

The Market Monitoring and Mitigation Measures of this Module D include Part II, the Independent Market Monitoring Plan (the “Plan”), and Part III, the Market Mitigation Measures. The Plan is intended to provide for the independent, impartial and effective monitoring and reporting on the Markets and Services as a whole. The Market Mitigation Measures are intended to provide the means for the Transmission Provider to mitigate the market effects of any conduct that would distort competitive outcomes in the Markets and Services administered by the Transmission Provider. In the event of any inconsistency between the provisions set forth in this Module D and the provisions set forth elsewhere in the Tariff, the provisions set forth in this Module D shall control.

An Independent Market Monitor (“IMM”) shall be responsible for the implementation of the Plan. The IMM’s mission shall be to pursue the purposes and objectives of the Plan, including the protection of both consumers and Market Participants by the identification and reporting of market design flaws and market power abuses, in a manner consistent with the Tariff. The IMM shall perform its duties in accordance with this Module D and other applicable provisions of the Tariff.

This Plan is intended to provide for the independent, impartial and effective monitoring of and reporting on: (1) the competitive performance and efficiency of the Transmission Provider's Markets and Services, including identification of opportunities to promote operational efficiency improvements; (2) the conduct of Market Participants, Transmission Owners, Local Balancing Authorities, and the Transmission Provider, including but not limited, to any exercise of or attempt to exercise, market power in any Market or to inefficiently reduce the quantity or quality of Transmission Service in the region; (3) the operation, use, and congestion of the Transmission System as such system affects competitive conditions in the region; (4) the operation of the MISO Balancing Authority Area and Local Balancing Authority Area and actions taken by the MISO Balancing Authority and the Local Balancing Authorities that unduly discriminate among the Market Participants or affect the competitiveness or economic efficiency of the Markets and Services; and (5) adequacy and effectiveness of any proposed or actual Tariff provision, market rule, procedure, or action that affects the competitiveness or economic efficiency of the Markets and Services.

The Plan will be implemented by the IMM. As set forth in this Module D, the IMM shall report its findings to the FERC, state regulatory commissions, and the Transmission Provider and provide annual reports and other reports to the Transmission Provider's Board of Directors, FERC, state regulatory commissions, and the Transmission Provider that will include relevant market data and the results of analyses of that data undertaken by the IMM. In addition, the IMM will conduct preliminary investigations of Market Participants' conduct as specified in this Plan, the results of which will be reported to Interested Government Agencies when further

action may be warranted. The IMM will also respond to requests from FERC or state regulatory commissions for additional analysis or data the IMM has in its possession, subject to its obligation to protect the confidentiality of the data, as specified in this Module D. The IMM also will respond to complaints by customers of the Transmission Provider and to requests for public data that are not readily available.

The Plan is intended to protect and foster competition, while minimizing interference with open and competitive markets. The IMM will recognize that conduct that might under some circumstances suggest an attempt to exercise market power is, under other circumstances, pro-competitive and efficient. In making this distinction, the IMM will generally focus on an analysis of the identified conduct and associated market impacts, rather than seeking to determine the intent of the participant (e.g., conducting profitability analyses that would require comprehensive information on all the physical and financial positions of a participant). The IMM will work to ensure that all monitoring and reporting activities are implemented fairly and consistently in accordance with the Plan.

The IMM will monitor the Markets and Services provided by the Transmission Provider, including the imbalance energy market, any congestion management market or system, any Ancillary Services market, any market for the purchase or sale of transmission rights, Planning Resource Auction, and any other market administered, coordinated or facilitated by the Transmission Provider. The IMM will not monitor bilateral Energy, Ancillary Services or Capacity markets, or private transmission rights not administered, coordinated or facilitated by the Transmission Provider, except to periodically assess the effect of these markets on the Markets and Services administered by the Transmission Provider, or the effects of the Transmission Provider Markets and Services on these markets.

The Transmission Provider, the IMM, the Local Balancing Authorities, and any person or entity participating in any of the Markets and Services or that takes service under or is a party to any tariff or agreements listed on Attachment P to the Tariff, shall be subject to the terms, conditions and obligations of this Plan.

The IMM shall report to the Transmission Provider's Board of Directors. Any management representatives of the Transmission Provider that are members of the Board of Directors shall be excluded from this oversight function. The IMM shall be granted complete independence to perform those activities necessary to provide impartial and effective market monitoring within the scope of the Plan. No person, party or agent, including the Transmission Provider, state regulatory commissions, or any other administrative oversight group responsible for the administration of the IMM activities, shall be granted authority to screen, alter, delete, or delay IMM investigations or the preparation of findings, conclusions, and recommendations developed by the IMM that fall within the scope of market monitoring responsibilities contained in the Plan.

The Transmission Provider's Board of Directors shall appoint a Market Monitoring Liaison Officer to carry out the functions described in this Section 51.

- a. The Market Monitoring Liaison Officer shall:
 - i. Be responsible for administrative oversight of the contractual agreement with the IMM (Attachment S-1 of the Tariff);
 - ii. Support efforts of the IMM to collect necessary data and information from the Transmission Provider;
 - iii. Facilitate the provision of comments from the Transmission Provider as appropriate on issues investigated or analyzed by the IMM related to the factual accuracy of the IMM's reports;
- b. The Market Monitoring Liaison Officer shall not:
 - i. Have authority to impose penalty charges;
 - ii. Screen, alter, delete, or delay IMM investigations or the preparation of findings, conclusions, and recommendations developed by the IMM; or
 - iii. Share or discuss confidential data, information, or analysis related to any of the Markets and Services.

The Transmission Provider shall retain a person or persons, consulting firm or other entity to be known as the Independent Market Monitor that shall report to the Transmission Provider's Board of Directors. The IMM shall have experience and expertise appropriate to the analysis of competitive conditions in markets for Energy, Ancillary Services, and transmission rights, and to such other responsibilities as are assigned to the IMM under this Plan. The IMM shall interface with the Market Monitoring Liaison Officer.

The IMM, including each member, employee, or subcontractor of the IMM, shall comply at all times with the conflicts of interest and ethics policies set forth in this Section, and shall certify such compliance to the Market Monitoring Liaison Officer upon request.

The IMM and its employees:

- a. must have no material affiliation with any Market Participant or affiliate.
- b. must not serve as an officer, employee, or partner of a Market Participant;
- c. must have no material financial interest in any Market Participant or affiliate except for mutual funds and non-directed investments;
- d. must not engage in any market transactions other than the performance of the duties of the IMM under the Tariff;
- e. must not be compensated, other than by the Transmission Provider, for any expert witness testimony or other commercial services provided on behalf of the Transmission Provider or any other party, in connection with any legal or regulatory proceeding or commercial transaction relating directly to the Transmission Provider or to its markets;
- f. may not accept anything of value from a Market Participant in excess of a *de minimis* amount;
- g. must advise the Market Monitoring Liaison Officer in the event the IMM or any of its employees seek employment with a Market Participant, and must disqualify themselves from participating in any matter that would have an effect on the financial interest of the Market Participant,

- h. shall conform, as applicable, to the standards of conduct and other policies for independent contractors performing services for the Transmission Provider that may be adopted from time to time by the Board of Directors of the Transmission Provider.

- a. The IMM shall:
 - i. Evaluate existing and proposed market rules, Tariff provisions and market design elements and recommend proposed rule and Tariff changes to the Transmission Provider, the FERC's Office of Energy Market Regulation staff and to other interested entities, such as affected state regulatory commissions and Market Participants, provided that: (i) the IMM shall not effectuate its proposed market design itself, and (ii) the IMM shall limit distribution of its identifications and recommendations to the Transmission Provider and to FERC staff in the event the IMM believes broader dissemination could lead to exploitation, with an explanation of why further dissemination should be avoided at that time;
 - ii. Review and report on the performance of the Markets to the Transmission Provider, FERC, and other interested entities, such as affected state regulatory commissions and Market Participants, on at least a quarterly basis and submit a more comprehensive annual state of the market report as set forth in Section 57.1 of the Tariff;
 - iii. Identify, and notify the FERC Office of Enforcement, Office of Energy Markets and Reliability, the Commission General Counsel's Office, or other successor organization(s), of instances in which a Market Participant's behavior, or that of the Transmission Provider, may require investigation, including suspected violations of FERC-approved orders, rules and regulations, suspected market manipulations, and inappropriate dispatch that creates substantial concerns regarding unnecessary market inefficiencies.

- iv. Assist in the development of this Plan, including the screens and indices described in Section 55 of the Tariff;
 - v. Recommend to the Transmission Provider modifications to market rules or tariffs to improve the compatibility of, and the efficiency of trading between, the Transmission Provider and adjacent RTOs or Balancing Authorities; and
 - vi. Have such other duties and responsibilities as specified in this Plan, as it may be amended from time to time.
- b. On a quarterly basis, the IMM shall provide to the Board, the Commission and other interested parties, such as state commissions, a thorough review of the Transmission Provider's use of developed and installed mitigation software that is used prospectively, as the Commission defines the term. The IMM's review should identify any instances where the Transmission Provider may have misapplied mitigation methods or where the Transmission Provider's management may have overridden procedures embedded in the mitigation software used in real time market operation and recommend improvements in software mitigation and practice. In order for the IMM to make such a report, the Transmission Provider must maintain and provide sufficient detailed records and logs and make them available to the IMM.
- c. The IMM may, at any time, bring any matter to the attention of the Transmission Provider, Interested Government Agencies, or appropriate federal or state antitrust enforcement agencies as the IMM may deem necessary or appropriate for achieving the purposes, objectives and effective implementation of this Plan.
- d. The IMM shall not have the authority to impose penalty charges.

The IMM will achieve the purposes and objectives of this Plan through review and analysis of conditions, functions or actions affecting the competitiveness, economic efficiency and proper operation of the Markets and Services, including but not limited to, the following to the extent each may be deemed relevant to the purposes and objectives of this Plan by the IMM:

- a. The schedules and Offers submitted for and actual dispatch of Generation Resources, Intermittent Resources, Dispatchable Intermittent Resources, Demand Resources, BTMG, Demand Response Resource – Type I, Demand Response Resource – Type II, Distributed Energy Aggregated Resource, and Electric Storage Resource, in or affecting any of the Markets and Services.
- b. Conduct affecting the Planning Resource Auction, including, but not limited to, economic withholding of ZRC Offers and/or physical withholding of ZRC Offers into the PRA;
- c. The provision of Transmission Services and rights by the Transmission Provider, including but not limited to estimating and posting of Available Transfer Capability (“ATC”), administration of the Tariff, the operation and maintenance of the Transmission System, the auctions and other markets for transmission rights, and the reservation and scheduling of Transmission Service;
- d. Other information relating to collusive or other anticompetitive or inefficient behavior in or affecting any of the Markets and Services;
- e. Competitive or other market impacts of tariffs and agreements, or other rules, standards or procedures, or any other Transmission Provider or Market Participant actions governing or affecting any of the Markets and Services;

- f. The nature and extent, causes of, and costs of and charges for transmission congestion in the Transmission Provider Region or, to the extent practicable, transmission congestion on any other system that affects any of the Markets and Services;
- g. The need for and efficacy of appropriate penalty charges or other corrective actions to be submitted to and approved by FERC to address: a) competitive problems, b) violations or failures to comply with any tariff or services agreement that have material effects on the Markets and Services, or c) market flaws;
- h. The conduct of the MISO Balancing Authority, Local Balancing Authorities or Electric Distribution Companies, including a) affiliate favoritism or preference, b) operating in an unduly discriminatory manner, or c) anti-competitive behavior that could result in harmful market impacts to Transmission Provider customers; and;
- i. To the extent practicable, conditions or events outside the MISO Balancing Authority Area affecting the supply and demand for, and the quantity and price of, products or services sold or to be sold in any of the markets administered, coordinated, or facilitated by the Transmission Provider.

In order to prevent and/or discern the exercise of market power by Electric Storage Resources, Distributed Energy Aggregated Resources and certain Generation Resources, the IMM shall audit Generator Forced Outages, Generator Planned Outages, and Generator deratings; changes in physical offer parameters which reduce resource availability including, but not limited to, changes in Ramp Rates, Hourly Emergency Minimum Limits, Hourly Economic Minimum Limits, Hourly Economic Maximum Limits, Forecast Maximum Limits, and Hourly Emergency Maximum Limits, as well as changes to time-based Offer parameters, including, but not limited to, changes to Start Up Times, Minimum Run Times, and Minimum Down Times, Planning Resource designations; and other changes in offer parameters that the IMM reasonably believes may have the potential to reduce the available supply and raise the prices for Energy, Ancillary Services or Capacity. The IMM may request data during an audit from Market Participants or other entities as provided in Section 61.1 of the Tariff. Any such conduct shall be subject to the mitigation measures and reporting requirements set forth below in this Module D of the Tariff. The thresholds to be employed in monitoring for physical withholding are provided in Section 64.1.1.

The IMM may consult legal counsel for advice on antitrust, regulatory or other legal issues
pertinent to this Plan.

