

California Independent System Operator Corporation
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12. Creditworthiness

12.1 Credit and Minimum Participation Requirements

The creditworthiness and minimum participation requirements in this section apply to the CAISO's acceptance of any transaction in a CAISO Market, to the payment of charges pursuant to the CAISO Tariff (including the Grid Management Charge), and to establish credit limits for participation in any CAISO auction of CRRs and to CRR Holders for the holding of CRRs. Each Market Participant that has a direct financial relationship with the CAISO (including each Scheduling Coordinator, UDC, MSS, CRR Holder, or Candidate CRR Holder) shall secure its financial transactions with the CAISO (including its participation in any auction of CRRs and for the holding of CRRs) by maintaining an Unsecured Credit Limit and/or by posting Financial Security, the level of which constitutes the Market Participant's Financial Security Amount. For each Market Participant, the sum of its Unsecured Credit Limit and its Financial Security Amount shall represent its Aggregate Credit Limit. Each Market Participant shall have the responsibility to maintain an Aggregate Credit Limit that is at least equal to its Estimated Aggregate Liability. In order to participate in the CAISO Markets, each prospective Market Participant or existing Market Participant with a direct financial relationship with the CAISO must satisfy all of the following minimum participation requirements:

- (i) Provide the CAISO annually, as detailed in the Business Practice Manual, a certified statement executed by an officer of the prospective or existing Market Participant certifying that the prospective or existing Market Participant has met the following criteria and relevant requirements consistent with these criteria set forth in the Business Practice Manual:
 - (a) Has undergone training commensurate and proportional in sophistication, scope, and frequency to the volume of transactions and the nature and extent of the risk taken by the prospective or existing Market Participant, including but not limited to any applicable CAISO training requirements as specified in Sections 4.5.1.1.10.1 and 36.5.2;

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- (b) Has and maintains written policies, procedures, and controls approved by the appropriate officer or corporate authority of the prospective or existing Market Participant's governing body which provide an appropriate, comprehensive risk management framework that, at a minimum, clearly identifies and documents the range of risks to which the prospective or existing Market Participant is exposed, including, but not limited to, legal risk, credit risk, liquidity risk, risk of loss of financial security amounts held and invested by the CAISO, investment risk, concentration risk, default risk, operation risk, market risk, and business risk;
 - (c) To the extent the Market Participant engages in the CRR market, the Market Participant must demonstrate that it has policies in place that are consistent with generally accepted industry risk management standards; and
 - (d) Has appropriate personnel resources, operating procedures and technical abilities to promptly and effectively respond to all CAISO communications and directions, including, but not limited to, the CAISO's issuance of invoices and collateral requests to the prospective or existing Market Participant
- (ii) Provide annually for CAISO review and verification, as detailed in the Business Practice Manual, the risk management policies, procedures, and controls applicable to the CRR trading activities of the prospective or existing Market Participant, if the prospective or existing Market Participant has a CRR portfolio that meets the applicable risk criterion set forth in the Business Practice Manual.
 - (iii) Satisfy the following capitalization requirements:
 - (a) Pursuant to Sections 12.1 and 12.1.1, the prospective or existing Market Participant or its guarantor must have at least \$1 million in Tangible Net Worth or \$10 million in total assets, or post Financial Security using one

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or more of the forms specified in Section 12.2 (a) through (e) in the amounts set forth below. In the event the prospective or existing Market Participant must post Financial Security, that financial security will not be added to Market Participant's Aggregate Credit Limit and, therefore, cannot be used to meet Market Participant's minimum credit requirements to participate in a Congestion Revenue Rights auction or to offset any market obligations as reflected in Market Participant's Estimated Aggregate Liability. However, all Financial Security in any form may be used to satisfy any financial obligation of the Market Participant.

