

# **ISO MARKET MONITORING & INFORMATION PROTOCOL**

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**ISO Market Monitoring and  
Information Protocol (MMIP)**

**MMIP 1 OBJECTIVES, DEFINITIONS, AND SCOPE**

**MMIP 1.1 Objectives**

This Protocol (MMIP) sets forth the workplan and, where applicable, the rules under which the ISO Department of Market Analysis and ISO Market Surveillance Committee will monitor the ISO Markets to identify abuses of market power, to ensure to the extent possible the efficient working of the ISO Markets immediately upon commencement of their operation, and to provide for their protection from abuses of market power in both the short term and the long term, and from other abuses that have the potential to undermine their effective functioning or overall efficiency in accordance with Section 16.3 of the ISO Tariff. Such monitoring activities will be carried out by, among other ISO departments, the ISO Department of Market Analysis and the ISO Market Surveillance Committee to be established and to operate under the terms of this Protocol, as set forth below. These protocols provide a general framework for the operation of the Department of Market Analysis and the Market Surveillance Committee and are not intended to limit the activities or remedies available to these entities or to the ISO as a whole elsewhere in the ISO Tariff or otherwise under law.

**MMIP 1.1.1 Means and Actions**

This Protocol sets forth general means of data collection, analysis, decision-making, and formulation of corrective actions, that will be instituted or undertaken by the ISO Department of Market Analysis and ISO Market Surveillance Committee. It describes implementation mechanisms to be created by the ISO to serve these purposes.

**MMIP 1.1.2 Reporting Requirements**

This Protocol sets forth the information dissemination, publication and reporting activities and other means of providing information that the ISO generally undertakes to meet its reporting requirements to regulatory agencies, Market Participants and others. The goal of the reporting provisions of this Protocol is to adequately inform regulatory agencies, law enforcement agencies, policymakers, Market Participants and others of the state of the ISO Markets, especially their competitiveness and efficiency. This function is designed to facilitate efficient corrective actions to be taken by the appropriate body or bodies when required.

**MMIP 1.2 Definitions**

**MMIP 1.2.1 Master Definitions Supplement**

Any word or expression defined in the Master Definitions Supplement to the ISO Tariff shall have the same meaning where used in this Protocol. References to a Section or Appendix are to a Section or an Appendix of the ISO Tariff. References to MMIP are to this Protocol or to the stated section, paragraph or appendix of this Protocol.

**MMIP 1.2.2 Special Terms for This Protocol**

In this Protocol, the following words and expressions shall have the meanings set opposite them:

**"Department of Market Analysis (DMA)"** means the unit established under MMIP 3.1.

**"Rules of Conduct"** has the same meaning as provided for in the Enforcement Protocol.

**"Market Surveillance Committee (MSC)"** means the committee established under MMIP 5.1.

**"ISO Home Page"** means the ISO internet home page at <http://www.caiso.com> or such other internet address as the ISO shall publish from time to time.

**MMIP 1.2.3 Rules of Interpretation**

**MMIP 1.2.3.1** Unless the context otherwise requires, if the provisions of this Protocol conflict with the ISO Tariff and/or the Enforcement Protocol, the ISO Tariff and the Enforcement Protocol will prevail to the extent of the inconsistency. The provisions of the ISO Tariff have been summarized or repeated in this Protocol only to aid understanding.

**MMIP 1.2.3.2** A reference in this Protocol to a given agreement, ISO Protocol or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made.

**MMIP 1.2.3.3** The captions and headings in this MMIP are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Protocol.

**MMIP 1.2.3.4** This Protocol shall be effective as of January 1, 1998. Any amendment to this Protocol shall be effective as of the date of such amendment, or as of the date such amendment is approved by FERC.

**MMIP 1.3 Scope**

**MMIP 1.3.1 Scope of Application to Parties**

The MMIP applies to:

**MMIP 1.3.1.1** All ISO Market Participants;

**MMIP 1.3.1.2** The ISO;

**MMIP 1.3.1.3** The Market Surveillance Committee.

**MMIP 1.3.2 Liability of ISO**

Any liability of the ISO arising out of or in relation to this Protocol shall be subject to Section 14 of the ISO Tariff as if references to the ISO Tariff were references to this Protocol.

**MMIP 2            PRACTICES SUBJECT TO SCRUTINY**

**MMIP 2.1        Practices Subject to Scrutiny - General**

The Department of Market Analysis shall monitor the activities of  
Market Participants

that affect the operation of the ISO Markets and that provide indications of the phenomena set forth below in this Section 2.1. Where appropriate, it will take such further action as it considers necessary under Section 2.3.

**MMIP 2.1.1 Abuse of Reliability Must-Run Unit Status**

Where Generating Units are determined by the ISO to be Reliability Must-Run Units, circumstances that indicate that such Generating Units are being operated in a manner that will adversely affect the competitive nature and efficient workings of the ISO Markets.



**MMIP 2.1.2 ISO and Other Market Design Flaws**

Design flaws and inefficiencies in the ISO Tariff, ISO Protocols and operational rules and procedures of the ISO, including the potential for problems between the ISO and other independent power markets or exchanges insofar as they affect the ISO Markets.