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53.3
Protocols for Referrals to the Commission
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- a. The IMM shall refer suspected Market Violations to the Commission in accordance with the “Protocols on Market Monitoring Unit referrals to the Commission of suspected violations,” 18 C.F.R. § 35.28(g)(3)(iv), or a successor document. In this Section, the term “Market Violation” shall be as defined at 18 C.F.R. § 35.28(b)(8).
- b. Conduct of the Local Balancing Authority Area Operators identified in Section 53.1.h will be referred to the Commission when it has a substantial effect on the market outcomes, defined as an effect of more than \$10 per MWh on LMP prices or results in equitable distribution of costs for a day of more than \$10 per MWh within a Local Balancing Authority Area or more than \$10 per MW/hour on MCP Prices. The IMM will refer all instances of affiliate favoritism or discriminatory Local Balancing Authority Areas operations to the Commission using procedures as provided in Section 53.3.1a of the Tariff.

IMM shall refer perceived market design flaws and recommended Tariff changes in accordance with the “Protocols on Market Monitoring Unit Referrals to the Commission of Perceived Market Design Flaws and Recommended Tariff Changes,” 18 C.F.R. § 35.28(g)(3)(v), or a successor document.

For purposes of carrying out its responsibilities under this Plan, the IMM shall have access to data or other information gathered or generated by the Transmission Provider in the course of its operations and shall have access to the resources and personnel of the Transmission Provider to enable the IMM to carry out its functions. This data and information shall include, but not be limited to:

- a. Hourly schedules, Offers, and actual output for the Generation Resources, Demand Response Resource - Type I, Demand Response Resource - Type II, Distributed Energy Aggregated Resources and Electric Storage Resource within the Transmission Provider Region (including designated Network Resources outside the Transmission Provider Region) and external Imports to and Exports from the Transmission Provider Region;
- b. Resource Adequacy Requirement Bids and Zonal Resource Offers, Resource Plans, and bilateral Capacity contract information.
- c. Reserved and scheduled Transmission Service into, out of, or through the Transmission System;
- d. Transmission limits (including temporary deratings) on each of the monitored flowgates or other relevant transmission facilities;
- e. Hourly flow over each of the monitored flowgates or other relevant transmission facilities;
- f. Dispatch of generation for Energy, Regulation, and frequency or other operational orders, including the MISO Balancing Authority or other information pertaining to such dispatch;

- g. Redispatch of generation or other actions taken to manage transmission congestion, including redispatch of a Distributed Energy Aggregated Resource by an Electric Distribution Company to manage distribution system congestion;
- h. Logs of Transmission Service requests, including the disposition of the request and the explanation for any refused, retracted or annulled requests;
- i. Logs of generator interconnection requests, including the disposition of the request and the explanation of any refused requests;
- j. Generation, Distributed Energy Aggregated Resource and transmission facility outage data;
- k. Records of complaints by customers of the Transmission Provider;
- l. Logs of operator actions, determinations, or communications with Market Participants;
- m. Operating procedures and training materials; and
- n. Other information required to be provided to the Transmission Provider under the Transmission Provider's Tariff, operating agreements, Applicable Reliability Standard requirements, or government agency orders.

Any data created by the IMM, including, but not limited to, compilations or modifications of the Transmission Provider's data, will be kept within the exclusive control of the IMM. The IMM, in its sole discretion, may share such data subject to pertinent confidentiality requirements.

MISO
FERC Electric Tariff
MODULES

54.2
Data from Market Participants
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If the IMM determines that additional data or other information is required to accomplish the objectives of the Plan, the IMM may request the persons or entities possessing, having access to, or having the ability to generate or produce such data or other information to furnish it to the IMM. Any such request shall be accompanied by an explanation of the need for such data or other information, a specification of the form or format in which the data is to be produced, and an acknowledgment of the obligation of the IMM to maintain the confidentiality of the data.

- a. A party receiving an information request from the IMM shall furnish all information, in the requested form or format, that is: (i) included in the categories of data or information that it may request from a Market Participant to support an active investigation, as specified in Section 61; or (ii) reasonably necessary to achieve the purposes or objectives of this Plan, not readily available from some other source that is more convenient, less burdensome and less expensive, and not subject to a legal privilege.
- b. The categories of data or information specified in Section 61 that may be routinely requested shall be limited to data or information the routine provision of which would not be unduly burdensome or unduly expensive, and which has been reasonably determined by the IMM to be relevant to the purposes and objectives of this Plan. No party that is the subject of a data request shall be required to produce any summaries, analyses, or reports of the data that do not exist at the time of the data request. The IMM shall notify the Market Participants and other interested parties, and provide an opportunity for comment, prior to adding or deleting any categories of data or information to or from Section 61.
- c. A party receiving a request for data or information, consistent with Section 61, shall promptly provide it to the IMM, and may not contest the right of the IMM to obtain such data or information except to the extent that the Party has a good faith basis to assert that the data or information is not included in any of the categories on the list. If the IMM determines that the requested information has not or will not be provided within a reasonable time, the IMM may invoke the Transmission Provider's dispute resolution provisions set forth in Section 12 of the Tariff.

- d. The Party from whom the information has been requested may invoke the Transmission Provider's dispute resolution provisions, if applicable, to determine the IMM's right to obtain requested information not contained on the foregoing list.
- e. The Parties may submit any such determination to binding arbitration, or other form of binding resolution, and shall seek expedited resolution, in accordance with the applicable dispute resolution procedures. Alternatively, any such Party may contest the request with the FERC. If the entity from whom the data or other information has been requested is not subject to either of the foregoing dispute resolution procedures and does not voluntarily agree to the use of either or a comparable dispute resolution procedure, or has not contested the request with the FERC, the Transmission Provider or the IMM may initiate such judicial or regulatory proceedings to compel the production of the requested information as may be available and deemed appropriate by the IMM.

- a. Access by FERC. Notwithstanding any provisions to the contrary, if the Commission or its staff, during the course of an investigation or otherwise, requests information from the IMM that is otherwise required to be maintained in confidence pursuant to the Tariff, the IMM shall provide the requested information to the Commission or its staff, within the time provided for in the request for information. Should the IMM require additional time to provide the information requested due to logistical matters such as the volume of information requested or technical complexity involved, the IMM will promptly communicate that need to the individual requesting the information and they shall establish the time for production of the requested information. In providing the information to the Commission, or its staff, the IMM shall, consistent with 18 C.F.R. § 388.112, request that the information be treated as confidential and non-public by the Commission and its staff and that the information be withheld from public disclosure. The IMM shall promptly notify the entity that provided the requested information when it is notified by the Commission or its staff, that a request for disclosure of, or decision to disclose, Confidential Information has been received.
- b. Tailored Requests for Information from Authorized Agencies. The IMM will entertain tailored requests for information from Authorized Agencies regarding general market trends and the performance of the markets, excluding any information designed to aid state enforcement actions. Granting or refusing such requests shall be at the IMM's discretion based on time and resource availability. The IMM shall entertain requests from Authorized Agencies in accordance with Section 38.9.4 and Attachment EE of the Tariff.

The IMM shall use all reasonable procedures necessary to protect and preserve the confidentiality of all Confidential Information obtained in connection with the implementation of this Plan.

Except as may be required by subpoena or other compulsory process, the IMM shall not disclose Confidential Information to any person or entity without prior written consent of the affected parties, provided, however, that third parties requesting disclosure of information designated as “Confidential Information” may challenge the designation pursuant to procedures specified in the Business Practices Manuals. Upon receipt of a subpoena or other compulsory process for the disclosure of Confidential Information, the IMM shall promptly notify the party that provided the data and shall provide all reasonable assistance requested by the party to prevent disclosure, and if possible under the terms of the subpoena or other compulsory process shall not release the data until the party provides written consent or until the party’s legal avenues are exhausted. The confidentiality of data and information provided to Interested Government Agencies will be maintained with a protective order or other procedures of the agency for protecting confidential data.

Nothing contained herein shall prohibit the IMM from sharing with the market monitoring unit of another Regional Transmission Organization (“RTO”), or Independent System Operator (“ISO”), upon their request, the electronic tag (“e-Tag”) data of an e-Tag Author or Balancing Authority (defined as those terms are used in FERC Order No. 771) for intra-region transactions and interchange transactions scheduled to flow into, out of or through the Transmission Provider’s Region, to the extent such market monitoring unit has requested such information as

part of its investigation of possible market violations or market design flaws, to the extent that such market monitoring unit is bound by a tariff provision requiring that the e-Tag data be maintained as confidential, or in the absence of a tariff requirement governing confidentiality, a written agreement with the IMM consistent with FERC Order No. 771, and any clarifying orders and implementing regulations.

- a. The IMM shall regularly collect and maintain the information necessary for implementing this Plan. The IMM, in conformity with the Transmission Provider's applicable data retention policies, shall adopt schedules for the periodic destruction of information in the possession of the IMM the retention of which is no longer reasonably necessary for purposes of this Plan. The IMM or Transmission Provider shall ensure that data and information necessary for use by any subsequent IMM shall be retained in usable form.
- b. The IMM shall adopt policies and requirements for the retention of information by Market Participants, and submission of such information to the IMM as necessary for the implementation of this Plan, after providing an opportunity for interested parties and the Market Monitoring Liaison Officer to review and comment on such procedures.

The IMM, with due consideration of the proposals and comments of Market Participants and other interested parties submitted as specified below, and subject to review and comment by the Transmission Provider, shall develop and adopt such indices or other screens for reviewing the data or other information as the IMM deems appropriate.

In connection with the development of indices and screens as specified in Section 55.1, Market Participants, Interested Government Agencies, or other interested parties may submit proposed indices or screens for review of the data or other information collected in connection with the implementation of this Plan, along with any justification for the adoption thereof, to the IMM for consideration and adoption if and to the extent appropriate. The IMM shall provide Market Participants, Interested Government Agencies, and other interested parties the opportunity to comment on any replacement or changes to indices and screens specified in the Tariff or in Business Practices Manuals prior to their adoption.

To the extent practicable, the IMM shall review data or other information collected in connection with implementation of this Plan in accordance with the indices or screens adopted as specified above; provided, however, that nothing herein shall be deemed to prevent the IMM from conducting such further or different review or evaluation of such data or information as appropriate for the effective implementation of this Plan.

Any Interested Government Agency may, at any time, submit information to the IMM concerning any matter relevant to the responsibilities of the IMM under the Plan, or may submit a request to the IMM for it to conduct an investigation. Such submissions or requests may be made on a confidential basis. Acting in a timely manner, the IMM shall carry out the requested investigation to the extent deemed reasonably necessary by the IMM. Subject to redaction or other measures necessary for the protection of Confidential Information, the IMM shall report the results of these investigations to the Transmission Provider, the agency requesting the investigation, and as appropriate to the FERC and other Interested Government Agencies.

Any Market Participant or other interested person or entity may at any time submit information to the IMM concerning any matter relevant to the responsibilities of the IMM under the Plan, or may submit a request to the IMM for it to conduct an investigation. Such submissions or requests may be made on a confidential basis. The IMM may request further relevant information available from such Market Participant or other person or entity as a condition of undertaking any further investigation. Acting in a timely manner, the IMM shall, in its independent judgment, decide whether to undertake an investigation, in the manner that it deems appropriate, or decline to do so.

The IMM shall include a summary of its actions or decisions not to act in its annual report as well as in any other periodic or other reports on any matters within its purview as may be requested by the Transmission Provider's Board of Directors or any of the Interested Government Agencies.

- a. The IMM shall review and report on the performance of the wholesale markets to the Transmission Provider's Board of Directors, the Commission and other interested entities, such as state regulatory commissions and market participants, on at least a quarterly basis. Copies of these reports shall be forwarded by the IMM to each of the Interested Government Agencies. The quarterly reports shall be made publicly available by the Transmission Provider by posting on its website.
- b. The IMM shall also prepare and submit to the Transmission Provider's Board of Directors a more detailed state of the market report on market trends and the competitive performance and efficiency of the Markets and Services. Such report shall be submitted at least annually and include any recommendations of the IMM for the improvement of the Markets and Services, or of the monitoring, reporting and other functions undertaken pursuant to this Plan. A copy of the annual report shall be forwarded by the IMM to each of the Interested Government Agencies. The annual report shall be made publicly available by the Transmission Provider by posting on its website.
- c. The IMM shall make one or more of its personnel available for regular conference calls, which may be attended, telephonically or in person, by the Commission and Authorized Agencies' staff, by representatives of the Transmission Provider, and by Market Participants, subject to appropriate measures for the protection of Protected Information.

The IMM shall prepare such other periodic or other reports on any matters within its purview as may be requested by the Transmission Provider's Board of Directors or any of the Interested Government Agencies. The IMM shall also prepare other reports that it deems necessary, unless the Board of Directors or the Interested Government Agency requesting such report specifies to the contrary. Copies of such reports shall be made publicly available by the Transmission Provider, subject to redaction or other measures necessary for the protection of Confidential Information. All reasonable fees and expenses for the preparation of reports or other filings relating to the Markets and Services that are requested by an Interested Government Agency from the incumbent IMM, or from a former IMM with respect to conditions or conduct occurring in the period during which the entity receiving the request served as the IMM, shall be borne by the Transmission Provider.

The Transmission Provider shall respond to each recommendation in any report by the IMM per Sections 57.1 and 57.2, within one hundred and twenty (120) days from the date of the IMM report. The Transmission Provider and the IMM may reasonably agree on a longer period for responding on a case by case basis. The response shall clearly state and explain the Transmission Provider's agreement or disagreement with each recommendation. The Transmission Provider's response will be given the same distribution as the IMM report.