- (b) \$500,000 for a prospective or existing Market Participant with fewer than six (6) months of CAISO Market activity; \$100,000 for an existing Market Participant with six (6) months or more of CAISO Market activity and whose highest Estimated Aggregate Liability for the preceding six (6) months is less than or equal to \$100,000; or \$500,000 for an existing Market Participant with six (6) months or more of market activity and whose highest Estimated Aggregate Liability for the preceding six (6) months is greater than \$100,000.
- (c) The CAISO will review whether the prospective or existing Market Participant continues to satisfy the capitalization requirements set forth in Section 12.1(iii)(a). The CAISO will conduct such a review every six (6) months, when new financial statements are posted for the prospective or existing Market Participant, or when an increase in CAISO Market activity causes the Market Participant's Estimate Agreement Liability to exceed \$100,000.

The CAISO will review and verify that prospective Market Participants satisfy the minimum participation requirements set forth in this Section 12.1, and the CAISO will request any information from prospective Market Participants that is needed to complete the CAISO's review

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and verification. Further, the CAISO will annually select, on a random basis, up to ten (10) percent of the Market Participants that are not already subject to annual verification as set forth in Section 12.1(ii), and the CAISO will request any information from those randomly selected Market Participants that is needed to review and verify whether the Market Participants continue to satisfy the minimum participation requirements set forth in this Section 12.1. Each Market Participant randomly selected for annual verification and satisfactorily verified will be exempted from such random verification for the subsequent two (2) years, unless within that two-year period the Market Participant undergoes a Material Change in Financial Condition as set forth in Section 12.1.1.5, in which case the Market Participant will remain subject to random verification within the two-year period. In addition, the CAISO may at any time select any Market Participant for review to determine whether the Market Participant continues to satisfy the minimum participation requirements set forth in this Section 12.1, based on identified risk factors that include, but are not limited to, the CAISO Markets in which the Market Participant is transacting or seeks to transact, the magnitude of the Market Participant's transactions or potential transactions, or the volume of the Market Participant's open positions in the CAISO Markets. Such review by the CAISO based on identified risk factors will not be subject to the two-year period of exemption from random verification.

Each Market Participant shall respond to any CAISO request for information within five (5) Business Days. Failure to provide the requested information within the specified time period may result in the CAISO taking enforcement actions pursuant to Section 12.5. The CAISO may review and verify the information either with or without the assistance of a third party, at the CAISO's discretion, subject to confidentiality and non-disclosure restrictions, as applicable. The CAISO will provide the Market Participant with a written explanation of any deficiencies in the information provided. For purposes of Section 12, any documentation provided by a prospective or existing Market Participant in compliance with this Section shall be treated as confidential and the CAISO shall maintain the confidentiality of all such documents. Any CAISO review and verification of the Market Participant's risk management policies, procedures, and controls will be conducted

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according to generally accepted risk management standards that may be developed from time to time and shall include but not be limited to confirmation that:

- The Market Participant's risk management framework is documented in a risk policy addressing market, credit, and liquidity risks that has been approved by the Market Participant's risk management governance function, which includes appropriate corporate persons or bodies that are independent of the Market Participant's trading functions, such as a risk management committee, a designated risk officer, a board or board committee, or a board or committee of the Market Participant's parent company;
- The Market Participant maintains an organizational structure with clearly defined roles and responsibilities that segregate front-, middle-, and back-office functions to as high a level as is practicable;
- Delegations of authority specify the transactions in which traders are allowed to enter;
- The Market Participant ensures that traders have adequate training and experience relative to their delegations of authority in systems and the markets in which they transact;
- As appropriate, risk limits are in place to control risk exposures;
- Reporting is in place to ensure risks are adequately communicated throughout the organization;
- Processes are in place for independent confirmation of executed transactions; and
- As appropriate, there is periodic evaluation or mark-to-market of risk positions.

Each prospective Market Participant that does not satisfy all of the minimum participation requirements set forth in this Section 12.1 will be prohibited from participating in the CAISO Markets. Each prospective Market Participant taking part in the Scheduling Coordinator certification process pursuant to Section 4.5.1 or the Candidate CRR Holder application process pursuant to Section 4.10.1 that does not satisfy all of the minimum participation requirements set forth in this Section 12.1 will be ineligible to become a Market Participant or CRR Holder. Each existing Market Participant that does not satisfy all of the minimum participation requirements set forth in this Section 12.1 will be out of compliance with the CAISO Tariff. Any failure of a Market

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Participant to satisfy the minimum participation requirements set forth in this Section 12.1 that is not cured within thirty (30) days of CAISO notification that a failure occurred will subject the Market Participant to CAISO enforcement actions as set forth in Section 12.5.