**MMIP 2.1.3 Market Structure Flaws**

With respect to flaws in the overall structure of the California energy markets that may reveal undue concentrations of market power in Generation or other structural flaws, the Department of Market Analysis shall provide such information or evidence of such flaws and such analysis as it may conduct to the ISO CEO and/or to the ISO Governing Board, subject to due protections of confidential or commercially sensitive information. After due internal consultation, if instructed by any of such ISO institutions or persons, the Department of Market Analysis shall also provide such information or evidence to the Market Surveillance Committee, the appropriate regulatory and antitrust enforcement agency or agencies, subject to due protections of confidential or commercially sensitive information. The Department of Market Analysis shall, at the direction of the ISO CEO and/or the ISO Governing Board, or their designee, provide such other evidence, views, analyses or testimony as may be appropriate or required and as it is reasonably capable of providing to assist the investigations of such agencies.

**MMIP 2.2 Scrutiny of Participant Changes Potentially Affecting Market Structure**

The Department of Market Analysis may undertake the following measures to monitor the special circumstances that may affect the operation of the ISO Markets due to corporate reorganizations including bankruptcies or changes in affiliate relationships and may recommend corrective actions as provided in Section 2.3.

**MMIP 2.2.1 Exercises of Horizontal Market Power**

The Department of Market Analysis may analyze the impact of changes in market structure on the ability of Market Participants to exercise short-term horizontal market power.

**MMIP 2.3 Response Action by ISO**

**MMIP 2.3.1 Corrective Actions**

Where the monitoring activities or any consequent investigations carried out by the Department of Market Analysis pursuant to MMIP 2 and MMIP 4 reveal a significant possibility of the presence of or potential for exercises of market power that would adversely affect the operation of the ISO Markets, or other markets interconnected or interdependent on the ISO Markets, the Department of Market Analysis shall take the appropriate measures under this section and under MMIP 4, 6, and 7 to institute the corrective action most effective and appropriate for the situation or, in the case of markets interconnected to or interdependent on the ISO Markets, the Department of Market Analysis may recommend corrective actions to the appropriate regulatory agencies.

**MMIP 2.3.2 Further Actions**

Where the monitoring activities of or any consequent investigations carried out by the Department of Market Analysis pursuant to MMIP 2.1 and 2.2 reveal that activities or behavior of Market Participants in the ISO Markets have the effect of, or potential for, undermining the efficiency, workability or reliability of the ISO Markets to give or to serve such Market Participants an unfair competitive advantage over other Market Participants, the Department of Market Analysis shall fully investigate and analyze the effect of such activities or behavior and make recommendations to the ISO CEO and the ISO Governing Board for further action by the ISO or, where necessary, by other entities. The ISO may publicize such activities or behavior and its recommendations thereof, in whatever medium it believes most appropriate. The Department of Market Analysis may, where appropriate, make specific recommendations to the ISO CEO and to the ISO Governing Board for amendment to rules and protocols under its control, or for changes to the structure of the ISO Markets, and the Department of Market Analysis may recommend actions, including fines or suspensions, against specific entities in order to deter such activities or behavior.

**MMIP 2.3.3 Adverse Effects of Transition Mechanisms**

Should the monitoring and analysis conducted under MMIP 2.2.3 reveal significant adverse effects of transition mechanisms on competition in or the efficient operation of the ISO Markets, the Department of Market Analysis shall examine and fully assess the efficacy of all possible measures that may be taken by the ISO, in order to prevent or to mitigate such adverse effects. The Department of Market Analysis shall make such recommendations to the CEO of the ISO and to the ISO Governing Board as it considers appropriate for action by the ISO and/or for referral to regulatory or law enforcement agencies. Such proposed measures may include, but shall not be limited to the following:

- MMIP 2.3.3.1** the use of direct bid caps as a mechanism to prevent or mitigate artificially high Market Clearing Prices caused by abuses of market power;
- MMIP 2.3.3.2** the use of contracts for differences for eliminating the incentive for Generators to bid ISO prices to artificially high levels enabled by the presence of market power;
- MMIP 2.3.3.3** calling upon Reliability Must-Run Units to operate; and to modify Reliability Must-Run Contracts;
- MMIP 2.3.3.4** bid floors to prevent or mitigate the possible exercise of below-cost bidding or predatory pricing.

In the event that the ISO Governing Board adopts, and where necessary obtains regulatory approval for, any

measure proposed pursuant to MMIP 2.3.3, the Department of Market Analysis shall monitor the implementation and effect of such measure on the state of the ISO Markets and shall periodically report on them to the CEO and the ISO Governing Board.

**MMIP 3 ISO DEPARTMENT OF MARKET ANALYSIS**

**MMIP 3.1 Establishment**

There shall be established on or before ISO Operations Date within the ISO a Department of Market Analysis that shall be responsible for the ongoing development, implementation, and execution of the ISO Market monitoring and information scheme described in this MMIP and the adherence to its objectives, as set forth in MMIP 1.1.

**MMIP 3.2 Composition**

The Department of Market Analysis shall be adequately staffed by the ISO with full-time ISO staff with the experience and qualifications necessary to fulfill the functions referred to in this MMIP. Such qualifications may include professional training pertinent to and experience in the operation of markets analogous to ISO Markets, in the electric power industry, and in the field of competition and antitrust law, economics and policy. The Department of Market Analysis shall be under the general management of the ISO CEO, provided that the CEO may designate another ISO officer (currently the General Counsel) for day-to-day oversight of the Department.