The liability of the Transmission Provider, and its directors, officers, employees and agents, and of the IMM, and its directors, officers, employees and agents, for any matter arising under or relating to this Plan shall be governed by this Section. The Transmission Provider, and its directors, officers, employees and agents, and the IMM, and its directors, officers, employees and agents, shall not be liable to any person or entity for any matter, act or omission described in or contemplated by this Plan, as the same may be amended or supplemented from time to time, including but not limited to liability for any financial loss, loss of economic advantage, opportunity cost, or actual, direct, indirect or consequential damages of any kind resulting from or attributable to any act or omission of the Transmission Provider or the IMM under this Plan unless the foregoing persons or organizations are found to have engaged in gross negligence or willful misconduct by a court of competent jurisdiction.

The Transmission Provider shall indemnify and hold harmless its directors, officers, employees and agents and the IMM, its directors, officers, employees and agents, of and from any and all actions, claims, demands, costs (including any form of damages or other economic loss and all court costs and reasonable attorneys' fees) and liabilities to third parties, arising from or in any way connected with, the implementation or a failure to implement this Plan, except to the extent that such action, claim, demand, cost or liability results from the gross negligence or willful misconduct of any of the foregoing persons.

- a. With the exception of the limitation of liability specified in Section 58 of the Tariff, nothing herein shall prevent the Transmission Provider or any other person or entity from asserting any rights it may have under the Federal Power Act or any other applicable law, statute, or regulation, including the filing of a petition with or otherwise initiating a proceeding before the FERC regarding any matter which is the subject of this Plan.
- b. Except as and to the extent otherwise specified in this Plan, including the provisions of Section 59.a, disputes as to the implementation of or compliance with this Plan shall be subject to the Transmission Provider's dispute resolution procedures contained in Section 12 of the Tariff.

The following data or information may be obtained by the IMM from Market Participants, Transmission Owners, or the Transmission Provider in accordance with Section 54.2 of the Tariff. Market Participants, Transmission Owners, or the Transmission Provider shall retain the following categories of data or information for at least two years, beginning with the date of initial operation.

- a. Production costs: Data or information relating to the costs of operating a specified Electric Facility or Distributed Energy Aggregated Resource (for Generation Resources such data or information shall include, heat rates, start-up fuel requirements, fuel purchase costs, environmental costs, and operating and maintenance expenses). Data or information relating to direct and/or indirect costs of reducing consumption of electricity by a Demand Response or Distributed Energy Aggregated Resource.
- b. Opportunity costs: Data or information relating to regulatory, environmental, technical, or other restrictions that limit the run-time or other operating characteristics of a Generation Resource. Data or information relating to regulatory, environmental, technical, or other restrictions that limit the availability or other operating characteristics of a Demand Response Resource-Type I, Demand Response Resource-Type II, and Distributed Energy Aggregated Resource. Data or information related to the opportunity to sell Capacity bilaterally or exporting Capacity to other markets.

- c. Going-Forward Costs: Data or information related to the costs of keeping a Planning Resource in operation or returning a Planning Resource from a Suspend status.
- d. Operating Logs: Data or information relating to the operating status of a generating facility, including an Electric Storage Resource or Distributed Energy Aggregated Resource, including logs showing the status of a specified resource. Such data or information shall include any information relating to a forced outage or derating of a Distributed Energy Aggregated Resource or Generation Resource, including an Electric Storage Resource.
- e. Transmission Logs: Data or information relating to the operating status of a transmission facility, the calculation of the facility ratings, a contingency, or other operating consideration. This shall include data or information related to any Generation Resources called out-of-merit or dispatched under any other operating order from the Transmission Provider.
- f. LSE Forecasted Demand: Data or information relating to LSEs' forecasted Demand.
- g. Bidding Agreements: Data or information relating to the ability of a Market Participant or its Affiliate to determine the pricing or output level of generating or storage capacity owned by another entity, including but not limited to any document setting forth the terms or conditions of such ability.
- h. Demand Response Resource-Type I, Demand Response Resource Type II, and Distributed Energy Aggregated Resource information: Data or information

related to the capability of a Demand Response Resource or Distributed Energy Aggregated Resource to inject or reduce its consumption of electricity, or related to actual injections or reductions in consumption of electricity achieved during specific events.

- i. Physical operating parameters: Data or information relating to the operating characteristics of a Distributed Energy Aggregated Resource, or Generation Resource, including an Electric Storage Resource, including but not limited to: ramp rates, emergency limits, minimum run times, start times, and other temporal or operating parameters associated with a specified Distributed Energy Aggregated Resource or Electric Facility including, but not limited to, the underlying assumptions, design criteria, and methods used to determine Distributed Energy Aggregated Resource or Electric Facility ratings.
- j. Planning Resources: Data or information relating to bilateral Capacity sales or Capacity exports, and data associated with capacity accreditation, including but not limited to GVTC data, generation availability data, NERC Generation Availability Data System (GADS) information, and data associated with demonstrating deliverability.

For purposes of carrying out its responsibilities under Module D, the IMM may also obtain from the Local Balancing Authorities, and/or from their delegates, any written and/or recorded phone logs with Transmission Operators and adjacent Balancing Authorities relating to the performance of the responsibilities and tasks assigned or otherwise allocated to the Local Balancing Authorities pursuant to the Amended Balancing Authority Agreement, to the extent that such data or information is not available from the Transmission Provider.

- a. These market power Mitigation Measures are intended to provide the means for the Transmission Provider to mitigate the market effects of any conduct that would substantially distort competitive outcomes in the Markets and Services administered by the Transmission Provider, while avoiding unnecessary interference with competitive price signals.
- b. These Mitigation Measures are intended to minimize interference with open and competitive markets. To that end, the Mitigation Measures authorize the mitigation of specific conduct only when the conduct exceeds well-defined conduct thresholds and when the effect on market outcomes of the conduct exceeds well-defined market impact thresholds. Using these thresholds, the Mitigation Measures are designed to allow prices to rise efficiently to reflect legitimate supply shortages while effectively mitigating inflated prices associated with artificial supply shortages in transmission constrained areas resulting from physical or economic withholding.
- c. As set forth in Part III of Module D, the Transmission Provider shall apply all Mitigation Measures that can affect market outcomes on a going-forward basis. All other Mitigation Measures may be applied by either the IMM or Transmission Provider, as set forth in the Tariff. In addition, the IMM shall monitor the Markets and Services administered by the Transmission Provider for conduct that may distort competitive market outcomes, but does not trigger the thresholds specified below for the imposition of Mitigation Measures. If the IMM identifies any such conduct, the Transmission Provider shall make a filing under § 205 of the Federal Power Act, 16 U.S.C. § 824d (1999) (“§ 205”) with the Commission requesting authorization to apply appropriate Mitigation Measures. Any

such filing shall identify the particular conduct the IMM believes warrants mitigation, shall propose a specific Mitigation Measure for the conduct, and shall set forth the justification for that Mitigation Measure.

- d. The IMM shall monitor the actions of the Transmission Provider to identify any actions that substantially distort competitive outcomes in the Markets and Services administered by the Transmission Provider. If such actions are identified, the IMM shall recommend changes in these actions and, as necessary, to Transmission Provider's market rules or procedures.

Mitigation Measures may be applied: (i) to the Offers, scheduling or operation of a Distributed Energy Aggregated Resource, or an Electric Facility; or (ii) as specified in Section 65.3.

- a. To achieve the foregoing purpose and objectives, the Transmission Provider shall impose Mitigation Measures to remedy conduct that:
 - i. is significantly inconsistent with competitive conduct, as set forth in Section 64.1;
and
 - ii. would result in a substantial change in one (1) or more prices in any Market administered by the Transmission Provider, or Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credits, as set forth in Section 64.2.
- b. The categories of conduct that are inconsistent with competitive conduct include the categories of conduct specified in Section 63.3 below. In general, the Transmission Provider shall consider a Market Participant's conduct for a given Distributed Energy Aggregated Resource or Electric Facility to be inconsistent with competitive conduct if the conduct would (i) reduce the net revenue associated with the Distributed Energy Aggregated Resource or Electric Facility, but for the effect of the conduct on market outcomes, or (ii) inefficiently reduce the capability of the Transmission System. The Mitigation Measures will only apply in the presence of a Binding Transmission Constraint, a binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or a binding Sub-Regional Power Balance Constraint, or where there is a VLR Commitment. Binding Transmission Constraints shall include constraints in adjacent areas that are monitored by the Transmission Provider and affect the dispatch or commitment of Electric Facilities in the Transmission Provider Region.

- c. Notwithstanding any other provisions in this Module D, mitigation shall not be applied when a Sub-Regional Power Balance Constraint binds from the Second Planning Area into the First Planning Area.

- a. The following categories of conduct, whether by a single firm or by multiple firms, may warrant mitigation:
 - i. *Physical withholding*, that is, not offering to sell or schedule the output of or services provided by a Distributed Energy Aggregated Resource with greater than ten (10) MW of demonstrated injection capability or an Electric Facility (including a Planning Resource other than a Demand Resource, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as a Load Modifying Resources, Energy Efficiency Resource, or External Resource) capable of serving the Energy and Operating Reserve Markets, Planning Resource Auction, or any other market administered by the Transmission Provider. Such withholding may include: (i) declaring that a Distributed Energy Aggregated Resource or an Electric Facility has been derated, forced out of service or otherwise become unavailable for technical reasons that are not true or cannot be verified; (ii) refusing to provide Offers or schedules for a Distributed Energy Aggregated Resource or an Electric Facility; (iii) operating a Distributed Energy Aggregated Resource or a Generation Resource in real time to produce an output level that is less than Dispatch Targets; (iv) derating a transmission facility or interface for technical reasons that are not true or verifiable; (v) operating a transmission facility in a manner that is not economic and causes a Binding Transmission Constraint, or binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or, in the case of the Second Planning Area, a binding Sub-Regional Power

Balance Constraint; (vi) not submitting ZRC Offers to the Planning Resource Auction for universally deliverable Planning Resources that are not designated to satisfy the capacity obligations of an LSE in MISO or exported; (vii) exporting universally deliverable Planning Resources to a Capacity market with prevailing prices less than 50 percent of the Auction Clearing Price; or (viii) declaring that the capability of a Distributed Energy Aggregated Resource or a Generation Resource to provide Energy, Operating Reserve, Short-Term Reserve or Planning Resources is reduced for reasons that are not true or verifiable. Market Participants will not be deemed to be physically withholding a Distributed Energy Aggregated Resource or an Electric Facility when they are following the directions of the MISO Balancing Authority or Applicable Reliability Standards.

- ii. *Economic withholding*, that is, submitting Offers for a Distributed Energy Aggregated Resource with greater than ten (10) MW of demonstrated injection capability or a Generation Resource, a Planning Resource (other than a Demand Resource, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as a Load Modifying Resources, Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability, Energy Efficiency Resource, or External Resource), or an Electric Storage Resource that violates the economic withholding criteria set forth in Section 64.1.2 that cannot be justified, so that (i) output cleared or scheduled from the Resource is or will be reduced, including Energy, Contingency Reserves, Regulating Reserves, Short-Term Reserves, Up

- Ramp Capability, and/or Down Ramp Capability, (ii) the Offers will clear at prices significantly above competitive levels, or (iii) the Planning Resource will not clear the Planning Resource Auction or the amount of Zonal Resource Credit cleared is or will be reduced.
- iii. *Uneconomic production from a Generation Resource*, that is, submitting Offers to increase or actually increasing the output of a Distributed Energy Aggregated Resource or a Generation Resource to levels that would otherwise be uneconomic, and causing a Binding Transmission Constraint or binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or in the case of the Second Planning Area, a binding Sub- Regional Power Balance Constraint.
- iv. *Uneconomic Market Participant Bids or Virtual Transactions*, that is, submitting an Offer in the Day-Ahead Energy Market and Operating Reserve Market that is not economically justified based on risk management or other economic considerations, and that causes substantial divergence between prices in the Day-Ahead Energy and Operating Reserve Market and the Real-Time Energy and Operating Reserve Market, as defined in Sections 65.4.2.d and 65.5.2.b.
- b. Taking advantage of opportunities to sell at a higher price in a market other than a Market administered by the Transmission Provider shall not be deemed a form of withholding or otherwise inconsistent with competitive conduct.
- c. The IMM shall monitor Markets and Services for other categories of conduct, whether by a single firm or by multiple firms, that substantially distort competitive outcomes in any

Market administered by the Transmission Provider. The IMM shall: (i) seek to amend the foregoing list as may be appropriate to include any such conduct that would substantially distort or impair the competitiveness of any of the Markets and Services administered by the Transmission Provider; and (ii) seek such other authorization requiring the Transmission Provider to mitigate the effects of such conduct from the FERC as may be appropriate.

- d. Notwithstanding anything to the contrary, any modification to the list of conduct in Section 63.3.3.a that may warrant mitigation, whether recommended by the IMM or derived from another source, is to be filed by the Transmission Provider with the Commission for approval.
- e. Notwithstanding the thresholds listed in Sections 64.1.1, 64.1.2, and 64.1.3 for identifying the categories of conduct that may warrant mitigation, conduct by any Resource that results in Physical Withholding, Economic Withholding, or Uneconomic Production of less than 2 MW shall not warrant mitigation.

As described above, one of the purposes of the Mitigation Measures is to mitigate locational market power resulting from transmission congestion. Locational market power associated with transmission congestion can occur in Narrow Constrained Areas, Dynamic Narrow Constrained Areas, or Broad Constrained Areas.