12.1.1 Unsecured Credit Limit

Each Market Participant requesting an Unsecured Credit Limit shall submit an application to the CAISO in the form specified on the CAISO Website. The CAISO shall determine the Unsecured Credit Limit for each Market Participant in accordance with the procedures set forth in the applicable Business Practice Manual. The maximum Unsecured Credit Limit for any Market Participant, and group of Market Participant Affiliates, shall be \$50 million. In accordance with the procedures described in the applicable Business Practice Manual, each Market Participant requesting or maintaining an Unsecured Credit Limit is required to submit to the CAISO or its agent financial statements and other information related to its overall financial health as directed by the CAISO. Each Market Participant is responsible for the timely submission of its latest financial statements as well as other information, including, but not limited to, information concerning all entities that are Affiliates or become Affiliates, that may be reasonably necessary for the CAISO to conduct its evaluation. The CAISO shall determine the Unsecured Credit Limit for each Market Participant as described in Sections 12.1.1.1, 12.1.1.1.1, and 12.1.1.1.2.

As a result of the CAISO's credit evaluation, a Market Participant may be given an Unsecured Credit Limit by the CAISO or denied an Unsecured Credit Limit with the CAISO. Following the initial application and the establishment of an Unsecured Credit limit, the CAISO will review each Market Participant's Unsecured Credit Limit on a quarterly basis, unless that entity does not prepare quarterly statements, in which case the review will occur on an annual basis, and no entity shall be required to submit a new application. In addition, the CAISO may review the Unsecured Credit Limit for any Market Participant whenever the CAISO becomes aware of information that could indicate a Material Change in Financial Condition. In the event the CAISO determines that the Unsecured Credit Limit of a Market Participant must be reduced as a result of a subsequent review due to a reason other than a Material Change in Financial Condition, the CAISO shall notify the Market Participant of the reduction, and shall, upon request, also provide

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the Market Participant with a written explanation of why the reduction was made. In the event the CAISO determines that the Unsecured Credit Limit of a Market Participant must be reduced as a result of a subsequent review due to a Material Change in Financial Condition, the CAISO shall notify the Market Participant of the reduction in writing and shall provide the Market Participant with a written explanation of the reasons for the reduction, either in advance of the reduction if reasonably practicable or after the reduction was made if providing the written notification and explanation in advance is not reasonably practicable, as set forth in the applicable Business Practice Manual.

In the event that any credit agency issuer rating or the Moody's Analytics Equivalent Rating of the Market Participant falls below investment grade at any time, the Market Participant will be denied an Unsecured Credit Limit or have its existing Unsecured Credit Limit revoked until (i) the CAISO's next quarterly review of the Market Participant's creditworthiness or (ii) thirty (30) calendar days after the Market Participant's Unsecured Credit Limit is denied or revoked, whichever is later.

12.1.1.1 Unsecured Credit Limit Calculation

An Unsecured Credit Limit (UCL) for each Market Participant that is a Rated or Unrated Public/Private Corporation, a Rated or Unrated Governmental Entity, or a Local Publicly Owned Electric Utility and that requests an Unsecured Credit Limit is calculated as follows:

1. For each Rated Public/Private Corporation, the Unsecured Credit Limit is the lesser of \$50 million or an amount equal to the Market Participant's Tangible Net Worth multiplied by a calculated percentage of Tangible Net Worth. The Tangible Net Worth percentage is comprised of fifty percent (50%) of the Market Participant's lowest credit agency issuer rating and fifty percent (50%) of the Moody's Analytics Equivalent Rating, if reasonably applicable. If a Moody's Analytics Equivalent Rating is not reasonably applicable, the Tangible Net Worth percentage is comprised of one hundred percent (100%) of the Market Participant's lowest credit

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agency issuer rating.