**MMIP 3.3 Accountability and Responsibilities**

**MMIP 3.3.1 Department of Market Analysis**

The Department of Market Analysis shall report to and be accountable to the ISO CEO and his or her designee on all matters pertaining to policy and other matters that may affect the effectiveness and integrity of the monitoring function referred to in this Protocol, including matters pertaining to market monitoring, information development and dissemination and pertaining to generic or entity-specific investigations, corrective actions or enforcement.

**MMIP 3.3.2 CEO and MSC**

The ISO CEO and the MSC shall each have the independent authority to refer any of the matters referred to in MMIP 3.3.1 to the ISO Governing Board for approval of recommended actions.

**MMIP 3.3.3 Chief Executive Officer (CEO)**

**MMIP 3.3.3.1**

The Department of Market Analysis shall report to and be accountable to the ISO CEO and his or her designee on all matters relating to administration of the Department and the internal resources and organization of the ISO in accordance with MMIP 3.3.3.2.

**MMIP 3.3.3.2** The ISO, through its CEO and Governing Board, shall determine that the Department of Market Analysis has adequate resources and full access to data and the full cooperation of all parts of the ISO organization in developing the database necessary for the effective functioning of the Department of Market Analysis and the fulfillment of its monitoring function.

**MMIP 3.3.4 Regulatory and Antitrust Enforcement Agencies**

Where considered necessary and appropriate, or where so ordered by the regulatory or antitrust agency with jurisdiction over the matter in question, or by a court of competent jurisdiction, the ISO shall refer a matter to the regulatory or antitrust enforcement agency concerned, *e.g.*, in cases of serious abuse requiring expeditious investigation or action by the agency. In all such cases of direct referral, the ISO CEO shall promptly inform the ISO Governing Board and the MSC of the fact of and the content of the referral.

**MMIP 3.3.5 Complaints**

Any Market Participant, or any other interested entity, may at any time submit information to or make a complaint to the Department of Market Analysis concerning any matter that it believes may be relevant to the Department of Market Analysis's monitoring responsibilities. Such submissions or complaints may be made on a confidential basis in which case the Department of Market Analysis shall preserve the confidentiality thereof. The Department of Market Analysis, at its discretion, may request further information from such entity and carry out any investigation that it considers appropriate as to the concern raised. The Department of Market Analysis shall periodically make reports to the ISO CEO and ISO Governing Board on complaints received.

**MMIP 4 SPECIFIC FUNCTIONS OF ISO DEPARTMENT OF MARKET ANALYSIS**

**MMIP 4.1 Information Gathering and Market Monitoring Indices for Evaluation**

**MMIP 4.1.1 Information System**

The Department of Market Analysis shall be responsible for developing an information system and criteria for evaluation that will permit it to effectively monitor the ISO Markets to identify and investigate abuses of that market, whether caused by exercises of market power or by other actions or inactions.

**MMIP 4.1.2 Data Categories**

To develop the information system set forth in MMIP 4.1.1, the Department of Market Analysis shall initially develop, and shall refine on the basis of experience, a detailed catalog of all the categories of data it will have the means of acquiring, and the procedures it will use (including procedures for protecting confidential data) to handle such data.

**MMIP 4.1.3 Catalog of Market Monitoring Indices**

The Department of Market Analysis shall initially develop, and shall refine on the basis of experience, a catalog of the ISO Market monitoring indices that it will use to evaluate the data so collected.

**MMIP 4.2 Evaluation of Information**

**MMIP 4.2.1 Ongoing Evaluation**

The Department of Market Analysis shall evaluate and reevaluate on an ongoing basis the data categories and market monitoring indices that it has developed under MMIP 4.1.2 and 4.1.3, and the information it collects and receives from various other sources, including and in particular the ISO's operation of the ISO Markets. Such ongoing evaluations shall provide the basis for its reporting and publication responsibilities as set forth in this Protocol, for recommendations on proposed changes to the ISO Tariff and ISO Protocols and other potential rules affecting the ISO Markets, and for the development of criteria or standards for the initiation of proposed corrective or enforcement actions. In evaluating such information, the Department of Market Analysis may consult the MSC or such external bodies as may be appropriate.

**MMIP 4.2.2 Submission of Evaluation Results**

The final results of the Department of Market Analysis's ongoing evaluations under MMIP 4.2.1 shall routinely and promptly be submitted to the ISO CEO and to the MSC for comment.

**MMIP 4.3 Review of Rules of Conduct**

The Department of Market Analysis shall review Rules of Conduct for their effectiveness and consistency with its market monitoring activities and standards. The Department of Market Analysis may at that time, and from time to time thereafter based on its experience in monitoring the ISO Markets, propose to the ISO CEO and/or the ISO Governing Board that changes be made in such Rules of Conduct.

**MMIP 4.4 Reports and Recommendations**

**MMIP 4.4.1 ISO CEO and Governing Board**

On the basis of the evaluation conducted under MMIP 4.2 or the review conducted under MMIP 4.3, the Department of Market Analysis shall prepare periodic reports, as required by the ISO CEO, and specific ad hoc reports as appropriate, for the ISO CEO and ISO Governing Board on the state of competition in or the efficiency of the ISO Markets; and on its monitoring activities, the results of its evaluation and review activities, and its development and implementation of recommendations. Where appropriate, the ISO Department of Market Analysis may recommend to the ISO CEO and/or the ISO Governing Board actions to be taken, including the amendment of the ISO Tariff and ISO Protocols and corrective or enforcement action against specific entities. Such reports shall be made not less frequently than quarterly in the case of the ISO CEO and annually in

the case of the ISO Governing Board and shall contain such information and be in such form as specified by such entities. Such reports shall be made public and publicized as specified by such entities except to the extent that they contain confidential or commercially sensitive information or to the extent such entities determine that effective enforcement of the monitoring function dictates otherwise.

