in place to (1) avoid allowing anyone to exert undue control over a market, or (2) to manipulate prices to their benefit while hurting others or (3) to reduce the risk exposure that could arise from a particular market participant. **They are set to reduce the loss that could arise if the Market Participant were to default on its obligations.**

The Tariff, Attachment Q is silent on PJM's ability to restrict access to the market as long as certain credit and/or collateral requirements are met.

Recommendation:

In order to effectuate risk management for the markets, PJM requires the discretion to limit the amount of risk in the market based on not only the financial health of a market participant but also the term and tenor of the positions that the market participant wants to take on.

Considerations:

- Not a one-size-fits-all definition
- Risk profile of the Market Participant (e.g., how long has the company been in business?)
- Strategy of the Market Participant

Any position limitations may be changed at PJM's discretion on a case by case basis due to a number of factors.

Example limitations:

- 1) BOPP only; 1 quarter out – Market Participants who post restricted collateral, who are either new or new to the PJM market, have a credit score equivalent between BB- and BB+ and/or don't have audited financials.
- 2) Annual Market – Market Participants who have been approved, have a credit score equivalent of BBB- or above, who have not defaulted.
- 3) Long Term Market – Market Participants who have been approved, have a credit score equivalent of BBB- or above, who have not defaulted.

The current Tariff, Attachment Q does not determine PJM's ability to suspend a Market Participant under various circumstances, therefore allowing additional risk exposure to accumulate.

Recommendation:

- Provide PJM with specific authority to take action in certain situations to protect PJM members from a potential default.
- Based upon reasonable grounds (e.g., non-payment of collateral, non-compliance with officer's annual certifications), PJM should have the discretion to suspend a Market Participant's ability to transact in certain markets to protect the markets against financial risks and bad actors.

Terms of Suspension should be determined on a case by case basis to protect the PJM market.

Circumstances:

- Market Participant defaults today, PJM switches etool access to “read only,” in essence suspending/banning ability to transact in the forward market.
- PJM uses its discretion to determine what actions are required, if any (payment of additional collateral, restricted collateral) to protect the PJM members from a potential default.

It is best practice to prevent a Market Participant or (potential) bad actor from transacting in commodity markets. A bad actor is a company or someone that you may not want to do business with for various reasons, including among other things, been convicted of, or is subject to judicial or regulatory sanctions for certain violations of the law.

The current Tariff, Attachment Q does not determine PJM's ability to ban a Market Participant or a bad actor; therefore allowing additional risk exposure to accumulate. PJM can terminate/ban the Member (and ability to participate in the market if there are 2 payment defaults or does not adhere to PJM's credit worthiness standards and credit policies three times within 12 months).

Recommendation:

- Provide PJM with specific authority to take action in various situations to protect the PJM Members from a potential default in the case of a bad actor.
- Based upon reasonable grounds (e.g., named individual sanctions, history of manipulation), PJM should have discretion to ban a Market Participant or any of their traders or principals from the PJM market, to protect the markets against financial risks and bad actors.
- The length of the ban should be determined on a case by case basis.

It is industry best practice to document Events of Default as a predefined circumstance that allows a company to protect itself by having the flexibility to demand full payment of an outstanding balance or have the ability to seize any collateral that has been pledged.



Common events of default:

- Non-payment of invoices
- Non payment of collateral or margin
- Credit support default
- Covenant and/or agreement breach
- Material representation inaccuracy or warranty breach
- Cross-Default
- Bankruptcy/Insolvency
- Merger without assumption
- Default under other certain transactions

I. Enhance Definition(s) of Event of Default within Credit Policy

- i. Financial Default – the failure by the market participant to make, when due, any payment, including but not limited to a margin request, final settlement payment or other collateral call if not remedied within 1 business day for requests made before 1:00 pm EPT or within two business days if request made after 1:01 pm EPT.
- ii. Credit Support Default
 - a. The failure by the market participant or any credit support provider of such participant to comply with or perform any agreement or obligation to be complied with or performed by it in accordance with the PJM Credit Policy.
 - b. A false representation or misrepresentation, intentional or unintentional, made by the market participant or in any credit support document that proves to have been incorrect or misleading in any material respect.
- iii. Breach of Credit Policy – the failure by the market participant to comply with or perform any agreement or obligation (other than to make a payment) to be complied with or performed by the party in accordance with PJM requirements if such a failure is not remedied within 1 day after notice