2. For each Unrated Public/Private Corporation, the Unsecured Credit Limit is the lesser of \$50 million or an amount equal to the Market Participant's Tangible Net Worth multiplied by a calculated percentage of Tangible Net Worth. The Tangible Net Worth percentage is comprised of one hundred percent (100%) of the Moody's Analytics Equivalent Rating.
3. For each Rated Governmental Entity, the Unsecured Credit Limit is the lesser of \$50 million or an amount equal to the Market Participant's Net Assets multiplied by a calculated percentage of Net Assets. The Net Assets percentage is comprised of one hundred percent (100%) of the Market Participant's lowest credit agency issuer rating.
4. (a) For each Unrated Governmental Entity other than one that receives appropriations from the federal government or a state government, the Unsecured Credit Limit is the lesser of \$50 million or an amount equal to a specified percentage of the Market Participant's Net Assets if the Market Participant has a minimum of \$25 million in Net Assets and its Times Interest Earned, Debt Service Coverage and Equity to Assets ratios (as those ratios are defined in the applicable Business Practice Manual) meet or exceed minimums specified in the applicable Business Practice Manual.

(b) For each Unrated Governmental Entity that receives appropriations from the federal government or a state government, the Unsecured Credit Limit is the lesser of \$50 million or the amount appropriated by the federal or relevant state government for the purpose of procuring Energy and Energy-related products and services for the applicable fiscal year. The Unrated Governmental Entity seeking to establish an Unsecured Credit Limit pursuant to this section shall provide documentation establishing its annual appropriations.

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5. A Local Publicly Owned Electric Utility with a governing body having ratemaking authority that has submitted an application for an Unsecured Credit Limit shall be entitled to an Unsecured Credit Limit of \$1 million without regard to its Net Assets. Such Local Publicly Owned Electric Utility shall be entitled to request an Unsecured Credit Limit based on Net Assets as provided in Section 12.1.1.1(3) or 12.1.1.1(4) in order to establish an Unsecured Credit Limit as the greater of \$1 million or the amount determined as provided in this Section 12.1.1.1(5). A public entity that is not a Local Publicly Owned Electric Utility is not entitled to an Unsecured Credit Limit of \$1 million under this Section 12.1.1.1(5) but may seek to establish an Unsecured Credit Limit as provided in any other provision of the CAISO Tariff that may apply.

Public entities, including Local Publicly Owned Electric Utilities, that operate through a Joint Powers Agreement, or a similar agreement acceptable to the CAISO with the same legal force and effect, shall be entitled to aggregate or assign their Unsecured Credit Limits subject to the following limitations and requirements. A public entity that is a party to a Joint Powers Agreement or similar agreement and that is also participating independently in the CAISO Markets with an established Unsecured Credit Limit shall not be entitled to assign or aggregate any portion of its Unsecured Credit Limit that the public entity is using to support financial liabilities associated with its individual participation in the CAISO Markets. A Local Publicly Owned Electric Utility that operates through a Joint Powers Authority or similar agreement that desires to aggregate a portion of its Unsecured Credit Limit that is equal to or less than \$1 million with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign a portion of its Unsecured Credit Limit that is

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equal to or less than \$1 million to the Joint Powers Authority shall be entitled to do so. A Local Publicly Owned Electric Utility that operates through a Joint Powers Agreement or similar agreement that desires to aggregate its Unsecured Credit Limit with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign a portion of its Unsecured Credit Limit to the Joint Powers Authority that exceeds \$1 million, and any public entity that is not a Local Publicly Owned Electric Utility that operates through a Joint Powers Agreement or similar agreement that desires to aggregate its Unsecured Credit Limit with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign any portion of its Unsecured Credit Limit to the Joint Powers Authority, shall provide documentation that is acceptable to the CAISO and that demonstrates the Local Publicly Owned Electric Utility or public entity will assume responsibility for the financial liabilities of the Joint Powers Authority associated with the assigned or aggregated portion of the Unsecured Credit Limit. Such documentation may include a guaranty or similar instrument acceptable to the CAISO.