- a. On a yearly basis, or more frequently as the IMM deems necessary, the IMM will evaluate the patterns of congestion in the Transmission Provider Region to determine the constrained areas that should be identified as Narrow Constrained Areas in accordance with the following procedures.
- b. A Narrow Constrained Area (NCA) is an electrical area identified by the IMM that is defined by one or more Binding Transmission Constraints, or binding Post Reserve Deployment Constraints (other than Sub-Regional Power Balance Constraints), or binding Sub-Regional Power Balance Constraints into the Second Planning Area, that are expected to be binding for at least five hundred (500) hours during a given twelve (12)-month period and within which one (1) or more suppliers are pivotal.
- c. A supplier is pivotal when the Energy output or provision of Contingency Reserves, Regulating Reserves, or Short-Term Reserves by some of its Generation Resources must be increased or decreased to resolve a Binding Transmission Constraint, or binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or a Sub-Regional Power Balance Constraint into the Second Planning Area, during some or all hours. This will be determined utilizing transmission load flow cases or Transmission Provider market cases reflecting a variety of market conditions.
- d. These load flow or market cases will be used to estimate: (i) the Generation Shift Factors for all Transmission Provider and relevant non-Transmission Provider Generation Resources relative to each potentially constrained flowgate; (ii) the capability of all Transmission Provider Resources to meet the requirements of each binding Post Reserve Deployment Constraint; (iii) the base loadings of Generation Resources; (iv) the base

allocation of Contingency Reserves, Regulating Reserves, Short-Term Reserves, Up Ramp Capability, and Down Ramp Capability on Generation Resources; and (v) the base flows on each flowgate. A supplier is pivotal when a Binding Transmission Constraint, or binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or a Sub-Regional Power Balance Constraint into the Second Planning Area cannot be relieved by changing the base loadings for other suppliers' Generation Resources.

- e. Once the initial Narrow Constrained Areas are defined, the Transmission Provider may remove an area's designation as a Narrow Constrained Area if the IMM determines that the Binding Transmission Constraint(s), or binding Post Reserve Deployment Constraint(s) (other than Sub-Regional Power Balance Constraints) or a Sub-Regional Power Balance Constraint(s) into the Second Planning Area that define the Narrow Constrained Area are expected to be binding for fewer than five hundred (500) hours during a given twelve (12)-month period.
- f. The IMM will seek comment from the Transmission Provider's Market Participants before altering or removing the designations of any area as a Narrow Constrained Area. Subject to any applicable confidentiality requirements, the IMM will provide any interested Market Participants with a description of its supporting analysis to allow comment on proposed designation changes.
- g. The Transmission Provider shall obtain the prior approval of the Commission for the designation of any new area as a Narrow Constrained Area, and for any change or removal of such a designation. The Transmission Provider shall submit to the

Commission the analysis supporting any such change.

- h. To ensure the NCA designations are available to Market Participants, the Narrow Constrained Area designations, the associated thresholds set forth in Section 64.1.2, and the NCA Constraint Generation Shift Factor Cutoff for the NCA will be posted on the Transmission Provider's website.
- i. The IMM will notify the Transmission Provider of the need to establish a Dynamic Narrow Constrained Area in an electrical area when:
 - 1. The conduct and impact tests applicable to Dynamic Narrow Constrained Areas, specified in sections 63.3, 64.1.1, 64.1.2, 64.1.3, or 64.2.1 have been met by one or more Distributed Energy Aggregated Resources, or Generation Resources, including Electric Storage Resources, in an electrical area affecting a Binding Transmission Constraint; and
 - 2. The IMM determines that any Binding Transmission Constraint(s) into the applicable electrical area has/have been binding for at least 15 percent of the hours in a continuous 5-day period prior to the current period; or the IMM identifies the initiation of an outage or re-occurring condition that previously has caused a Binding Transmission Constraint during at least 15 percent of hours in a continuous 5-day period;
- j. Upon notification from the IMM, the Transmission Provider shall promptly activate the Dynamic Narrow Constrained Area and notify the Market Participants of the designation and activation of the Dynamic Narrow Constrained Area by posting a notice to the Transmission Provider's website. The posted notice shall identify the Binding

Transmission Constraint(s) into the Dynamic Narrow Constrained Area, the Generation Resource(s), including any Electric Storage Resource(s) in the Dynamic Narrow Constrained Area, as determined by the IMM, and the Generation Shift Factors used for such determination.

- k. The designation of an area as a Dynamic Narrow Constrained Area shall be removed based on the IMM's determination of any of the following conditions:
 - 1. Specific outages or other conditions causing the Binding Transmission Constraint(s) defining the Dynamic Narrow Constrained Area have been resolved;
or
 - 2. No mitigation has occurred in the prior 30 days.

Upon determining the existence of any of the above conditions, the IMM will notify the Transmission Provider that the Dynamic Narrow Constrained Area should be removed.

- l. Upon notification from the IMM that a Dynamic Narrow Constrained Area should be removed, the Transmission Provider shall remove the Dynamic Narrow Constrained Area and post on its website a notice of such removal.
- m. A Generation Shift Factor Cutoff will be specified by the IMM to identify Generation Resources that will be included in an NCA or Dynamic NCA. The default Generation Shift Factor Cutoff for all NCA and Dynamic NCA transmission constraints will be three percent (3%).

- a. A Broad Constrained Area is an electrical area in which sufficient competition usually exists even with one or more Binding Transmission Constraints, or binding Post Reserve Deployment Constraints (other than Sub-Regional Power Balance Constraints), or binding Sub-Regional Power Balance Constraints into the Second Planning Area, but within which any such constraint can result in substantial locational market power under certain market or operating conditions.
- b. Broad Constrained Areas will not be identified in advance by the IMM, but will be monitored for and mitigated by the Transmission Provider when appropriate, utilizing the thresholds in Section 64.1 and Section 64.2.
- c. All resources that significantly affect the flow over the constrained flowgate or the amount of Operating Reserves or Short-Term Reserves scheduled to meet a binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint), or a binding Sub-Regional Power Balance Constraint into the Second Planning Area, would be tested to determine whether mitigation is warranted. A Generation Resource will be deemed to have a significant effect on the flowgate if the absolute value of its Generation Shift Factor is greater than the Constraint Generation Shift Factor Cutoff. A Generation Resource or Distributed Energy Aggregated Resource, including an Electric Storage Resource, will be deemed to have a significant effect on a binding Post Reserve Deployment Constraint if it has the capability to provide Operating Reserve to satisfy the constraint.
- d. The Constraint Generation Shift Factor Cutoff will be specified by the IMM to identify Generation Resources that will be included in a BCA. A default level of three percent

- (3%) will be used as the Constraint GSF Cutoff for all flowgates, except for those flowgates for which the Commission has approved a different Constraint GSF Cutoff level.
- e. The IMM will make all Constraint Shift Factor Cutoffs, and current and prior active BCAs, including associated flowgates, available to the Market Participants by posting them on the Transmission Provider website.
 - f. To assist the owner of a Generation Resource or Distributed Energy Aggregated Resource in understanding whether its unit may be located within a Broad Constrained Area for a given flowgate, the IMM will post a representative set of Generation Shift Factors for the Generation Resources in the Transmission Provider Region.
 - g. Notwithstanding any other provisions in this Module D, the First Planning Area shall not be designated as a BCA or NCA based on a binding Sub-Regional Power Balance Constraint on flows from the Second Planning Area to the First Planning Area.

Conduct that may potentially warrant the imposition of a Mitigation Measure includes the categories described in Section 63.3.a above, which shall be detected through the use of indices and screens developed by the IMM and made available as specified in the Plan. The thresholds listed in Sections 64.1.1 to 64.1.3 below shall be used to identify conduct that may warrant mitigation.

- a. Except as specified in subsection (e) below and in Section 63.3e, the following initial thresholds will be employed by the IMM to identify physical withholding of a Resource, including a Generation Resource, Distributed Energy Aggregated Resource, or Electric Storage Resource:
 - i. Operating a unit in real-time at an output level that is less than the lower of ninety percent (90%) of the Optimal Achievable Output and ten (10) MW below the Optimal Achievable Output.
 - ii. Operating a unit off-control unjustifiably at an average hourly output level that is less than the lower of ninety percent (90%) of the Optimal Achievable Output and ten (10) MW below the Optimal Achievable Output.
 - iii. Offering a unit with a dispatch maximum that is unjustifiably less than the lower of ninety percent (90%) of the Optimal Achievable Output and ten (10) MW below the Optimal Achievable Output.
- b. The amounts of generating Capacity considered withheld for purposes of applying the foregoing thresholds shall include deratings or outages of generating Capacity that is economic and is physically capable of operating, and any portions of a Generation Resource's or Distributed Energy Aggregated Resource available output that is not scheduled, Offered or is economically withheld under the thresholds in Section 64.1.2. However, the amounts considered withheld shall not include any amount not scheduled or Offered reflecting any operating limitation, such as thermal, voltage, or stability limits referenced in the BPM for Outage Operations, provided by the Transmission Provider or

Transmission Operator to preserve the reliability of the Transmission System, for the duration of such limitation.

- c. The foregoing thresholds are intended to ensure that mitigation only be applied to significant instances of locational market power resulting from one (1) or more Binding Transmission Constraints or binding Post Reserve Deployment Constraints associated with a Broad Constrained Area.
- d. The following threshold will be employed by the IMM to identify physical withholding of Planning Resources (excluding Demand Resources, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as Load Modifying Resources, Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability, Energy Efficiency Resources, and External Resources) by a Market Participant, collectively with any Affiliate, from the Planning Resource Auction. The withholding of more than the Physical Withholding Threshold Quantity of Planning Resources under the ownership or control of a Market Participant and any Affiliate from the Planning Resource Auction may result in mitigation.
 - i. The Physical Withholding Threshold Quantity for RAR will be set at fifty (50) MW for each LRZ and will apply collectively to a Market Participant and any Affiliate. The IMM will use reasonable efforts to contact each Affiliate one time during the Planning Resource Auction offer window when the combined, affiliated Market Participant offers exceed the Physical Withholding Threshold

Quantity to allow Market Participants to change their offers prior to the offer window closing.

- ii. The IMM may modify the Physical Withholding Threshold Quantity by a Commission filing if it determines that the current threshold is not effective in mitigating suppliers' ability to affect prices in the Planning Resource Auction, or that the current threshold is unreasonably restrictive.
- iii. The IMM will seek comment from the Market Participants before making a filing to alter the Physical Withholding Threshold Quantity. Subject to any applicable confidentiality requirements, the IMM will provide any interested stakeholders with a description of its supporting analysis to allow comment on proposed designation changes.
- iv. The Transmission Provider shall obtain the prior approval of the Commission for any change to the Physical Withholding Threshold Quantity. The Transmission Provider shall submit to the Commission the analysis supporting any such change.
- e. A transmission facility shall be deemed physically withheld if: (a) it is scheduled out of service for technical reasons that are not true or cannot be verified, (b) due to the actions of Transmission Operators, the IMM has identified a pattern of scheduling outages resulting in increased market costs compared to an alternative and lower cost impact outage schedule. If such actions are identified, the IMM shall report such findings to the Commission and the Transmission Provider within thirty (30) days, or (c) it is not operated in accordance with Transmission Provider's Dispatch Instructions and such failure to conform to Transmission Provider's Dispatch Instructions causes a Binding

Transmission Constraint or a binding Post Reserve Deployment Constraint. A transmission facility shall not be deemed withheld if it is subject to a forced outage or is out of service for maintenance in accordance with a maintenance schedule approved by the Transmission Provider.

- f. The minimum quantity thresholds in Section 64.1.1.a shall apply to the identification of physical withholding by a Generation Resource or Distributed Energy Aggregated Resources, including any Electric Storage Resource in a Broad Constrained Area. With respect to a Narrow Constrained Area or a Dynamic Narrow Constrained Area, the identification of physical withholding by a Distributed Energy Aggregated Resources with greater than ten (10) MW of demonstrated injection capability or a Generation Resource, including an Electric Storage Resource shall be made when such Resource engages in any of the activities described in Section 64.1.1.a, without regard to any minimum quantity of that activity.
- g. Market Participants with excess capacity can refuse to submit ZRC Offers into the Planning Resource Auction without being deemed to have engaged in Physical Withholding by the IMM under the following circumstances:
 - i. Market Participants that sell their capacity bilaterally for delivery in the given Season of the applicable Planning Year before the Planning Resource Auction.
 - ii. Market Participants that sell their capacity bilaterally for delivery in the given Season of the applicable Planning Year after the Planning Resource Auction.

- iii. Market Participants that designate their capacity to satisfy their own capacity requirements through a Fixed Resource Adequacy Plan for the given Season of the applicable Planning Year.
- iv. Market Participants that export their capacity to another area at a capacity price that is comparable to or higher than the expected capacity price.
- v. Market Participants whose capacity is not economic to sell in the Transmission Provider Region.
- vi. Market Participants whose withholding would not raise prices (i.e., suppliers that do not have market power).
- vii. Market Participants that have a total amount of un-offered capacity less than the stated quantity threshold in Section 64.1.1.d.i.
- viii. Market Participants that export their capacity to another area outside of the Transmission Provider Region to serve their own capacity requirements associated with their load located in that area.
- ix. Market Participants with capacity expected to be in Suspend status during the relevant Season of the Planning Year that is not offered as part of the Planning Resource Auction because operation of that Capacity during the relevant Season of the Planning Year would be contrary to applicable law, regulation, or court or agency order (such as a state regulatory order pertaining to non-operation of a generator, settlement with an environmental agency, or a consent decree approved by a court). Documentation of such circumstances shall be provided by the Market Participant to the IMM, and the IMM shall provide a written explanation

of its determination to the Market Participant regarding such documentation upon request.