**MMIP 4.4.2 Regulatory Agencies**

As required in the ISO Tariff or by the ISO CEO and ISO Governing Board, or as required by the regulatory agency with jurisdiction over the matters in question, the Department of Market Analysis shall prepare reports to the FERC and other regulatory agencies, which shall be reviewed and approved by the ISO CEO or his or her designee and then submitted as required. When publicly available reports are made to one regulatory agency with competent jurisdiction, such as the FERC, the Department of Market Analysis may simultaneously make such reports available to other regulatory agencies with legitimate interests in their contents, such as the Electricity Oversight Board, the California Public Utilities Commission, the California Energy Commission and/or the California Attorney General.

**MMIP 4.4.3 ISO Market Surveillance Committee**

All reports and recommendations to be made to regulatory agencies under MMIP 4.4.2, unless urgency requires otherwise, shall first be submitted to the MSC for comments, which comments shall be reflected in any submittal to the ISO Governing Board seeking approval of any such reports or recommendations. All final reports made to external regulatory agencies shall be simultaneously submitted to the MSC.

**MMIP 4.5 Market Participants**

**MMIP 4.5.1 Collection of Data**

The Department of Market Analysis may request that Market Participants or other entities whose activities may affect the operation of the ISO markets submit any information or data determined by the Department of Market Analysis to be potentially relevant. This data will be subject to due safeguards to protect confidential and commercially sensitive data. Failures by Market Participants to provide such data shall be treated under the Enforcement Protocol. In the event of failures by other entities to provide such data, the ISO may take whatever action is available to it and appropriate for it to take, including reporting the failure to the pertinent regulatory agency, after providing such entity the opportunity to respond in writing as to the reason for the alleged failure.

and may include possible exclusion from the ISO Markets or termination of any relevant ISO agreements or certifications. Before any such action is taken, the ISO Participant shall be provided the opportunity to respond in writing as to the reason for the alleged failure.

**MMIP 4.5.2      Dissemination of Data**

Any Market Participant may request that the ISO provide data that the ISO has collected concerning that Market Participant; and, such data may, subject to constraints on the ISO's resources and at the ISO's sole discretion, be provided by the ISO subject to due safeguards to protect confidential and commercially sensitive data. Where such activity imposes a significant burden or expense on the ISO, the data may be provided on the condition that a reasonable contribution to the cost incurred by the ISO is made to the ISO by the requesting party.

**MMIP 4.6      External Consulting Assistance and Expert Advice**

In carrying out any of its responsibilities under this MMIP 4, including the development of an information system, market monitoring indices and evaluation criteria, and the catalogs associated therewith, and in its analysis and ongoing evaluation of these catalogs and of the Rules of Conduct under MMIP 4.3, the Department of Market Analysis may hire consulting assistance subject to the budgetary approval of the ISO CEO and may seek such expert external advice as it believes necessary.



**MMIP 4.7 Liability for Damages**

As provided in Section 14.1 and 14.2 of the ISO Tariff, the Department of Market Analysis, the MSC, the ISO CEO and other ISO staff, and the ISO Governing Board shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such ISO entities of their functions under this Protocol.

**MMIP 5 MARKET SURVEILLANCE COMMITTEE**

**MMIP 5.1 Establishment**

There shall be established on or before ISO Operations Date a Market Surveillance Committee (MSC), whose role it shall be to provide independent external expertise on the ISO market monitoring process as described in this Protocol and, in particular, to provide independent expert advice and recommendations to the ISO CEO and Governing Board. Members of the Committee shall not be, and shall not be understood to be, employees or agents of the ISO.

**MMIP 5.2 Composition**

**MMIP 5.2.1 Qualifications**

The MSC shall comprise a body of three or more independent and recognized experts whose combined professional expertise and experience shall encompass the following:

- MMIP 5.2.1.1** economics, with emphasis on antitrust, competition, and market power issues in the electricity industry;
- MMIP 5.2.1.2** experience in operational aspects of Generation and transmission in electricity markets;
- MMIP 5.2.1.3** experience in antitrust or competition law in regulated industries; and
- MMIP 5.2.1.4** financial expertise relevant to energy or other commodity trading.

**MMIP 5.2.2 Criteria for Independence**

Each member of the MSC must meet the following criteria for independence:

- MMIP 5.2.2.1** no material affiliation, through employment, consulting or otherwise, with any Market Participant or Affiliate thereof consistent with the pertinent FERC Standards of Conduct; and
- MMIP 5.2.2.2** no material financial interest in any Market Participant or Affiliate thereof consistent with the pertinent FERC Standards of Conduct.
- MMIP 5.2.2.3** during their time on the Committee, members may not provide paid expert witness testimony or other commercial services to the ISO or to any other party in connection with any legal or regulatory proceeding relating to the ISO or any trade or other transaction involving the ISO markets (except that the Committee may consult with and make

recommendations concerning the functioning of the markets to ISO Management or the ISO Governing Board in connection with legal or regulatory proceedings).