In those cases where a Market Participant is a subsidiary or Affiliate of another entity and would like to utilize the consolidated financial statements and other relevant information of that entity for obtaining an Unsecured Credit Limit, a signed corporate guaranty is required. A guarantor would be considered reasonably acceptable and a corresponding Unsecured Credit Limit would be set based on the guarantor's credit evaluation according to the procedures that apply to the credit evaluation of a Market Participant pursuant to Section 12.1.1. Unsecured Credit Limits established pursuant to this Section 12.1.1.1 shall be subject to the CAISO's consideration of the same qualitative factors that apply to all Market Participants as set forth in Section 12.1.1.2 and, accordingly, the CAISO may adjust their Unsecured Credit Limits pursuant to Section 12.1.1.

12.1.1.1.1 Maximum Percentage of Tangible Net Worth and Net Assets

For Rated and Unrated Public/Private Corporations or Rated Governmental Entities, the maximum percentage of Tangible Net Worth or Net Assets is 7.5 percent (7.5%) for the highest quality firms; that is, those Market Participants who maintain the highest Moody's Analytics Equivalent Rating and/or highest credit agency issuer rating. The percentage of Tangible Net Worth or Net Assets that a Market Participant qualifies for will be reduced as its credit risk increases as determined by having a lower Moody's Analytics Equivalent Rating and/or lower credit agency issuer rating.

For Unrated Governmental Entities, the CAISO may provide an Unsecured Credit Limit of up to five percent (5%) of Net Assets.

With respect to either of these potential maximum percentages, a lesser amount of unsecured credit may be granted if the CAISO becomes aware of information related to a Material Change in Financial Condition or other significant information that presents a significant risk to the creditworthiness of the entity.

12.1.1.1.2 Unsecured Credit Limit Calculation Steps

A six-step process is used to determine Unsecured Credit Limits for Market Participants that are Rated Public/Private Corporations, Unrated Public/Private Corporations, and Rated Governmental Entities.

Step 1 – If the Market Participant has a credit rating(s) from one or more of the Nationally Recognized Statistical Rating Organizations, verify the rating(s) with the appropriate organization. Regardless of the number of ratings available, the lowest rating will be used for purposes of determining the percentage of Tangible Net Worth or Net Assets.

Step 2 – Obtain the Market Participant's Moody's Analytics Equivalent Rating.

Step 3 – Calculate the percentage of Tangible Net Worth or Net Assets based on the entity type as described in Section 12.1.1.1.

Step 4 – Calculate the Market Participant's Tangible Net Worth or Net Assets.

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- (a) Tangible Net Worth for Rated or Unrated Public/Private Corporations equals total assets minus assets (net of any matching liabilities, assuming the result is a positive value) the CAISO reasonably believes to be restricted or potentially unavailable to settle a claim in the event of a default (examples include restricted assets and Affiliate assets) minus intangible assets (i.e., those assets not having a physical existence such as patents, trademarks, franchises, intellectual property, and goodwill) minus derivative assets (net of any matching liabilities, assuming the result is a positive value) minus total liabilities.
- (b) Net Assets for Rated Governmental Entities equals total assets minus assets (net of any matching liabilities, assuming the result is a positive value) the CAISO reasonably believes to be restricted or potentially unavailable to settle a claim in the event of a default (examples include restricted assets) minus total liabilities.

Step 5 – Calculate the Market Participant’s intermediate Unsecured Credit Limit.

- (a) $\text{intermediate Unsecured Credit Limit} = \text{Tangible Net Worth} * \text{percentage of Tangible Net Worth for Rated or Unrated Public/Private Corporations}$
- (b) $\text{intermediate Unsecured Credit Limit} = \text{Net Assets} * \text{percentage of Net Assets for Rated Governmental Entities}$

Step 6 – Adjust the intermediate Unsecured Credit Limit downward, if warranted based on the CAISO’s review of qualitative and quantitative credit strength indicators in Section 12.1.1.2.