- x. Market Participants with capacity in Suspend status that cannot, regardless of cost, be returned to operation within thirty (30) Calendar Days after the start of the relevant Season of the Planning Year. Documentation of such circumstances shall be provided by the Market Participant to the IMM, and the IMM shall provide a written explanation of its determination to the Market Participant regarding such documentation upon request.
- xi. Market Participants with capacity expected to be on outage for greater than thirty-one (31) Days in a Season of the Planning Year may submit documentation of such circumstances to the IMM, and the IMM shall provide a written explanation upon request of its determination to the Market Participant regarding whether that capacity can forego participation in the PRA without being deemed to have engaged in Physical Withholding. Documentation submitted for a Generation Resource must include submission of a Generator Planned Outage request. For the portion of a Resource that the IMM has determined can forego participation in the PRA based on full or partial outage expected to exceed thirty-one (31) Days in a Season of the Planning Year, the Market Participant for a Generation Resource can still offer the excluded portion of the Resource in the relevant Season in the PRA, if it so chooses, up to the annual CONE value divided by the number of days in the Season without needing to request a facility-specific Reference Level and will not be evaluated for economic withholding in that Season.

- a. The following thresholds shall be employed by the IMM to identify economic withholding that may warrant the mitigation of a unit's offer in a Broad Constrained Area and shall be determined with respect to a Reference Level determined as specified in Section 64.1.4.
 - i. Energy and minimum generation Offers: A three hundred percent (300%) increase or a \$100 per MWh increase, whichever is lower; provided, however, that Energy or minimum generation Offers (i.e., No-Load Offers plus Energy Offers up to the Hourly Economic Minimum Level, or Hourly Curtailment Offers plus Energy Offers up to the Targeted Demand Reduction Amount, in the case of a Demand Response Resource – Type I) below \$25 per MWh shall be deemed not to constitute economic withholding.
 - ii. Start-up Offers: At least \$200 and at least two hundred percent (200%) increase.
 - iii. Contingency Reserve Offers and Regulating Reserve Total Cost Offers:
 - A. Transition Period. The initial conduct threshold for Contingency Reserve Offers and Regulating Reserve Total Cost shall be a three hundred percent (300%) increase or a \$10 per MW/h increase, whichever is lower. At the beginning of each quarterly period, the conduct threshold will be increased by \$10 per MW/h, unless the IMM finds market behavior that warrants keeping the threshold constant for the next ninety (90) days, until the conduct threshold reaches the limit amount specified in Section 64.1.2.a.iii.B. Thirty days prior to the end of each quarter during which any portion of the Transmission Provider Region remains subject to a

conduct threshold below the limit specified in 64.1.2.a.iii.B, the IMM shall file with the Commission a report indicating whether market power is appropriately mitigated in the affected area. The first such report shall be submitted for the quarterly period ending December 31, 2008, and on a calendar quarterly basis thereafter.

- B. Post Transition Period. Except as otherwise provided in Section 64.1.2A a three hundred percent (300%) increase or a \$50 per MW/h increase, whichever is lower; provided, however, that Contingency Reserve Offers and Regulating Total Cost below \$10 per MW/h shall be deemed not to constitute economic withholding.
- iv. Off-Line Short-Term Reserve Offers: A three hundred percent (300%) increase or a \$25 per MW/h increase, whichever is lower; provided, however, that Offers for Off-Line Short-Term Reserve below \$10 per MW/h shall be deemed not to constitute economic withholding.
- v. Time-based Offer parameters: An increase of three (3) hours, or an increase of six (6) hours in total for multiple time-based Offer parameters. Time-based Offer parameters include, but are not limited to, Start-Up Times, Minimum Run Times and Minimum Down Times.
- vi. Offer parameters expressed in units other than time or dollars: A 100 percent (100%) increase for parameters that are minimum values, or a 50 percent (50%) decrease for parameters that are maximum values (including but not limited to Ramp Rates and Maximum Shut Down Limits).

- b. The foregoing thresholds are intended to ensure that mitigation is only applied to significant instances of locational market power resulting from one or more Binding Transmission Constraints, or binding Post Reserve Deployment Constraints (other than Sub-Regional Power Balance Constraints), or Sub-Regional Power Balance Constraints into the Second Planning Area associated with a Broad Constrained Area.
- c. The following thresholds shall be employed by the IMM to identify economic withholding that may warrant the mitigation of a unit's offer by the Transmission Provider in a Narrow Constrained Area or a Dynamic Narrow Constrained Area, and shall be determined with respect to a Reference Level determined as specified in Section 64.1.4.
 - i. Energy and minimum generation Offers: an increase in the Offer above the applicable Reference Level by more than the threshold determined in accordance with the following formulas:
 - (a) For Narrow Constrained Areas:
$$\text{Narrow Constrained Area Threshold} = \frac{\text{Net Annual Fixed Cost}}{\text{Constrained Hours}}$$

Where:

Net Annual Fixed Cost = Annual fixed costs of a new peaking generator per MW, including recovery of capital costs, minus appropriate credits for net revenue the new peaking generator would receive from the Markets and Services provided under the Tariff and any applicable resource adequacy mechanism.

Constrained Hours = The total number of hours over the prior twelve (12) months in which (i) a Binding Transmission Constraint has occurred on any interface into the Narrow Constrained Area in which the Generation Resource is located, (ii) a binding Post Reserve Deployment Constraint (other than a Sub-Regional Power Balance Constraint) has occurred within the Narrow Constrained Area in which the Generation Resource is located, or (iii) in the case of the Second Planning Area, a binding Sub-Regional Power Balance Constraint has occurred the Narrow Constrained Area in which the Generation Resource is located, but not more than 2000 hours.

(b) For Dynamic Narrow Constrained Areas:

Dynamic Narrow Constrained Area Threshold = \$25/MWh.

- ii. Start-up Offers: At least \$50 and at least 50 percent (50%) increase.
- iii. Time-based and other Offer parameters: thresholds stated in Sections 64.1.2.a.v and 64.1.2.a.vi.
- iv. The Transmission Provider shall post on its website the threshold values for each Narrow Constrained Area.
- v. Offers for Operating Reserves: the IMM will employ the thresholds listed in Section 64.1.2.a.iii to identify economic withholding that may warrant the mitigation of a unit in a Narrow Constrained Area.
- vi. Off-Line Short-Term Reserve Offers: The IMM will employ the thresholds listed in Section 64.1.2.a.iv to identify economic withholding that may warrant the mitigation of a unit in a Narrow Constrained Area.

- vii. When a Binding Transmission Constraint simultaneously defines both a Narrow Constrained Area and a Dynamic Narrow Constrained Area, the applicable conduct thresholds will be the lower of the two thresholds determined under sections 64.1.2.c.i.a. and 64.1.2.c.i.b.
- d. Zonal Resource Credit Offers: the IMM will identify potential economic withholding that may warrant the mitigation of a Zonal Resource Credit Offer within the MISO Region by determining if the Offer exceeds a threshold equal to the sum of 10% of the applicable CONE value divided by the number of days in the Planning Year for the Local Resource Zone where the Zonal Resource Credit is located and the applicable Reference Level for the Zonal Resource Credit. If the Zonal Resource Credit Offer is associated with a Planning Resource that has a facility-specific Reference Level pursuant to Section 64.1.4.f, for which the IMM shall instead use a threshold of \$0/MW-day above the facility-specific Reference Level. This Section 64.1.2.d shall not apply to Demand Resources, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as Load Modifying Resources, Energy Efficiency Resources, Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability, or External Resources.
- e. Economic withholding of Generation Resources needed for Voltage and Local Reliability Commitments may warrant mitigation of the Day Ahead or Real Time Revenue Sufficiency Guarantee Credits for the duration of their commitment periods if:

- i. The Generation Offers result in an increase in Production Cost and Operating Reserve Cost of more than ten percent (10%) and more than \$200 per day from the applicable Reference Level Generation Offer; or
 - ii. The Resource conduct exceeds any of the thresholds in either section 64.1.3.a.i(b) or Section 64.1.3.a.i(c)
- f. Economic withholding of a Generation Resource committed in a Broad Constrained Area, a Narrow Constrained Area, or a Dynamic Narrow Constrained Area may warrant mitigation of the Day Ahead or Real Time Revenue Sufficiency Guarantee Credits for the duration of the commitment periods if:
 - i. The Generation Offer results in an increase in a Generation Resource's Production Costs and Operating Reserve Costs that exceeds the greater of twenty-five dollars per MWh (\$25/MWh) or twenty-five percent (25%) in Production Cost and Operating Reserve Cost due to an increase in the Generation Offer from the applicable Reference Level Generation Offer for a Generation Resource; or
 - ii. The Resource conduct exceeds any of the thresholds in either Section 64.1.3.a.i(b) or Section 64.1.3.a.i(c).

- a. The following thresholds will be employed by the IMM to identify potential uneconomic production; Energy is produced by a Distributed Energy Aggregated Resource or Generation Resource at a location where the hourly average LMP is less than the lesser of 50 percent (50%) of the Resource's incremental Energy Reference Level and the Resource's incremental Energy Reference Level minus \$25.
- b. The uneconomic production identified by the tests in section 64.1.3a may warrant the imposition of a Mitigation Measure when it results from the following conduct:
 - i The incremental Energy Offer Price for the Resource is less than the lesser of 50 percent (50%) of the Resource's incremental Energy Reference Level and the Resource's incremental Energy Reference Level minus \$25; or
 - ii The Hourly Economic Minimum Limit of an Offer for a Generation Resource exceeds the applicable Reference Level by more than 25 percent (25%); or
 - iii. Any of the conduct thresholds specified in Section 64.1.2.a.v and Section 64.1.2.a.vi are exceeded.
 - iv Producing real-time output from a Generation Resource that exceeds the greater of 110 percent (110%) of the Optimal Achievable Output and ten (10) MW above the Optimal Achievable Output.

- a. Reference Levels are intended to reflect a Generation Resource's, Planning Resource's, Distributed Energy Aggregated Resource's or Electric Storage Resource's marginal costs, including Legitimate Risks and opportunity costs or justifiable technical characteristics for physical Offer parameters. Included with Generation Resources are Demand Response Resources – Type II, Dispatchable Intermittent Resources and External Resources that are pseudo-tied into the MISO Balancing Authority Area. The determination of Reference Levels for Generation Resources is supported by data submitted to the Operating Cost Survey. A Reference Level for each component of a Generation Resource's Offer shall be calculated using one of the two methods for which sufficient information is available. Additionally, resource types not subject to mitigation, such as Demand Response Resources – Type I, may request reference levels for incremental energy cost verification above the Energy Offer Soft Price Cap.
 - i. The lower of the mean or the median of a unit's accepted incremental Energy Offers or ancillary service offers in competitive periods over the previous 90 days for similar hours or Load levels, adjusted for changes in fuel prices and capped at \$1,000 per MWh;
 - ii. A level determined based on information submitted by or in consultation with the Market Participant submitting the Offer or Offers at issue and intended to reflect a unit's marginal costs, as supported by data submitted to the Operating Cost Survey, including Legitimate Risks and opportunity costs, or justifiable technical characteristics for physical Offer parameters, provided such consultation has occurred prior to the occurrence of the conduct being examined except in the case

of a restoration event in accordance with Schedule 52. Such consultation may be initiated by either the IMM or the Market Participant. The data submitted and collected through an Operating Cost Survey includes but is not limited to:

- Startup costs
- No-load costs
- Dispatch costs including fuel, operations, and maintenance and emissions costs
- Operating limits including ramp rates
- Time based parameters such as start times
- Fuel sources
- Operating risk and reliability parameters
- Energy limitations

a. Cost Verification of Incremental Energy Offers of Resources Above

Energy Offer Soft Price Cap. When a Market Participant's planned or submitted incremental Energy Offer exceeds the Energy Offer Soft Price Cap, the Market Participant should request the Independent Market Monitor to verify the costs supporting such Offer, and to make any appropriate adjustment to the applicable Reference Levels. To the extent such costs are verified before market clearing, the Offer may be considered in setting price, and verified costs not recovered through the market price shall be eligible for recovery through applicable make-whole payments provided, that, the sum of any adders above cost included in cost-based incremental energy offers above

\$1,000/MWh shall not exceed \$100/MWh, and make-whole payments shall not include any adders above costs. To the extent such costs are verified after market clearing, the Offer may not be considered in setting prices, but verified costs shall be eligible for recovery through applicable make-whole payments.

- b. Cost Verification of Offers Above Energy Offer Hard Price Cap.** When a Market Participant's planned or submitted incremental Energy Offer exceeds the Energy Offer Hard Price Cap, the Market Participant should request the Independent Market Monitor to verify the costs supporting such Offer, and to make any appropriate adjustment to the applicable Reference Levels.

Whether any such costs exceeding the Energy Offer Hard Price Cap are verified before or after market clearing, the verified costs shall be eligible for recovery through applicable make-whole payments provided, that, the sum of any adders above cost included in cost-based incremental energy offers above \$1,000/MWh shall not exceed \$100/MWh, and make-whole payments shall not include any adders above costs.