- iv. Bankruptcy, insolvency or the inability of a market participant to meet its financial obligation as they become due.
- v. Merger without assumption – E.g., When the market participant or any credit support provider of such participant consolidates or amalgamates with, or merges with or into, or transfers all or substantially all its assets to, or reorganizes, reincorporates or reconstitutes into or as, another entity and, at the time of such consolidation:
 - a. The resulting, surviving or transferee entity fails to assume all the obligations of such party or such credit support provider to which it or its predecessor was a party; or
 - b. The benefits of any credit support document, fail to extend to the performance by such resulting, surviving or transferee entity of its obligations.
- vi. Default under other certain transactions – E.g. When the market participant has a financial default in a bilateral FTR market with another counterparty, in a ISO/RTO outside of PJM, in another energy market, or commodity exchange.

Note: the above 3 situations are typically not capable of being remedied and should result in immediate default, as soon as the facts have been clearly established

Industry best practice is to use a combination of risk management tools to understand the financial or business risk associated with an entity. Metrics reviewed could include:

- Mark-to-Market / Mark-to-Auction Exposure
- Notional Exposure
- Outstanding Receivables and Payables
- Credit Ratings: Moody's, S&P, Fitch, internal rating
- Credit default swaps
- Concentration of risk exposures
- Potential Future Exposure (PFE)
- Other considerations include current events/news related to industry, market volatility, peer group analysis and/or specific Market Participants

Since 2008, more companies have been using multidimensional scorecards and internal ratings based on both qualitative and quantitative inputs, instead of just relying on external ratings from providers like S&P and Moody's.

PJM will implement internal credit risk scoring methodologies to use as a tool in determining a credit risk score for each Market Participant.

Best practices in the financial markets have policies that determine risk tiers and limits. PJM’s Tariff does not currently group counterparties according to stability nor establish guidelines for establishing limits.

Recommendation:

PJM establishes a credit risk score which will then be weighted according to industry sector and type of company with suggested limits.

Tier	Risk Ratings Considerations	Limits	Threshold for Collateral Actions
1	<input type="checkbox"/> Credit Ratings of AA- or Higher <input type="checkbox"/> Clean Default History and KYC <input type="checkbox"/> Credit Risk Score below 3.0	<ul style="list-style-type: none"> ● MtM Limit ● Concentration Limit 	Higher
2	<input type="checkbox"/> Credit Ratings of BBB+ to A+ <input type="checkbox"/> Clean Default History and KYC <input type="checkbox"/> Credit Risk Score between 3.0 and 3.5	<ul style="list-style-type: none"> ● MtM Limit ● Concentration Limit 	Lower than for Tier 1
3	<input type="checkbox"/> Credit Ratings of BBB- or Higher <input type="checkbox"/> Clean Default History and KYC <input type="checkbox"/> Credit Risk Score between 3.5 and 4.5	<ul style="list-style-type: none"> ● MtM Limit ● Concentration Limit ● Position Limit 	Lower than for Tier 2
4	<input type="checkbox"/> Credit Ratings below BBB- <input type="checkbox"/> Clean Default History and KYC <input type="checkbox"/> Credit Risk Score above 4.5 <input type="checkbox"/> New Company	<ul style="list-style-type: none"> ● MtM Limit ● Concentration Limit ● Position Limit 	Lower than for Tier 3

Industry best practices suggest that based on reasonable grounds for insecurity, you can request additional restricted collateral to cover potential future exposure.

Considerations:

- Not one size fits all
- Depends on the circumstances

Recommendation:

- PJM should have the authority to act upon reasonable grounds for insecurity regarding the performance of any material obligation or adverse material change to include credit rating downgrades, unexplained write-offs.
- Actions should include requiring restricted collateral to be held in escrow or additional collateral.