- (a) $\text{Final Unsecured Credit Limit} = \text{intermediate Unsecured Credit Limit from Step 5} * (0 - 100\%)$

12.1.1.2 Credit Strength Indicators

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In determining a Market Participant's Unsecured Credit Limit, the CAISO may rely on information gathered from financial reporting agencies, the general/financial/energy press, and provided by the Market Participant to assess its overall financial health and its ability to meet its financial obligations. Information considered by the CAISO in this process may include the following qualitative factors:

- (a) Applicant's history;
- (b) Nature of organization and operating environment;
- (c) Management;
- (d) Contractual obligations;
- (e) Governance policies;
- (f) Financial and accounting policies;
- (g) Risk management and credit policies;
- (h) Market risk including price exposures, credit exposures and operational exposures;
- (i) Event risk;
- (j) The state or local regulatory environment; and
- (k) Affiliate disclosure information provided pursuant to this CAISO Tariff, including Sections 4.14.2.1, 12.1.1, 39.9, and/or 39.11.1.

Material negative information in these areas may result in a reduction of up to one hundred percent (100%) in the Unsecured Credit Limit that would otherwise be granted based on the six-step process described in Section 12.1.1.1. A Market Participant, upon request, will be provided a written analysis as to how the provisions in Section 12.1.1.1 and this section were applied in setting its Unsecured Credit Limit.

12.1.1.3 Financial Statements

Market Participants requesting unsecured credit are required to provide financial statements so that a credit review can be completed. Based on availability, the Market Participant must submit a financial statement for the most recent financial quarter, as well as audited financial statements for the most recent three fiscal years, or the period of existence of the Market Participant, if

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shorter, to the CAISO or the CAISO's designee. If audited financial statements are not available, financial statements, as described below, should be submitted, signed and attested to by an officer of the Market Participant as a fair representation of the financial condition of the Market Participant in accordance with generally accepted accounting principles. The information should include, but is not limited to, the following:

- (a) If publicly traded:
 - (i) Annual and quarterly reports on Form 10-K and Form 10-Q, respectively
 - (ii) Form 8-K reports, if any
- (b) If privately held or governmentally owned:
 - (i) Management's discussion & analysis (if available)
 - (ii) Report of independent accountants (if available)
 - (iii) Financial statements, including:
 - Balance sheet
 - Income statement
 - Statement of cash flows
 - Statement of stockholder's equity
 - (iv) Notes to financial statements

If the above information is available electronically on the internet, the Market Participant may indicate in written or electronic communication where such statements are located for retrieval by the CAISO or the CAISO's designee.

12.1.1.4 Determination of Unsecured Credit Limits for Affiliates

If any Market Participant requesting or maintaining an Unsecured Credit Limit is affiliated with one or more other entities subject to the credit requirements of this Section 12, the CAISO may consider the overall creditworthiness and financial condition of such Affiliates when determining the applicable Unsecured Credit Limit. The maximum Unsecured Credit Limit specified in Section 12.1.1 applies to the combined activity of such Affiliates.

12.1.1.5 Notification of Material Change in Financial Condition

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Each Market Participant shall notify the CAISO in writing of a Material Change in Financial Condition, within five (5) Business Days of when the Material Change in Financial Condition is known or reasonably should be known by the Market Participant. Examples of a Material Change in Financial Condition may include, but are not limited to:

- a) A credit agency or Moody's Analytics equivalent rating downgrade to below investment grade;
- b) Being placed on a negative credit watch list by a major rating agency;
- c) A bankruptcy filing;
- d) Insolvency;
- e) The filing of a material lawsuit that could significantly and adversely affect past, current, or future financial results;
- f) Restatement of one or more financial statements for a prior year in a way that reduces the amount of unsecured credit that was previously provided;
- g) A default in another organized market for which any cure period has expired; or
- h) Any change in the financial condition of the Market Participant that exceeds a five (5) percent reduction in the Market Participant's Tangible Net Worth or Net Assets for the Market Participant's preceding fiscal year, calculated in accordance with generally accepted accounting practices.