- c. Consultation and Dispute Process for Reference Level Determinations and Cost Verification.**

1. Before the time of market close for submitting an Offer that exceeds posted Reference Levels and the Energy Offer Soft Price Cap (including any Offer that also exceeds the Energy Offer Hard Price Cap), a Market Participant should initiate a consultation with the Independent Market Monitor by providing its expected delivered fuel price (\$/MMBtu),

including supporting documentation, through the “Fuel Price Changes” tab of the Independent Market Monitor’s website where Operating Cost Surveys are submitted; or through a successor website for that purpose; or through an e-mail message, phone call or other means of communication, seeking and supporting a Reference Level adjustment and cost verification.

2. The Independent Market Monitor shall verify the expected fuel cost and determine Reference Levels.
3. To the extent warranted, the Independent Market Monitor shall post revised Reference Levels.
4. If a Market Participant’s Offer exceeding \$1,000/MWh clears the market before any Independent Market Monitor verification of incremental energy cost exceeding the offer caps, the Market Participant may file a settlement dispute with the Transmission Provider to claim and support a Revenue Sufficiency Guarantee make-whole payment adjustment.
5. In response to such a settlement dispute, the Independent Market Monitor shall perform an audit of the actual fuel cost incurred by the Market Participant. To the extent warranted by the verification results, the Independent Market Monitor shall calculate a make-whole payment amount based on the minimum of: (i) the original Offer; (ii) the verified actual cost; and (iii) the appropriate adjusted Reference Level, including

the Fuel Cost Uncertainty Adder. The Transmission Provider shall use the verified cost in the determination of Day-Ahead Revenue Sufficiency Guarantee Credits or Real-Time Revenue Sufficiency Guarantee Credits in accordance with the Tariff, provided, that, the sum of any adders above cost included in cost-based incremental energy offers above \$1,000/MWh shall not exceed \$100/MWh, and make-whole payments shall not include any adders above costs.

6. The Independent Market Monitor's final cost verification determinations may be disputed by a Market Participant with the Transmission Provider pursuant to Attachment HH of the Tariff.

d. Cost Verification of Adjusted Energy Offers of Fast Start Resources

Exceeding Energy Offer Soft Price Cap. The Transmission Provider will verify the Fast Start Resource All-In Energy Offers by comparing the Fast Start Resource All-In Energy Offers with the Fast Start Resource All-In Reference Levels using the Reference Level components, adjusted as appropriate, provided by the IMM.

e. Cost Verification of Adjusted Energy Offers of Emergency Operations

Resources Exceeding Energy Offer Soft Price Cap. The Transmission Provider will verify the Emergency Operations Resource All-In Energy Offers by comparing the Emergency Operations Resource All-In Energy Offers with the Emergency Operations Resource All-In Reference Levels using the Reference Level components, adjusted as appropriate, provided by the IMM.

- b. If sufficient data does not exist to calculate a Reference Level on the basis of the first method, and the second is not applicable or an attempt to determine a Reference Level in consultation with a Market Participant has not been successful, the IMM shall determine a Reference Level on the basis of:
 - i. The IMM's estimate of the costs of a Generation Resource or technical characteristics of a Generation Resource for physical Offer parameters, taking into account available operating costs data, appropriate input from the Market Participant, and the best information available to the IMM; or
 - ii. The mean of the LMP or applicable MCP at the unit's location during the lowest-priced twenty-five percent (25%) of the hours that the unit was dispatched or scheduled for Operating Reserve over the previous ninety (90) days for similar hours or Load levels, adjusted for changes in fuel prices; or
 - iii. An appropriate average of competitive Offers of one (1) or more similar Generation Resources; or
 - iv. If values calculated using the methods of subsection a.iii above, or subsection b.i or b.ii as applicable, plus the Fuel Cost Uncertainty Adder, exceed \$1,000 per MWh for portions of the incremental operating cost, then the Reference Level will be set using the methods from subsection a.iii or b.i or b.ii for those portions of the incremental operating cost curve plus the Fuel Cost Uncertainty Adder and will prevail over the results from the methods under subsections a.i and a.ii.
- c. Reference Levels for the Energy Offers of a Generation Resource may vary over the output range of the Generation Resource. Reference Levels may be shifted to recognize

ambient temperature conditions or seasonal factors based on input provided to the IMM by the Market Participant.

- d. Initial Reference Levels for ZRC Offers will be set at \$0/MW-day.
- e. Facility-specific Reference Level may be established for Planning Resources (except for Demand Resources, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as Load Modifying Resources, Energy Efficiency Resources, Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability, or External Resources) if a Market Participant provides documentation of Going-Forward Costs of keeping a Planning Resource in operation or Going-Forward Costs for returning a Planning Resource from a Suspend status.
 - i. For purposes of this section, “Going-Forward Costs” shall mean either:
 - (a) the seasonal costs, as described in Section 64.1.4.f.iii below, of supplying Planning Resources that could be avoided if a supplier otherwise capable of supplying Planning Resources were either (1) to cease supplying Planning Resources and Energy for a period of one Season or more while retaining the ability to re-enter such markets, or (2) to retire permanently from supplying Planning Resources and Energy; or
 - (b) the net opportunity costs of foregone sales outside of MISO, net of costs that would have been incurred as a result of the foregone sale if it had taken place. To allow the Independent Market Monitor to verify the opportunity costs of foregone sales outside of MISO, a Market Participant must provide the Independent Market

Monitor with documentation demonstrating the availability of a specific external opportunity, including any counter-party, as well as a demonstration of adequate transmission service. The IMM shall respect the limits of such an external opportunity, such as the amount of available transmission service.

- ii. Beginning with the 2017/2018 Planning Year, the Transmission Provider and the IMM shall determine the default technology-specific avoidable costs for each Season and post them on the Transmission Provider's website by no later than 59 days prior to the deadline for offers to sell Planning Resources in the Planning Resource Auction. The establishment of default technology-specific avoidable costs does not preclude a Market Participant from using facility-specific avoidable costs. To determine the applicable technology-specific avoidable costs for a Season, the IMM shall use the values in the table below, updated to the applicable Planning Year by using the Consumer Price Index (Series ID CUUR0000SA0L1E or a similar successor). The default technology-specific avoidable costs shall be expressed in dollar values for the applicable Planning Year.

Technology Type	Suspension Avoidable Cost (\$/MW-Day) ICAP Basis	Retirement Avoidable Cost (\$/MW-Day) ICAP Basis	Year Dollars
Combustion Turbine – Industrial Frame	\$8.84	\$13.60	2017
Coal Fired	\$61.03	\$93.89	2017
Combined Cycle	\$21.68	\$33.36	2017
Combustion Turbine – Aero Derivative	\$27.03	\$41.58	2019
Diesel Piston	\$58.29	\$89.68	2019
Hydro	\$36.48	\$56.12	2017
Oil and Gas Steam	\$40.92	\$62.95	2017

Pumped Storage	\$39.18	\$60.27	2017
Wind	\$43.67	\$67.19	2019
Nuclear Single-Unit Site	\$188.41	\$538.31	2020
Nuclear Multi-Unit Site	\$120.65	\$344.72	2020
Solar	\$24.87	\$38.26	2017
Battery Storage	\$21.39	\$32.90	2019

To determine the default technology specific avoidable costs, the IMM shall apply the index series ending with the most recently available at the time of the calculation and starting with the value of the same month and in the year of the “Year Dollars” shown in the table above. In the event that the start of the applicable Planning Year is more than six months after the index date of the most recently available index at the time of the calculation, additional whole years of escalation will be applied based on the ten-year average index change. Additional years forward trigger additional escalation in the same fashion.

The values in the table above reflect an Installed Capacity (ICAP) basis. The IMM will adjust these values unit by unit to a Seasonal Accredited Capacity basis as Market Participants elect to use these default avoidable costs.

The values in the table above will be reviewed and updated, if necessary, by the Transmission Provider and the IMM in the Transmission Provider’s stakeholder process no less frequently than every three Planning Years beginning with the 2017/2018 Planning Year.

- iii. The Going-Forward Costs of a Planning Resource (excluding Demand Resources, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as Load Modifying Resources, Energy Efficiency Resources,

Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability or External Resources) shall be calculated by determining the costs that can be avoided by the suspension or retirement or seasonal operation of the Planning Resource. Thus, Going-Forward Costs are equal to the costs that will be borne by a Planning Resource supplier by either maintaining in, or returning a Planning Resource to, commercial operation for a specific Season of a Planning Year minus the costs that would be borne by such supplier resulting from retiring, suspending, or keeping a Planning Resource in suspension.

$$\text{Going-Forward Costs} = \text{Case 1} - \text{Case 2}$$

Where:

Case 1 = Costs incurred to continue operating or return a Planning Resource from suspension or seasonal shutdown, as applicable, and then retiring or suspending the Planning Resource at the end of the Season, as applicable

Case 2 = Costs incurred to retire, suspend, or keep a Planning Resource in suspension or seasonal shutdown at the beginning of the Season, as applicable

- a. Each case should be comprised of costs from the following categories:
 1. Operations and Maintenance Labor (OML): the labor expenses related directly to operations and maintenance of the Planning Resource. The categories of expenses included in OML are those incurred for: (a) on-

site based labor engaged in operations and maintenance activities; (b) off-site based labor engaged in on-site operations and maintenance activities directly related to the generating unit; and (c) off-site based labor engaged in off-site operations and maintenance activities directly related to generating unit equipment removed from the generating unit site.

2. Administrative Expenses (AE): the administrative expenses related directly to the Planning Resource. The categories of expenses in AE include but are not limited to those incurred for: (a) employee expenses (except employee expenses included in OML); (b) environmental fees; (c) safety and operator training; (d) office supplies; (e) communications; and (f) annual plant test, inspection and analysis.
3. Fuel Availability Expenses (FAE): the operating expenses related directly to fuel availability and delivery for the Planning Resource that are not normally included for recovery in energy and ancillary services market offers. The categories of expenses in FAE include but are not limited to those incurred for: (a) fuel transportation; (b) natural gas storage costs; (c) costs of gas balancing agreements; and (d) costs of gas park and loan services.
4. Maintenance Expenses (ME): the maintenance expenses (other than expenses included in OML) related directly to the Planning Resource.

The categories of expenses in ME include, but are not limited to, those incurred for: (a) chemical and materials consumed during maintenance of the generating unit; and (b) rented maintenance equipment used to maintain the generating unit.

5. Operating Expenses (OE): the operating expenses related directly to the Planning Resource. The categories of expenses in OE include, but are not limited to, those incurred for: (a) water treatment chemicals and lubricants; (b) water, gas, and electric service (not for power generation); and (c) waste water treatment.
6. Taxes, Fees and Insurance (TFI): the tax, fees, and insurance expenses related directly to the Planning Resource. The categories of expenses in TFI include but are not limited to those incurred for: (a) insurance, (b) permits and licensing fees, (c) site security and utilities for maintaining security at the site; and (d) property taxes.
7. Corporate Level Expenses (CLE): the corporate level expenses directly related to the Planning Resource. Corporate level expenses shall include only such expenses that are directly linked to providing tangible services required for the operation or maintenance of the Planning Resource, to the extent that retirement or suspension results in a cost reduction rather than a reallocation. The categories of expenses included in CLE are those incurred for: (a) legal services, (b) environmental reporting; and (c) procurement expenses.

8. Capital Costs (CC): mandatory capital expenditures necessary to comply with federal or state environmental, safety or reliability requirements that must be met in order to supply Planning Resources. The categories of expenses that may be included in CC are those incurred for: (a) engineering, (b) procurement (c) construction and (d) cancellation fees.

- b. The Going-Forward Costs of a Planning Resource (excluding Demand Resources, Behind the Meter Generation Resources less than or equal to ten (10) MW GVTC that are registered as Load Modifying Resources, Energy Efficiency Resources, Distributed Energy Aggregated Resources with less than or equal to ten (10) MW of demonstrated injection capability, or External Resources) shall be determined by the IMM upon the request of the Market Participant responsible for the Planning Resource, provided such request is made not later than forty-five (45) days prior to the deadline for offers to sell Planning Resources in the Planning Resource Auction, and provided such request is supported by a submission showing the supplier's relevant costs in accordance with specifications provided by the IMM.
- c. The submission supporting the request for Going-Forward Costs must meet the following requirements.

1. Such request must indicate if the Going-Forward Cost is to be based upon suspension, retirement, seasonal operation or net opportunity cost of foregone sales.
2. For requests based on seasonal operation suspension or retirement, the following three sets of time-series cost data is required:
 - i. a minimum of two years of historic costs related to the Planning Resource, on either a monthly or yearly granularity. The historic costs are to include the same items that are provided in the below Operating Forecast;
 - ii. a forecast of cost incurred for the Planning Resource to be in service for the relevant Season(s) of the Planning Year (Operating Forecast). This forecast is to start on the date that the PRA results are due to be posted and continue with a monthly granularity during the applicable Season(s) for at least 24 months. After the applicable Season, the remainder of the 24 months should reflect the anticipated operations of the Planning Resource in the absence of capacity revenues. Typically, the Operating Forecast would show the costs of proceeding with retiring or suspending the resource as applicable at the conclusion of the Season but it may show suspensions for just select Seasons of the year; and

- iii. a forecast of the cost incurred to retire, suspend, or keep a Planning Resource in suspension effective the beginning of the relevant Season of the Planning Year, as applicable. This forecast is to have the same items, granularity and time span as the Operating Forecast. After the applicable Season, the remainder of the 24 months should reflect the anticipated operations of the Planning Resource in the absence of capacity revenues. Typically, the Operating Forecast would show the costs of proceeding with retiring or suspending the resource as applicable at the conclusion of the Season but it may show suspensions for just select Seasons of the year.
3. The Market Participant has the option of using the default technology specific avoidable costs in place of the non-capital portion of the avoidable costs and should indicate such election to the IMM upon submission of the Market Participant's request. If this option is elected, the Market Participant may only supply the capital costs in the above three sets of data.
4. Market Participants may not include costs that are normally included for recovery in energy and ancillary services offers (fuel and short-term variable O&M). Costs are to be on a cash basis rather than an amortization schedule and should not include non-cash costs such as depreciation.