Industry best practice is to have ongoing monitoring of the financial health of counterparties (Market Participants). In today's environment, credit managers/analysts need agile and transparent tools to derive counterparty ratings and perform peer group analysis.

There are systems and applications available today that would allow PJM to create and maintain scoring models; back test scoring models, simulate potential future exposure, and manage collateral.

FERC Order 741 requires that PJM obtain risk management policies and processes from each participant. The current policy states that this is certified annually via the Market participant for non-hedging FTR participants and on a random selection basis for others.

Recommendation:

PJM conducts verification of the Market Participants risk management policies conducted using specific requirements that are uniform in nature. The requirements would align with industry best practices.

Affiliate shall mean any two or more individuals, corporations, partnerships, firms, joint ventures, associations, joint stock companies, trusts, unincorporated organizations or entities, one of which directly or indirectly controls the other or that are both under common control. “Control” shall mean the possession, directly or indirectly, of the power to direct the management or policies of a person or an entity. Ownership of publicly-traded equity securities of another entity shall not result in control or affiliation for purposes of the Tariff or Operating Agreement if the securities are held as an investment, the holder owns (in its name or via intermediaries) less than 10 percent of the outstanding securities of the entity, the holder does not have representation on the entity’s board of directors (or equivalent managing entity) or vice versa, and the holder does not in fact exercise influence over day-to-day management decisions. Unless the contrary is demonstrated to the satisfaction of the Members Committee, control shall be presumed to arise from the ownership of or the power to vote, directly or indirectly, ten percent or more of the voting securities of such entity.



Appendix A – Proposed New & Enhanced Definitions (Cont.)

Adequate Assurance of Performance shall mean sufficient security in the form, amount and for the term reasonably acceptable to PJM, but not limited to, cash, a standby irrevocable letter of credit, and such other readily liquid assets with appropriate “haircuts” that PJM may find acceptable from time to time. In the event that a Participant fails to provide the required Adequate Assurance of Performance in the timeframe required such failure shall be an additional event of default.

Credit Risk Score shall mean a composite numerical score determined by PJMSettlement using quantitative and qualitative metrics to estimate various predictors of a credit event happening to Market Participant.

Haircut shall mean a percentage reduction applied to the value of a Market Participant’s or Transmission Customer’s collateral, based on their inherent risk profile, for the purpose of calculating the margin or Collateral Requirement for the Market Participant or Transmission Customer to account for any adverse market value change if the portfolio must be sold or liquidated.



Appendix A – Proposed New & Enhanced Definitions (Cont.)

Market Participant: Market Participant shall mean an entity that generates, transmits, distributes, purchases, or sells electricity, ancillary services, or any other product or service provided under the PJM Tariff or Operating Agreement within, into, out of, or through the PJM Region, but it shall not include an Authorized Government Agency that consumes energy for its own use but does not purchase or sell energy at wholesale.

Principal: Principal shall mean an individual with the following roles and responsibilities: (i) sole proprietor of a sole proprietorship; (ii) general partner of a partnership; (iii) manager, managing member of a member vested with the management authority for a limited liability company or limited liability partnership; (iv) any person or entity that (1) is the direct owner of 10% or more of any class of an organization's equity securities or (2) has directly contributed 10% or more of an organization's capital; (v) a director, president, chief executive officer, vice president, secretary, treasurer, operating officer, risk officer, general counsel, compliance officer, financial officer, general manager, comptroller or senior officer (or equivalent positions) of a corporation or other organization, or individuals to whom they have delegated authority; and (vi) any person or entity that has the power to exercise supervisory authority or influence over an organization's trading activities in PJM.