The provision to the CAISO of a copy of a Form 10-K, Form 10-Q, or Form 8-K filed with the U.S. Securities and Exchange Commission shall satisfy the requirement of notifying the CAISO of such Material Change in Financial Condition if such Material Change in Financial Condition is identified in the Form 10-K, Form 10-Q, or Form 8-K. Alternatively, the Market Participant may direct the CAISO to the location of the information on their company website or the website of the U.S. Securities & Exchange Commission.

12.1.2 Financial Security And Financial Security Amount

A Market Participant that does not have an Unsecured Credit Limit, or that has an Unsecured Credit Limit that is less than its Estimated Aggregate Liability, shall post Financial Security that is acceptable to the CAISO and that is sufficient to ensure that its Aggregate Credit Limit (i.e., the

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sum of its Unsecured Credit Limit and Financial Security Amount) is equal to or greater than its Estimated Aggregate Liability. The Financial Security posted by a Market Participant may be any combination of the following types of Financial Security provided in favor of the CAISO and notified to the CAISO under Section 12.3:

- (a) an irrevocable and unconditional letter of credit issued by a bank or financial institution that is reasonably acceptable to the CAISO; or
- (b) a prepayment to the CAISO.

Financial Security instruments as listed above shall be in such form as the CAISO may reasonably require from time to time by notice to Market Participants, or in such other form as has been evaluated and approved as reasonably acceptable by the CAISO. The CAISO shall publish and maintain standardized forms related to the types of Financial Security listed above on the CAISO Website. The CAISO shall require the use of standardized forms of Financial Security to the greatest extent possible.

12.1.2.1 Additional Procedures Regarding Certain Types of Financial Security

Prepayments to the CAISO will be held in an interest-bearing account or another investment acceptable to the Market Participant and the CAISO, and interest on the investment will accrue at the rate as provided for in the investment. Interest will accrue to the Market Participant's benefit and will be added to the Market Participant's prepayment account on a monthly basis. Due to the additional administrative effort involved in tracking and posting interest on such prepayments, the use of this option is not encouraged.

12.1.2.2 Process for Evaluating Requests to Use Non-Standardized Forms of Financial Security

A Market Participant that seeks permission to use a form for Financial Security other than one or more of the standardized forms posted on the CAISO Website shall seek such permission in a written request to the CAISO that explains the basis for the use of such non-standardized form. The CAISO shall have ten (10) Business Days from receipt of such request to evaluate it and determine whether it will be approved as reasonably acceptable. If the CAISO does not respond to such request within the ten (10) Business Day period, the request shall be deemed to have

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been denied. Until and unless the CAISO approves the use of a non-standardized form for Financial Security, the Market Participant that submitted such request shall be required to use one of the standardized forms for Financial Security described in this Section 12.1.2.

12.1.2.3 Expiration of Financial Security

Each Market Participant shall ensure that the financial instruments it uses for the purpose of providing Financial Security will not expire and thereby cause the Market Participant's Aggregate Credit Limit to fall below the Market Participant's Estimated Aggregate Liability. The CAISO will treat a financial instrument that does not have an automatic renewal provision and that is not renewed or replaced within seven (7) days of its date of expiration as being out of compliance with the standards for Financial Security contained in this Section 12 and will deem the value of such financial instrument to be zero, and will draw upon such Financial Security prior to its stated expiration if deemed necessary by the CAISO.

12.1.2.4 Risk of Loss of Financial Security Amounts Held and Invested by the CAISO

In accordance with the CAISO's investment policy, the CAISO will invest each Financial Security Amount of a Market Participant only in bank accounts, money market accounts, and/or U.S. Treasury/Agency securities unless a specific written request is received from the Market Participant for a different type of investment and the CAISO provides its written consent to such alternative investment. A Market Participant that provides a Financial Security Amount that is held and invested by the CAISO on behalf of the Market Participant will bear all risks that such Financial Security Amount will incur a loss of principal and/or interest as a result of the CAISO's investment of such Financial Security Amount.