5. The costs provided by Market Participants in each forecast are to be required and consistent with the seasonal operation, suspension or retirement schedule applicable to the case.
 6. Market Participants must provide sufficient detail to validate the costs and to differentiate between fixed and variable costs. The detail is to include the number of personnel in the various segments of staffing expenses.
 7. Market Participants must provide descriptions of the costs items and why they are needed to support the cases. Costs are to be justified by the supplier based on actual data from the historic costs or on reasonable projections for the Season of the Planning Year supported by executed contracts, published tariffs, or other data sufficient to demonstrate with reasonable certainty the level of costs that have been or shall be incurred for such purpose.
- d. A Market Participant shall request an updated determination of the Going-Forward Costs not less often than annually, in the absence of which request the Capacity supplier's offer cap shall revert to the Reference Level. An updated determination of Going-Forward Costs may be undertaken by the ISO at any time on its own initiative after consulting with the Market Participant. Any redetermination of a Capacity supplier's Going-Forward Costs shall conform to the consultation and determination schedule specified in this paragraph. The costs that a Capacity supplier

would avoid as a result of retiring or of seasonal operation should only be included in its Going-Forward Costs if the owner or operator of that facility actually plans to retire it or to shutdown for one or more Seasons because the Capacity revenues it receives are not sufficient to cover those costs. A Market Participant that requests a facility-specific Reference Level utilizing retirement-based avoidable costs (default or facility-specific) must submit an affidavit signed by an authorized officer of the Market Participant attesting that, if the resource does not clear the applicable Planning Resource Auction, the Market Participant will submit an Attachment Y Notice and provide notification to the Transmission Provider to convert to a Retire status for the resource effective prior to the beginning of the following Planning Year (i.e., no later than May 31 of the year after the Planning Resource Auction results are posted).

- iv. The IMM shall set the facility-specific Planning Resource Reference Level equal to the Going Forward Costs per MW-Day (utilizing information provided to the IMM by the Market Participant and/or the default technology-specific avoidable cost) less the annual seasonal net revenues the Generation Resource would have received from the Transmission Provider's Energy and Ancillary Services Markets. The net revenues shall be calculated by the IMM to equal the revenues paid by the Transmission Provider over a recent past 24 month period during the relevant Season for Energy and Ancillary Services minus the Reference Levels for the corresponding services times the quantities of the services sold divided by

the product of the days in the 24 month period during the relevant Season times the Seasonal Accredited Capacity quantity (MW) associated with the Electric Facility or Distributed Energy Aggregated Resource. In the event that a Generation Resource's capability or participation in the market over a recent past 24-month period is not representative of the upcoming Planning Year, the IMM will estimate net revenue based on either a more representative time period for that Resource or based on other units with similar operating characteristics.

- v. If the requirements in Section 64.1.4.f.iii are met, the IMM shall determine the level of the facility-specific Planning Resource Reference Level not later than 5 days prior to the deadline for submitting offers to sell Planning Resources in the Planning Resource Auction.
- f. The IMM will make available to the Market Participant the Reference Levels applicable to that Participant's Offers upon request. This shall include supplying facility-specific Planning Resource Reference Level to the applicable Market Participants not later than five (5) days prior to the deadline for submitting ZRC Offers under the Planning Resource Auction.
- g. Upon request by a Market Participant or at the initiative of the IMM, the IMM shall consult with a Market Participant with respect to the Reference Levels determined for that Market Participant. If cost data or other information submitted by a Market Participant indicates to the satisfaction of the IMM that the Reference Levels for that Market Participant should be changed, revised Reference Levels shall be determined, communicated to the Market Participant, and implemented, as soon as practicable. The

IMM shall provide a written explanation of its determination to the Transmission
Provider, and to the Market Participant upon request.

MISO	64.2
FERC Electric Tariff	Price Effects or Changes in Revenue Sufficiency Guarantee Cr
MODULES	30.0.0

Price Effects or Changes in Revenue Sufficiency Guarantee Credits

- a. In order to avoid unnecessary intervention in the Markets and Services administered by the Transmission Provider, Mitigation Measures shall not be imposed unless conduct identified as specified above (i) causes a substantial change in one or more prices in the Markets and Services administered by the Transmission Provider, or (ii) substantially increases Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credits to Market Participants in the Markets and Services administered by the Transmission Provider.
- b. The thresholds to determine a substantial price effect in a Broad Constrained Area shall be a change of 200 percent or \$100 per MWh, whichever is lower in absolute terms, in the LMP at any location, or of any other price in any Market administered by the Transmission Provider.
- c. The thresholds to determine a substantial effect on LMPs in a Narrow Constrained Area or a Dynamic Narrow Constrained Area in Constrained Hours (as defined in Section 64.1.2.c) shall be: the threshold for a Narrow Constrained Area determined in accordance with the formula specified in Section 64.1.2.c.i.(a) above and the threshold for a Dynamic Narrow Constrained Area determined in accordance with the formula specified in Section 64.1.2.c.i.(b) above, respectively. When a Binding Transmission Constraint simultaneously defines both a Narrow Constrained Area and a Dynamic Narrow Constrained Area, the applicable impact thresholds will be the lower of the two thresholds determined under sections 64.1.2.c.i.a. and 64.1.2.c.i.b.
- d. The threshold to determine a substantial effect on Market Clearing Prices shall be \$10 per MW per Hour for Operating Reserves and \$10 per MW per Hour for Short-Term Reserve.

- e. The threshold to determine a substantial effect on Auction Clearing Prices for Planning Resources shall be an increase in the Auction Clearing Price equal to ten (10) percent of the CONE value divided by the number of days in the Planning Year. In Local Resource Zones where import constraints bind, the threshold to determine a substantial effect on Auction Clearing Prices for Planning Resources shall be an increase in the Auction Clearing Price equal to \$0/MW-day.
- f. The threshold to determine a substantial effect on Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credits paid to Resources committed in Broad Constrained Areas, Narrow Constrained Areas, or Dynamic Narrow Constrained Areas or committed for Voltage and Local Reliability, shall be \$0 per MW per Hour.

When it has the capability to do so, the IMM shall determine the effect on prices of questioned conduct through the use of sensitivity analyses performed using the Transmission Provider's market models, and such other computer modeling or analytic methods as the IMM shall deem appropriate. Pending development of the capability to use the market models, the IMM shall determine the effect on prices of questioned conduct using the best available data and such models and methods, as it shall deem appropriate.

The Transmission Provider shall make a filing under Section 205 of the FPA with the Commission seeking authorization to apply an appropriate Mitigation Measure to conduct that departs significantly from the conduct that would be expected under competitive market conditions but does not rise to the thresholds specified in Sections 64.1.1 through 64.1.3 above, if that conduct has a significant effect on market prices or Day-Ahead or Real-Time Revenue Sufficiency Guarantee Payments Credits.

- a. If, through the application of an appropriate index or screen or other monitoring of market conditions, conduct is identified that (i) exceeds an applicable threshold, and (ii) has a substantial effect, as specified above, on one (1) or more prices or Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credits in the Energy and Operating Reserve Markets, Planning Resource Auction, or any other market administered by the Transmission Provider, the IMM shall, as soon as practicable and if warranted in light of the information available to the IMM, contact the Market Participant engaging in the identified conduct to request an explanation of the conduct. If a Market Participant anticipates submitting Offers in Markets and Services administered by the Transmission Provider that will exceed the thresholds specified in Section 64.1 above for identifying conduct inconsistent with competition, the Market Participant may contact the IMM to provide an explanation of any legitimate basis for any such changes in the Market Participant's Offers.
- b. If a Market Participant's explanation of the reasons for its Offers indicates to the satisfaction of the IMM that the questioned conduct is consistent with competitive behavior, no further action will be taken.
- c. Upon request, the IMM shall also consult with a Market Participant with respect to the information and analysis used to determine Reference Levels under Section 64.1.4 for that Market Participant. If cost data or other information submitted by a Market Participant indicates to the satisfaction of the IMM that the Reference Levels for that Market Participant should be changed, revised Reference Levels shall be determined, communicated to the Market Participant, and implemented, as soon as practicable by the

Transmission Provider. The IMM shall provide a written explanation of its determination to the Transmission Provider, and to the Market Participant upon request.

- d. A Market Participant for a Resource that does not satisfy any of the conditions to be designated an AME Resource as further described in Section 39.2.5.b.xxvi, may request consultation with the IMM regarding whether such designation is appropriate.

If conduct is detected by the IMM or the Transmission Provider that meets the criteria specified in Section 63.3, the appropriate Mitigation Measure described in this Section shall be applied.

The conduct specified in Sections 64.1.1 to 64.1.3 shall be remedied by the Transmission Provider's prospective application of a Default Offer measure as described in Section 65.2, below. If an entity engages in certain types of physical withholding or uneconomic production that cannot feasibly be remedied by the prospective application of a Default Offer, or if otherwise appropriate to deter either the physical withholding or uneconomic production, the Transmission Provider shall determine the appropriate sanction in accordance with Section 65.3 below.

MISO
FERC Electric Tariff
MODULES

65.2
Default Offer
30.0.0

A Default Offer shall be designed to cause a Market Participant to Offer as if it faced workable competition during a period when the Market Participant: (i) does not face workable competition; and, (ii) has responded to such condition by engaging in the physical or economic withholding of, or uneconomic production, from a Generation or Planning Resource. In designing Default Offers, the IMM and the Transmission Provider shall seek to avoid causing a Resource to Offer below its marginal cost.

- a. If the criteria contained in Section 64 are met, the Transmission Provider shall prospectively substitute a Default Offer for an Offer submitted for a Generation Resource, Distributed Energy Aggregated Resource, or Planning Resource. The Default Offer shall establish a mitigated value for one or more components of the Offer for a Generation Resource, Distributed Energy Aggregated Resource or Planning Resource equal to the Reference Level for that component of the Generation or Planning Resource's Offer determined as specified in Section 64.1.4.
- b. A Default Offer shall only be imposed on a Generation Resource or Distributed Energy Aggregated Resource if it is located in a Broad Constrained Area or a Narrow Constrained Area and if there are one or more Binding Transmission Constraints, or binding Post Reserve Deployment Constraints (other than Sub-Regional Power Balance Constraints), or Sub-Regional Power Balance Constraints into the Second Planning Area defining the area; or if a Generation Resource, including any Electric Storage Resource or Distributed Energy Aggregated Resource is located in a Dynamic Narrow Constrained Area and if there are one or more Binding Transmission Constraints defining the area. This limitation shall not apply to the imposition of Default Offers on Planning Resources or resources with VLR Commitments.
- c. To ensure that the Default Offer is only imposed on Resources that substantially affect a BCA constraint, it shall only be applied to Generation Resources or Distributed Energy Aggregated Resources with Constraint Generation Shift Factors that exceed in absolute terms:
 - i. Six percent (6%) for monitored elements at or above 345 KV;

- ii. Four percent (4%) for monitored elements below 345 KV and above 138 KV;
 - iii. Three percent (3%) for monitored elements at or below 138 KV.
- d. A Resource subject to a Default Offer shall be paid the LMP, MCP, Auction Clearing Price, or other market-clearing prices applicable to the services provided from the Resource. Accordingly, a Default Offer shall not limit the price that a Resource may receive unless the Default Offer determines the LMP, MCP, Auction Clearing Price, or other market clearing price applicable to that Resource.
- e. The Transmission Provider shall not use a Default Offer to determine revised market clearing prices for periods prior to the imposition of the Default Offer, except as may be specifically authorized by the Commission.
- f. With respect to both physical and economic withholding, a Mitigation Measure imposed in a Narrow Constrained Area, a Dynamic Narrow Constrained Area, or a Broad Constrained Area in accordance with the conduct thresholds of Sections 64.1.1 and 64.1.2, and the impact thresholds of Section 64.2.1 shall remain in effect for the duration of any hour in which there is an interval for which such mitigation is deemed warranted.
- g. Safety-Net Day-Ahead Mitigation Method:

The Transmission Provider will employ an Automated Mitigation Procedure (“AMP”) to perform the impact test and implement mitigation on the same market day that the conduct occurred. If the AMP becomes unavailable to complete such functions in a timely manner, the following process will be employed:

- i. Resources with Day-Ahead Offers that exceed the conduct thresholds specified in Sections 64.1.1 and 64.1.2 for a given Operating Day in an active NCA, Dynamic NCA, or BCA will be tested for impact.
- ii. If the conduct of these Generation Resources or Distributed Energy Aggregated Resources results in market impacts that exceed the impact thresholds specified in Section 64.2.1 for a given Operating Day, all Resources owned by the same supplier in the same NCA, Dynamic NCA, or active BCA will be considered for mitigation in the Day-Ahead Energy and Operating Reserve Market for the following day.
- iii. When the Day-Ahead Energy and Operating Reserve Market is run for the following day, if a Generation Resource or Distributed Energy Aggregated Resource identified in (ii) submits a Day-Ahead Generation Offer that exceeds its conduct threshold, the Transmission Provider shall prospectively substitute a Default Offer for that Offer submitted by the Generation Resource.
- iv. If the same supplier submits any Day-Ahead Offers that exceed both the conduct thresholds and impact thresholds for the same NCA, Dynamic NCA, or active BCA within the next 90 days, the supplier's Generation Resources in that NCA, Dynamic NCA, or active BCA will be considered for mitigation in the Day-Ahead Energy and Operating Reserve Market for the following seven (7) days.
 - a. In any of these seven (7) days, if a Generation Resource identified in (iv) submits Day-Ahead Offer(s) that exceeds the conduct threshold, the

Transmission Provider shall prospectively substitute a Default Offer for such Offer submitted for that Generation Resource.