**MMIP 5.3 Appointments to the MSC**

For each position on the MSC, the ISO CEO shall conduct a thorough search and requisite due diligence to develop a nomination to the ISO Governing Board, which nomination shall be consistent with meeting the combined professional expertise and experience of the MSC set forth in MMIP 5.2.1 and with the criteria for independence set forth in MMIP 5.2.2. The ISO Governing Board shall expeditiously consider such nominations. If the nomination is approved, the ISO CEO shall appoint the candidate so nominated to the MSC. If the nomination is rejected, the ISO CEO shall expeditiously proceed to develop another nomination in accordance with this MMIP.

**MMIP 5.4 Compensation and Reimbursements**

Members of the MSC shall be compensated on such basis as the ISO Governing Board shall from time to time determine.

Members of the MSC shall receive prompt reimbursement for all expenses reasonably incurred in the execution of their responsibilities under this MMIP 5.

**MMIP 5.5 Liability for Damages**

As provided in Section 14.1 and 14.2 of the ISO Tariff, the Department of Market Analysis, the MSC, the ISO CEO and other ISO staff, and the ISO Governing Board shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such ISO entities of their functions under this Protocol.

**MMIP 6 SPECIFIC FUNCTIONS OF MARKET SURVEILLANCE COMMITTEE (MSC)**

**MMIP 6.1 Information Gathering and Evaluation Criteria**

The MSC shall review the initial catalogs of information and data and of evaluation criteria developed by the Department of Market Analysis pursuant to MMIP 4 and shall propose such changes, additions or deletions to such catalogs or items therein as it sees fit. In so doing, the MSC shall have full discretion to specify database items or evaluation criteria for inclusion in the pertinent catalog.

**MMIP 6.2 Evaluation of Information**

The MSC may, upon request of the Department of Market Analysis, the ISO Management or the ISO Governing Board, or on its own volition, evaluate such information or data, including as may be collected by the Department of Market Analysis on the basis of the evaluation criteria developed by the Department of Market Analysis or on such further articulated evaluation criteria developed by the MSC.

**MMIP 6.3 Reports and Recommendations**

**MMIP 6.3.1 Required Reports**

All evaluations carried out by the MSC pursuant to MMIP 6.2, and any recommendations emanating from such evaluations, shall be embodied by the MSC in written reports to the ISO CEO and ISO Governing Board and shall be made publicly available subject to due restrictions on dissemination of confidential or commercially sensitive information. The MSC may submit any MSC report to FERC, subject to due restrictions on dissemination of confidential or commercially sensitive information.

**MMIP 6.3.2 Additional Reports**

The MSC may make such additional reports and recommendations as it sees fit relating to the monitoring program referred to in this Protocol, the analysis of information, the evaluation criteria or any corrective or enforcement actions proposed by the Department of Market Analysis or proposed of its own volition.

**MMIP 6.4 Publication of Reports and Recommendations**

Upon request of the MSC, the ISO shall publish reports and recommendations of the MSC or incorporate them, if consistent, into the ISO's own reports or recommendations.

**MMIP 7 IMPLEMENTATION OF RECOMMENDATIONS**

**MMIP 7.1 Plan and Rules of Conduct Changes**

Following a recommendation of the MSC, the ISO Governing Board may make such changes as it believes are appropriate to any ISO Protocol or Agreement or to any Rules of Conduct applicable in accordance with MMIP 9.

**MMIP 7.2 Tariff Changes**

Upon recommendation of the MSC, the ISO Governing Board shall consider and may adopt proposed ISO Tariff changes in accordance with MMIP 9.

**MMIP 7.3 Sanctions and Penalties**

Upon recommendation of the MSC, the ISO may impose such sanctions or penalties as it believes necessary and as are permitted under the ISO Tariff and related protocols approved by FERC; or it may make any such referral to such regulatory or antitrust agency as it sees fit to recommend the imposition of sanctions and penalties.

**MMIP 8 PUBLICATION OF INFORMATION**

**MMIP 8.1 Market Monitoring Data and Indices**

The ISO Department of Market Analysis shall, pursuant to MMIP 4.1, develop a catalog of data and indices. Upon approval of the ISO CEO, such catalogs shall be duly published on the ISO Home Page and disseminated to all Market Participants.

**MMIP 8.2 Reports to Regulators**

The ISO shall develop annual reports of market performance for delivery to FERC, and such other reports as may be required by FERC, which shall be submitted for review to the MSC. The Department of Market Analysis shall prepare and submit such reports to the ISO CEO, ISO Governing Board and to the regulatory agency concerned.

**MMIP 9 AMENDMENTS**

If the ISO determines a need for an amendment to this Protocol, the ISO will follow the requirements as set forth in Section 16 of the ISO Tariff.

## APPENDIX A

### ISO Market Monitoring Plan

#### Market Mitigation Measures

#### 1 PURPOSE AND OBJECTIVES

1.1 These ISO market power mitigation measures ("Mitigation Measures") are intended to provide the means for the ISO to mitigate the market effects of any conduct that would substantially distort competitive outcomes in the ISO Real Time Market while avoiding unnecessary interference with competitive price signals. These Mitigation Measures are intended to minimize interference with an open and competitive market, and thus to permit, to the maximum extent practicable, price levels to be determined by competitive forces under the prevailing market conditions. To that end, the Mitigation Measures authorize the mitigation only of specific conduct that exceeds well-defined thresholds specified below.