Appendix B – Scenarios & Actions related to Default

Topic 1 – Default Scenarios

#	Scenario	Proposed Action	Comments
1	A MP defaults in the MISO market today	Suspend that MP (exists today)	MP needs to cure default, and MISO can require additional, restricted collateral (see #3)
2	A MP defaults in MISO market today, but cures it within one week	MP can re-enter the MISO market	No additional collateral requirements
3	A MP defaults in MISO market today, and cures it after one week	MP can re-enter the MISO market, but will be subject to additional collateral requirements	Up to either 2x the default value or the defaulter’s highest exposure over the last 12 months (will be restricted for at least 2 years)
4	A MP defaults 4 years ago for \$999.99 and cures it	MP can re-enter the MISO market	Any default less than \$1000 and cured does not require additional restricted collateral

7 ***Bold:** Indicates change from August 14th FTRCCTT



Appendix B – Scenarios & Actions related to Default (Cont.)

Topic 1 – Default Scenarios

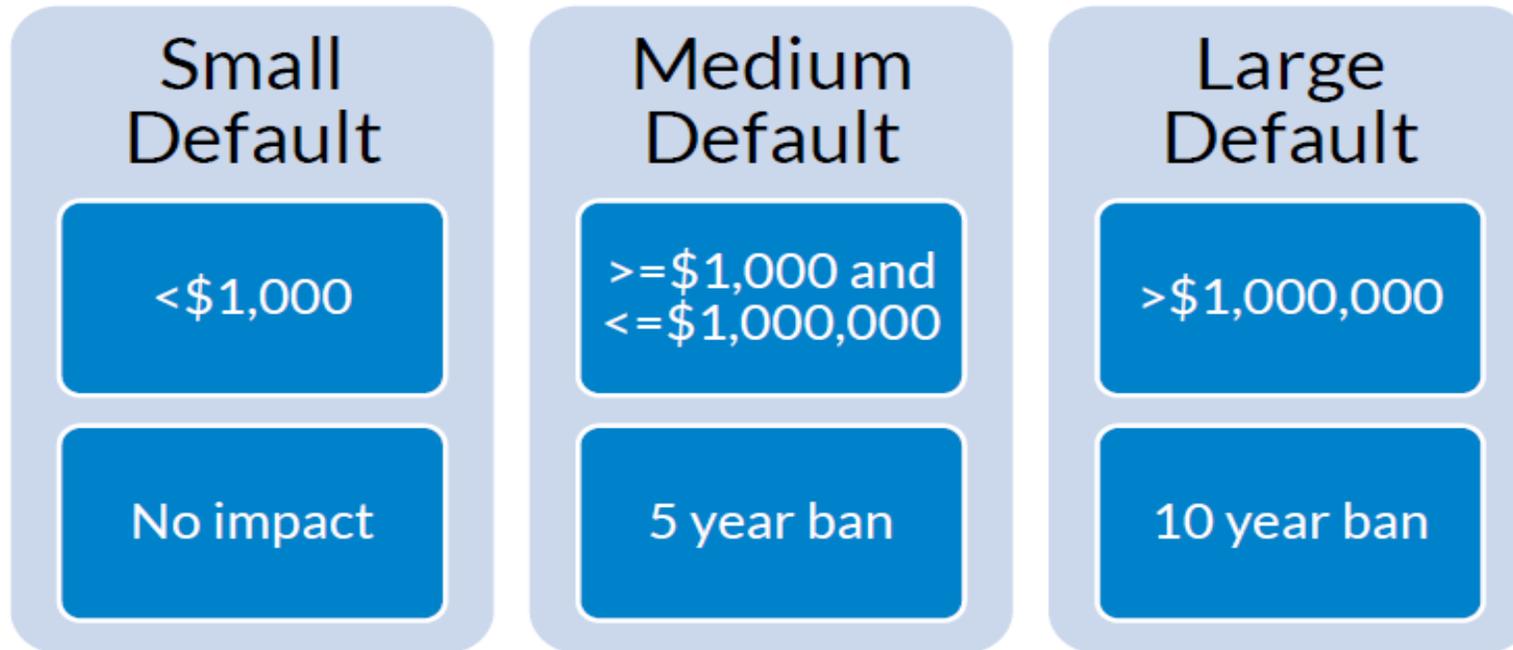
#	Scenario	Proposed Action	Comments
5	A MP who defaulted in MISO and tries to reenter the market under a different name with similar company characteristics (NYISO example)	MISO would prevent that MP from entering the MISO market until default cured	MISO would consider the affiliates of the defaulted MP.
6	A new MP who has defaulted in another wholesale market	MISO would prevent that MP from entering the MISO market	The duration of this proposed action depends on the size and timing of the default
7	A MISO MP or an affiliate of a MISO MP defaults in another energy market	MISO may require additional collateral from the MP in MISO markets (depending on the nature of the affiliate relationship)	Up to either 2x the default value or the defaulter's highest exposure over the last 12 months (will be restricted for at least 2 years)
8	A MP or an affiliate of a MISO MP defaults in NYMEX or some other non-wholesale energy market	Treat similar to scenario #7	