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65.3
Sanctions
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- a. If the IMM determines in accordance with the thresholds and other standards specified in this Module D, Part III that: (i) a Market Participant has engaged in physical withholding, or (ii) a Market Participant has engaged in uneconomic production; or (iii) a Load Serving Entity is subject to a Penalty Level payment in accordance with Section 65.4 below; or (iv) a Transmission Owner has physically withheld of transmission that causes transmission congestion, including the operation of network control devices in a manner that was not economic, the Transmission Provider shall determine the appropriate sanction in accordance with this Section 65.3.
- b. A Market Participant that is found to have engaged in the conduct described in Section 65.3.1.a above, shall be subject to a penalty charge only if the conduct has caused a substantial increase in one or more prices or Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credits in the Markets and Services administered by the Transmission Provider. Generation Resources that are not designated to satisfy RAR shall not be subject to penalty charges for physical withholding from the Day-Ahead Energy and Operating Reserve Market or Reliability Assessment Commitment process during the Real-Time Energy and Operating Reserve Market.
- c. This Section 65.3 shall apply to a Generation Resource or Distributed Energy Aggregated Resource only if it is located in a Broad Constrained Area or a Narrow Constrained Area and if there are one or more Binding Transmission Constraints, or binding Post Reserve Deployment Constraints (other than Sub-Regional Power Balance Constraints), or Sub-Regional Power Balance Constraints into the Second Planning Area that give rise to locational market power in the area; or to a Generation Resource, including any Electric

Storage Resource or Distributed Energy Aggregated Resource, located in a Dynamic Narrow Constrained Area and if there are one or more Binding Transmission Constraints that give rise to locational market power in the area. Section 65.3 shall apply to all Planning Resources, regardless of location.

- d. The formulas used to determine the penalty charges in Sections 65.3.2 and 65.3.3 below shall constitute the maximum penalty charges that may be assessed.

- a. Penalty charges shall be determined by assessing a penalty up to the product of a Total Base Penalty Charge, as specified below, times the appropriate multiplier specified in Section 65.3.3:

$$\text{Base Penalty Charge} = \text{Capability (MW) Affected} * \text{Penalty Price} * \text{Penalty Interval during Penalty Period}$$

- b. Total Base Penalty Charge equal the sum of the Base Penalty Charges over all the Penalty Intervals in the Penalty Period.
- c. For purposes of determining a Base Penalty Charge, the term “Penalty Period” shall mean: (i) for a Day-Ahead Energy and Operating Reserve Market, the hours in which conduct occurred; (ii) for a Real-Time Energy and Operating Reserve Market, the Hours in the calendar Day commencing in the Hour in which the conduct first occurred and concluding at the Hour in which the conduct was determined to have ceased; (iii) for Market Participant Bids to serve Load, the hours giving rise to Penalty Level payments; and (iv) for the Planning Resource Auction, the Season of the Planning Year in which the capacity was deemed to be withheld by a Market Participant from the auction.
- d. For purposes of determining a Base Penalty Charge, the term “Penalty Price” shall mean: (i) for conduct involving a Generation Resource that affects the outcome of the Day-Ahead and Operating Reserve Market, or the Real-Time Energy and Operating Reserve Market, the absolute value of the LMP or MCP at the Commercial Pricing Node most affected by the conduct; (ii) for an entity withholding equipment used for transmission of electricity, the shadow price on the transmission constraint most affected by the withholding; and (iii) for conduct affecting the outcomes of the Planning Resource Auction, the Auction Clearing Price for the applicable Season of the Planning Year.

- e. For purposes of determining a Base Penalty Charge, the term “Capability (MW) Affected” shall include (i) the quantity of the Generation Resources physically withheld or uneconomically produced, (ii) the transmission capability reduced by a Transmission Owner, (iii) the Load under-scheduled by a Market Participant for an LSE, or (iv) the Planning Resources physically withheld. It shall not include economically withheld resources.
- f. For the purposes of determining a Base Penalty Charge, the term “Penalty Interval” shall mean the applicable number of time increments corresponding to the Penalty Price and Capacity (MW) Affected. This would typically be a portion of an Hour for conduct affecting LMPs and MCPs, and the number of days in the Planning Year in the Planning Resource Auction for conduct affecting the Auction Clearing Price.
- g. Real-Time LMPs, Operating Reserve MCPs, Short-Term Reserve MCPs, Up Ramp Capability MCPs, and Down Ramp Capability MCPs shall not be revised as a result of the imposition of a penalty charge as specified in this Section, except as may be specifically authorized by the Commission.

The Total Base Penalty Charge specified in Section 65.3.2 shall be subject to the following multipliers:

- a. For the first instance of a type of conduct by a Market Participant meeting the standards for mitigation, the multiplier shall be one (1).
- b. For the second instance within eighteen (18) months of substantially similar conduct regarding the same product (e.g., Energy, regardless of whether it is in the Day-Ahead Energy and Operating Reserve Market or Real-Time Energy and Operating Reserve Market) by a Market Participant or its Affiliates, the multiplier shall be two (2).
- c. For the third instance or any additional instance within eighteen (18) months of substantially similar conduct regarding the same product (e.g., Energy, regardless of whether it is in the Day-Ahead Energy and Operating Reserve Market or Real-Time Energy and Operating Reserve Market) by a Market Participant or its Affiliates, the multiplier shall be three (3).

Except as specified in Section 65.4.3, amounts collected as a result of the imposition of penalty charges shall be credited against costs collectable under Schedule 17 of the Tariff.

The Transmission Provider shall remove eligibility for Day-Ahead Revenue Sufficiency Guarantee Credit, Real-Time Revenue Sufficiency Guarantee Credit, Day-Ahead Margin Assurance Payment, Real-Time Offer Revenue Sufficiency Guarantee Payment, and Undeployed Regulating Mileage Revenue Sufficiency Guarantee of any Resource that is determined to have engaged in conduct that has the effect of manipulating or gaming any of the make-whole payment mechanisms in a manner that extracts undue payments. Such previously extracted undue payments shall be retrieved and resettled by the Transmission Provider in the resettlement provision of the Tariff. Such manipulation or gaming shall be determined in accordance with the criteria in Section 64 of the Tariff.

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65.4
Load Measures
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As initially implemented, the Transmission Provider market rules allow Market Participants to choose to purchase power to serve Load in either the Day-Ahead Energy and Operating Reserve Market or in the Real-Time Energy and Operating Reserve Market. As a result of this and other design features, certain bidding practices may cause LMPs in the Day-Ahead Energy and Operating Reserve Market not to achieve the degree of convergence with the LMPs in the Real-Time Energy and Operating Reserve Market that would be expected in a workably competitive market.

- a. LMPs in the Day-Ahead Energy and Operating Reserve Market shall be monitored to determine whether there is a persistent hourly deviation between them in any location that would not be expected in a workably competitive market.
- b. The IMM shall compute the average hourly deviation between Energy and Operating Reserve Markets LMPs, measured as: $(LMP_{\text{real time}} / LMP_{\text{day ahead}}) - 1$. The average hourly deviation shall be computed over a rolling four week period or such other period determined by the IMM to be appropriate to achieve the purpose of this Mitigation Measure.
- c. The IMM shall also estimate and monitor the average percentage of each Market Participant's Bid to serve Load scheduled in the Day-Ahead Energy and Operating Reserve Market, using a methodology intended to identify a sustained pattern of under-bidding as accurately as deemed practicable. The average percentage will be computed over a specified time period determined by the IMM to be appropriate to achieve the purpose of this Mitigation Measure.
- d. If the IMM determines that: (i) The average hourly deviation computed over a rolling four week period is greater than ten percent (10%) or less than negative ten percent (10%), (ii) one or more Market Participants on behalf of one or more LSEs have been purchasing more than ten percent (10%) of their Loads with purchases in the Real-Time Energy and Operating Reserve Market, (iii) this practice has contributed to the divergence of LMP between the two markets, as defined in 65.4.2.d.i above, and (iv) this practice has created operational problems which shall be determined by the IMM in concert with the Transmission Provider, then the following Mitigation Measure may be

imposed. A description of any such problem will be posted on the Transmission Provider's website. Any such measure shall be rescinded upon a determination by the IMM that any one or more of the foregoing conditions is not met.

- a. A Market Participant that makes purchases on behalf of a Load Serving Entity shall be required to purchase or schedule all of its expected power requirements in the Day-Ahead Energy and Operating Reserve Market. A Market Participant subject to this requirement may purchase up to five percent (5%) of the actual Load requirements of the LSE on whose behalf the Market Participant is making such purchases (the “Allowance Level”) in the Real-Time Energy and Operating Reserve Market without penalty, as determined by the IMM to be appropriate in recognition of the uncertainty of load forecasting.
- b. Effective with the imposition of the foregoing requirement, all purchases in the Real-Time Energy and Operating Reserve Market in excess of this Allowance Level (the “Penalty Level”) shall be settled at a specified premium over the applicable LMP. Revenues from such premiums, if any, shall be rebated on a *pro rata* basis to the Market Participants that scheduled Energy for delivery in the Day-Ahead Energy and Operating Reserve Market for the Day in which the revenues were collected.
- c. The Allowance Level and the Penalty Level shall be established at levels deemed effective and appropriate to mitigate the market effects described in this Section 65.4. In addition, the Penalty Level payments shall be waived in any hour in which the Allowance Level is exceeded because of unexpected system conditions.

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65.5
Virtual Transaction Measures
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The provisions of this Section 65.5 specify the market monitoring and Mitigation Measures applicable to Virtual Transactions.

- a. LMPs in the Energy and Operating Reserve Market shall be monitored to determine whether there is a persistent hourly deviation between them that would not be expected in a workably competitive market. The IMM shall compute the average hourly deviation between LMPs in the Energy and Operating Reserve Market, measured as: $(LMP_{\text{real time}} / LMP_{\text{day ahead}}) - 1$. The average hourly deviation shall be computed over a rolling four-week period or such other period determined to be appropriate to achieve the purpose of this Mitigation Measure.
- b. If the IMM determines that (i) the average hourly deviation computed over a rolling four week period is greater than ten percent (10%) or less than negative ten percent (10%), and (ii) the Virtual Transaction practices of one or more Market Participants cause this divergence of LMPs between the two (2) markets, then the following Mitigation Measure shall be imposed by the Transmission Provider. Any such measure shall be rescinded upon a determination by the IMM that the foregoing conditions are not met.

- a. If the IMM determines that the conditions specified in Section 65.5.2 exist, the Transmission Provider shall limit the hourly quantities of Virtual Offers or Bids for supply or Load that may be offered in a location by a Market Participant. The Transmission Provider will restrict the Market Participant for a period of three (3) months from submitting any virtual transactions at the same or similar Commercial Pricing Nodes to the Commercial Pricing Nodes where it had submitted the Virtual Transactions that contributed to the unwarranted divergence between LMPs in the Energy and Operating Reserve Market.
- b. As part of the foregoing determination, the IMM shall request explanations of the relevant Virtual Transaction practices from any Market Participant submitting such Bids or Offers. Prior to imposing a Virtual Bid or Offer quantity limitation as specified above, the Transmission Provider shall notify the affected Market Participant of the limitation.

Any Mitigation Measure imposed as specified above shall expire not later than six (6) months after the occurrence of the conduct giving rise to the measure, or at such earlier time as may be specified by the Transmission Provider.

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65.7.3
[RESERVED]
31.0.0

- a. As a component of the IMM's annual report as required in Module D, Part II to the Tariff, the IMM shall review and report on:
 - i. The extent to which mitigation has taken place, including the number of Generation Resources mitigated, and the number of MWh mitigated. The foregoing results should be reported by location as appropriate under the Transmission Provider's information policies.
 - ii. The economic incentives for maintaining existing generation, investing in new generation or transmission facilities, reserve facilities, or developing additional demand response in various locations within the Transmission Provider Region.
- b. If the IMM determines that inappropriate application of the Mitigation Measures causes an inability of existing or new Distributed Energy Aggregated Resources, Generation Resources, including Electric Storage Resources, to operate profitably, or an understatement of Energy and other product prices during shortage conditions, the IMM shall recommend changes to the Mitigation Measures to prevent such inappropriate effects in future periods.

If a Default Offer is substituted for a Market Participant's as-submitted Offer and it is subsequently determined that the Offer should not have been mitigated, the Market Participant shall be compensated for each MW for which the Default Offer was substituted, at the higher of the applicable MCP or its full, as-submitted Offer for all intervals during which it was improperly mitigated, including any applicable Day-Ahead or Real-Time Revenue Sufficiency Guarantee Credit. This Section 67 shall not restrict the right of any party to make such filing with the Commission as may otherwise be appropriate under the Federal Power Act.