1.2 In addition, the ISO shall monitor the markets it administers for conduct that it determines constitutes an abuse of market power but does not trigger the thresholds specified below for the imposition of mitigation measures by the ISO. If the ISO identifies any such conduct, and in particular conduct exceeding the thresholds for presumptive market effects specified below, it shall make a filing under Section 205 of the Federal Power Act, 16 U.S.C. § 824d, with FERC, requesting authorization to apply appropriate mitigation measures. Any such filing shall identify the particular conduct the ISO believes warrants mitigation, shall propose a specific mitigation measure for the conduct, and shall set forth the ISO's justification for imposing that mitigation measure.

## **2 CONDUCT WARRANTING MITIGATION**

### **2.1 Definitions**

The following definitions are applicable to this Appendix A:

"Economic Market Clearing Prices" are the Market Clearing Prices for a particular resource at the location of that particular resource at the time the resource was either Scheduled or was Dispatched by the ISO. Economic Market Clearing Prices may originate from the Day-Ahead Energy market, the Hour-Ahead Energy market (when these markets are in place), or ISO real-time Imbalance Energy market. The Economic Market Clearing Price for the ISO real-time Imbalance Energy market shall be the Dispatch Interval Ex Post Price, unless the resource cannot change output level within the hour (i.e., the resource is not amenable to intra-hour real-time Dispatch instructions), or it is a System Resource. Economic Market Clearing Prices for the ISO real-time Imbalance Energy market for resources that cannot change output level within one Dispatch Interval and System Resources shall be the simple average of the relevant Dispatch Interval Ex Post Prices for each hour.

"Electric Facility" shall mean an electric resource, including a Generating Unit, System Unit, or a Participating Load.

### **2.2 Conduct Subject to Mitigation**

Mitigation Measures may be applied: (i) to the bidding, scheduling, or operation of an "Electric Facility"; or (ii) as specified in Section 2.4 below.

### **2.3 Conditions for the Imposition of Mitigation Measures**

**2.3.1** In general, the ISO shall consider a Market Participant's conduct to be inconsistent with competitive conduct if the conduct would not be in the economic interest of the Market Participant in the absence of market power. The categories of conduct that are inconsistent with competitive conduct include, but may not be limited to, the three categories of conduct specified in Section 2.4 below.

## **2.4 Categories of Conduct that May Warrant Mitigation**

**2.4.1** The following categories of conduct, whether by a single firm or by multiple firms acting in concert, may cause a material effect on prices or generally the outcome of **the** ISO Real Time Market if exercised from a position of market power. Accordingly, the ISO shall monitor the ISO Markets for the following categories of conduct, and shall impose appropriate Mitigation Measures if such conduct is detected and the other applicable conditions for the imposition of Mitigation Measures are met:

- (1) Physical withholding of an Electric Facility, in whole or in part, that is, not offering to sell or schedule the output of or services provided by an Electric Facility capable of serving an ISO Market. Such withholding may include, but not be limited to: (i) falsely declaring that an Electric Facility has been forced out of service or otherwise become totally or partially unavailable, (ii) refusing to offer bids or schedules for an Electric Facility when it would be in the economic interest, absent market power, of the withholding entity to do so, (iii) declining real-time bids called upon by the ISO (unless the ISO is informed in accordance with established procedures that the relevant resource for which the bid is submitted has undergone a forced outage or derate), or (iv) operating a Generating Unit in real time to produce an output level that is less than the ISO's Dispatch instruction.
- (2) Economic withholding of an Electric Facility, that is, submitting bids for an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) so that: (i) the Electric Facility is not or will not be dispatched or scheduled, or (ii) the bids will set a Market Clearing Price.
- (3) Uneconomic production from an Electric Facility, that is, increasing the output of an Electric Facility to levels that would otherwise be uneconomic in order to cause, and obtain benefits from, a transmission constraint.

**2.4.2** Mitigation Measures may also be imposed to mitigate the market effects of a rule, standard, procedure, design feature, or known software imperfection of an ISO Market that allows a Market Participant to manipulate market prices or otherwise impair the efficient operation of that market, pending the revision of such rule, standard, procedure design feature, or software defect to preclude such manipulation of prices or impairment of efficiency.

**2.4.3** Taking advantage of opportunities to sell at a higher price or buy at a lower price in a market other than an ISO Market shall not be deemed a form of withholding or otherwise inconsistent with competitive conduct.

**2.4.4** The ISO shall monitor ISO Markets for other categories of conduct, whether by a single firm or by multiple firms acting in concert, that have material effects on prices in an ISO Market or other payments. The ISO 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 ISO Markets; and (ii) seek such other authorization to mitigate the effects of such conduct from the FERC as may be appropriate.

### **3 CRITERIA FOR IMPOSING MITIGATION MEASURES**

#### **3.1 Identification of Conduct Inconsistent with Competition**

Conduct that may potentially warrant the imposition of a mitigation measure includes the categories described in Section 2.4 above. The thresholds listed in Section 3.1.1 below shall be used to identify substantial departures from competitive conduct indicative of an absence of workable competition.

##### **3.1.1 Conduct Thresholds for Identifying Economic Withholding**

The following thresholds shall be employed by the ISO to identify economic withholding that may warrant the mitigation of the bid from a resource and shall be determined with respect to a reference level determined as specified in Section 3.1.1.1:

For Energy Bids to be Dispatched as Imbalance Energy through the RTD Software: the lower of a 200 percent increase or \$100/MWh increase in the bid with respect to its Reference Level.