8 ***Bold:** Indicates change from August 14th FTRCCTT



Non-MISO Market Uncured Default Guidelines

- Guidelines applicable for non-MISO defaults (scenario 5 and 6)



Applies to companies, affiliates, and Principals



Appendix B – Scenarios & Actions related to Default (Cont.)

Topic 1 – Default Scenarios Cont.

#	Scenario	Proposed Action	Comments
9	A new MP or principal involved in a non-financial default applies as a new MP in MISO market	No specific ban to prevent approval, but would be considered by MISO and may require explanation	Evaluate this on a case-by-case basis
10	MISO later determines false information provided by a MP	MISO can default that MP	
11	A MP applicant has a history of bankruptcy	MISO may require additional restricted collateral	Evaluate this on a case-by-case basis
12	A MP applicant includes principals previously involved in a default	MISO may require additional restricted collateral and/or reject application	Further discussed in hypothetical example

10

***Bold:** Indicates change from August 14th FTRCCTT



Scenario 12 cont. – Hypothetical

This hypothetical example is an exercise in ‘line drawing’

- MISO MP ACME Inc. defaults in MISO market
 - Bob, Jim, Mary, Bill, and Susie were all principals at ACME around the time of the default
 - Bob left the company prior to the default occurring
 - Jim joined the company immediately before the default occurred
 - Mary, Susie, and Bill have been at ACME for a long time

Scenario 12 cont. – Hypothetical

Principal	Proposed Action for MISO	What's Next?	Comments
Bob (left the company)	No action	Bob joins another MISO MP as an officer	If someone leaves the defaulting company 6 or more months prior to the default, MISO will not increase restricted collateral at another MISO MP
Jim (joined the company)	No action	Jim joins another MISO MP as an officer	If someone comes to the defaulting company 3 or less months prior to the default MISO will not increase restricted collateral at another MISO MP
Mary	MP suspended until default cured (See #1-4)	Mary applies for and attains a back office position for an alternate MISO MP	MISO will not require additional restricted collateral unless compelling evidence to the contrary
Susie	MP suspended until default cured (See #1-4)	Susie is listed as a principal for a new MP	MISO may require additional restricted collateral and/or reject application
Bill	MP suspended until default cured (See #1-4)	Bill is hired as an officer for a different existing MISO MP	The MP will need to report this information during the annual review process; MISO may require additional restricted collateral

Topic 2 – Manipulation Scenarios

#	Scenario	Proposed Action	Comments
1	A MP is named in a Order to Show Cause <ul style="list-style-type: none"> Not considering postings prior to Tariff effective date for existing MP's 	May include: <ul style="list-style-type: none"> Require explanation from the MP Request discontinuation of behavior Additional restricted collateral Additional monitoring and verification Suspend or ban an MP or individuals 	MISO action determined on case by case basis to protect MISO market
2	MP includes principal previously named in FERC Order to Show Cause for manipulation	May include: <ul style="list-style-type: none"> Additional restricted collateral Additional monitoring and verification Suspend or ban an MP or individuals 	MISO action determined on case by case basis to protect MISO market

***Bold:** Indicates change from August 14th FTRCCTT

18 Recap: Manipulation, for purposes of this topic, is limited to situations where a company and/or individuals were explicitly named in a case involving certain manipulative behavior