### 3.1.1.1 Reference Levels

(a) For purposes of establishing reference levels, bid segments shall be defined as follows:

1. the capacity of each generation resource shall be divided into 10 equal Energy bid segments between its minimum (Pmin) and maximum (Pmax) operating point.

A reference level for each bid segment shall be calculated **each day** for peak and off-peak periods on the basis of the following methods, listed in the following order of preference subject to the existence of sufficient data, where sufficient data means at least one data point per time period (peak or off-peak) for the bid segment. Peak periods shall be the periods Monday through Saturday from Hour Ending 0700 through Hour Ending 2200, excluding holidays. Off-Peak periods are all other hours.

1. **Excluding proxy and mitigated bids,** the accepted bid, or the lower of the mean or the median of a resource's accepted bids **if such a** resource has more than one accepted bid in competitive periods over the previous 90 days for peak and off-peak periods, adjusted for **monthly** changes in fuel prices using the proxy figure for natural gas prices posted on the ISO Home Page. **Accepted and justified bids above the applicable soft cap, as set forth in Section 28.1.2 of this Tariff, will be included in the calculation of reference prices.**
2. If the resource is a gas-fired unit that does not have significant energy limitations, the unit's default **Energy Bid determined monthly** as set forth in Section 5.11.5 (based on the incremental heat rate submitted to the ISO, adjusted for gas prices, and the variable O&M cost on file with the ISO, or the default O&M cost of \$6/MWh).
3. For non gas-fired units and gas-fired units that have significant energy limitations, a level determined in consultation with the Market

Participant submitting the bid or bids at issue, provided such consultation  
has occurred prior to the occurrence of the conduct

being examined by the ISO, and provided the Market Participant has provided sufficient data on a unit's energy limitations and operating costs (opportunity cost for energy limited resources) in accordance with specifications provided by the ISO.

4. The mean of the Economic Market Clearing Prices for the units' relevant location (Zone or node commensurate with the pricing granularity in effect) during the lowest-priced 25 percent of the hours that the unit was dispatched or scheduled over the previous 90 days for peak and off-peak periods, adjusted for changes in fuel prices; or
  5. If sufficient data do not exist to calculate a reference level on the basis of the first, second, or fourth methods and the third method is not applicable or an attempt to determine a reference level in consultation with a Market Participant has not been successful, the ISO shall determine a reference level on the basis of:
    - i. the ISO's estimated costs of an Electric Facility, taking into account available operating costs data, opportunity cost, and appropriate input from the Market Participant, and the best information available to the ISO; or
    - ii. an appropriate average of competitive bids of one or more similar Electric Facilities.
- (b) The reference levels (\$/MWh bid price) for the different bid segments of each resource (or import bid curve of a Scheduling Coordinator at a Scheduling Point) shall be made monotonically non-decreasing by the ISO by proceeding from the lowest MW bid segment moving through each higher MW bid segment. The reference level of each succeeding bid segment shall be the higher of the reference level of the preceding bid segment or the reference level determined according to paragraph (a) above.

## **3.2 Material Price Effects**

### **3.2.1 Market Impact Thresholds**

In order to avoid unnecessary intervention in the ISO Market, Mitigation Measures for economic withholding shall not be imposed unless conduct identified as specified above causes or contributes to a material change in one or more of the ISO Market Clearing Prices (MCPs). Initially, the thresholds to be used by the ISO to determine a material price effect shall be as follows:

For Energy Bids to be Dispatched as Imbalance Energy through the RTD Software: the lower of an increase of 200 percent or \$50 per MWh in the projected Hourly Ex Post Price at any location (Zone or node) commensurate with the relevant pricing structure in effect in accordance with the ISO Tariff.

For Energy Bids to be Dispatched out of economic merit order to manage Intra-Zonal Congestion: if the price of the bid is \$50/MWh or 200 percent greater than the Dispatch Interval Ex Post Price at that location (Zone or node) commensurate with the relevant pricing structure in effect in accordance with the ISO Tariff.

Accepted and justified bids above the applicable soft cap, as set forth in Section 28.1.2 of this Tariff, will not be eligible to set the Market Clearing Price. Such bids shall be included in the Market Impact test, however, and, for purposes of this test only, shall be assumed to be eligible to set the Market Clearing Price.

### **3.2.2 Price Impact Analysis**

#### **3.2.2.1 Bids to be Dispatched as Imbalance Energy.**

The ISO shall determine the effect on prices of questioned conduct through automated computer modeling and analytical methods. An Automatic Mitigation Procedure (AMP) shall identify bids that have exceeded the conduct thresholds and shall compute the change in projected Hourly Ex Post Prices as a result of simultaneously setting all such bids to their Reference Levels. If a change in the projected Hourly Ex Post Price exceeds the Impact threshold stated in Section 3.2.1, those bids would be kept mitigated at their default bid levels as specified in Section 4.2.2 below.

**3.2.2.2 Bids to be Dispatched out of economic merit order to manage Intra-Zonal Congestion.** If the price of the bid is \$50/MWh or 200 percent greater than the Dispatch Interval Ex Post Price at that location (Zone or node) commensurate with the relevant pricing structure in effect in accordance with the ISO Tariff, the bid price shall be mitigated to the reference price and the Scheduling Coordinator for that resource shall be paid the greater of the reference price or the relevant Dispatch Interval Ex Post Price. Bids mitigated in accordance with this Section 3.2.2.2 shall not set the Dispatch Interval Ex Post Price.

### **3.2.3 Section 205 Filings**

In addition, the ISO shall make a filing under Section 205 of the Federal Power Act with FERC 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 Section 3.1.1 above, unless the ISO determines, from information provided by the Market Participant or Parties that would be subject to mitigation or other information available to the ISO that the conduct is attributable to legitimate competitive market forces or incentives. The following are examples of conduct that are deemed to depart significantly from the conduct that would be expected under competitive market conditions:

- (1) bids that vary with unit output in a way that is unrelated to the known performance characteristics of the unit, or
- (2) bids that vary over time in a manner that appears unrelated to the change in the unit's performance or to changes in the supply environment that would induce additional risk or other adverse shifts in the cost basis.

The conducts listed above are intended to be examples rather than a comprehensive list.

### **3.3 Consultation with a Market Participant**

If a Market Participant anticipates submitting bids in an ISO Market administered by the ISO that will exceed the thresholds specified in Section 3.1 above for identifying conduct inconsistent with competition, the Market Participant may contact the ISO to provide an explanation of any legitimate basis for any such changes in the Market Participant's bids. If a Market Participant's explanation of the reasons for its bidding indicates to the satisfaction of the ISO, that the questioned conduct is consistent with competitive behavior, no further action will be taken. Upon request, the ISO shall also consult with a Market Participant with respect to the information and analysis used to determine reference levels under Section 3.1.1 above for that Market Participant.

## **4 MITIGATION MEASURES**

### **4.1 Purpose**

If conduct is detected that meets the criteria specified in Section 3, the appropriate mitigation measures described in this Section 4 shall be applied by the ISO. The conduct specified in Section 3.1.1 shall be remedied by the prospective application of a default bid measure as described in Section 4.2 for the specific hour that they violate the price and market impact thresholds.

### **4.2 Sanctions for Economic Withholding**

#### **4.2.1 Default Bid**

A default bid shall be designed to cause a Market Participant to bid as if it faced workable competition during a period when: (i) the Market Participant does not face workable competition and (ii)

has responded to such condition by engaging in the economic withholding of an Electric Facility. In designing and implementing default bids, the ISO shall seek to avoid causing an Electric Facility to bid below its marginal cost.

#### 4.2.2 Implementation

- (a) If the criteria contained in Section 3 are met, the ISO may substitute a default bid for a bid submitted for an Electric Facility. The default bid shall establish a maximum value for each component of the submitted bid, equal to a reference level for that component determined as specified in Section 3.1.1 above.
- (b) The Mitigation Measures will be applied to 1) all incremental bids submitted to the real-time Imbalance Energy market during the pre-dispatch process prior to the real-time Imbalance Energy market based on the projected real-time MCPs that are computed during this process; and 2) to the Day-Ahead and the Hour-Ahead Energy markets when these markets are made operational.
- (c) An Electric Facility subject to a default bid shall be paid the MCP applicable to the output from the facility. Accordingly, a default bid shall not limit the price that a facility may receive unless the default bid determines the MCP applicable to that facility.
- (d) The ISO shall not use a default bid to determine revised MCPs for periods prior to the imposition of the default bid, except as may be specifically authorized by FERC.

- (e) The Mitigation Measures shall not be applied to Energy Bids projected to be Dispatched as Imbalance Energy through the RTD Software in the hours in which all Zonal Ex Post Prices are projected to be below \$91.87/MWh. If the Zonal Dispatch Interval Ex Post Price is projected to be above \$91.87/MWh in any ISO Zone, the Mitigation Measures shall be applied to all bids, except those from System Resources, in all ISO Zones. The ISO will apply Mitigation Measures to all bids taken out of merit order to address Intra-Zonal Congestion.
- (f) The Mitigation Measures shall not be applied to bids below \$25/MWh.
- (g) The posting of the MCP may be delayed if necessary for the completion of automated mitigation procedures.
- (h) Bids not mitigated under these Mitigation Measures shall remain subject to mitigation by other procedures specified in the ISO Tariff as may be appropriate.

#### **4.3 Sanctions for Physical Withholding**

The ISO may report a Market Participant the ISO determines to have engaged in physical withholding, including providing the ISO false information regarding the derating or outage of an Electric Facility, to the Federal Energy Regulatory Commission in accordance with Section 2.3.3.9.5 of the ISO Tariff. In addition, a Market Participant that fails to operate a Generating Unit in conformance with ISO Dispatch Instructions shall be subject to the penalties set forth in Section 11.2.4.1.2 of the ISO Tariff.

#### **4.4 Duration of Mitigation Measures**

Bids will be mitigated only in the specific hour that they violate the price and market impact thresholds.

### **5 FERC-ORDERED MEASURES**

In addition to any mitigation measures specified above, the ISO shall administer, and apply when appropriate in accordance with their terms, such other mitigation measures as it may be directed to implement by order of the FERC.

### **6 DISPUTE RESOLUTION**



If a Market Participant has reasonable grounds to believe that it has been adversely affected because a Mitigation Measure has been improperly applied or withheld, it may seek a determination in accordance with the dispute resolution provisions of the ISO Tariff. In no event, however, shall the ISO be liable to a Market Participant or any other person or entity for money damages or any other remedy or relief except and to the extent specified in the ISO Tariff.

**7 EFFECTIVE DATE**

These Mitigation Measures shall be effective as of the date they are approved by the FERC.