12.1.3 Estimated Aggregate Liability

The CAISO will periodically calculate the Estimated Aggregate Liability of each Market Participant, based on all charges and settlement amounts for which such Market Participant is liable or reasonably anticipated by the CAISO to be liable for pursuant to the CAISO Tariff. The Estimated Aggregate Liability for each Market Participant shall be determined and applied by the CAISO consistent with the procedures set forth in the applicable Business Practice Manual. The

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CAISO shall upon request provide each Market Participant with information concerning the basis for the CAISO's determination of its Estimated Aggregate Liability, and the CAISO's determination may be disputed in accordance with the procedures set forth in the applicable Business Practice Manual. The CAISO shall compare each Market Participant's Estimated Aggregate Liability against its Aggregate Credit Limit on a periodic basis.

12.1.3.1 Calculation of Estimated Aggregate Liability

12.1.3.1.1 Calculation of the EAL Amount

Except as described in Section 12.1.3.1.2, the CAISO shall use the method described in this Section 12.1.3.1.1 to calculate each Market Participant's Estimated Aggregate Liability (EAL). The Estimated Aggregate Liability represents the amount owed to the CAISO for all unpaid obligations, specifically, the obligations for the number of Trading Days outstanding at a given time based on the CAISO's Payments Calendar plus five (5) Trading Days based on the allowable period for Market Participants to respond to CAISO requests for additional Financial Security collateral (two (2) Business Days), and other liabilities including the value of a Market Participant's CRR portfolio, if negative. The charges the CAISO shall use to calculate Estimated Aggregate Liability shall be charges described or referenced in the CAISO Tariff. The CAISO shall calculate the Estimated Aggregate Liability for each Market Participant by aggregating the following obligations, including CRR liabilities even though such liabilities are secured separately:

- (a) invoiced amounts, i.e., any published but unpaid amounts on Invoices;
- (b) published amounts, i.e., amounts for Trading Days for which Settlement Statements have been issued;
- (c) estimated amounts, i.e., amounts based on estimated Settlement amounts calculated by the Settlement system using estimated meter data, and other available operational data;
- (d) extrapolated amounts, i.e., amounts calculated for Trading Days for which neither actual nor estimated Settlement Statements have been issued;

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- (e) CRR portfolio value, i.e., the prospective value of the CRR portfolio, if negative, as described in Section 12.6.3;
- (f) CRR Auction limit, i.e., the maximum credit limit for participation in a CRR Auction;
- (g) CRR Auction awards (prior to invoicing), i.e., amounts to cover winning offers at the completion of the CRR Auction but prior to invoicing;
- (h) Estimated Aggregate Liability adjustments resulting from Virtual Bid Submission Charges and the submission of Virtual Bids and/or receipt of Virtual Awards pursuant to Section 12.8;
- (i) past-due amounts, i.e., any unpaid or past due amounts on Invoices;
- (j) FERC Annual FERC Charges, i.e., FERC Annual Charges for a Market Participant that has elected to pay such amounts on an annual basis that are owed and outstanding and not already captured in any other component of Estimated Aggregate Liability;
- (k) WAC Charges, i.e., WAC amounts for the current year or future years as specified in Section 36.9.2;
- (l) Estimated Aggregate Liability adjustments, i.e., adjustments that may be necessary as a result of analysis performed as a result of Section 12.4.2; and
- (m) extraordinary adjustments, i.e., adjustments to Settlement amounts related to FERC proceedings, if known and estimated by the CAISO, as described in Section 12.1.3.1.3.

For a Market Participant that maintains multiple BAID numbers, the Estimated Aggregate Liability of the Market Participant as a legal entity shall be calculated by summing the Estimated Aggregate Liabilities for all such BAID numbers and comparing the sum of the Estimated Aggregate Liabilities to the Aggregate Credit Limit of the Market Participant. Market Participants may recommend changes to the liability estimates produced by the CAISO's Estimated Aggregate Liability calculation through the dispute procedures described in Section 12.4.2.

12.1.3.1.2 Calculation Methodology Applicable to New Market Participants

Each new Market Participant (and each Market Participant that has previously been inactive) is required to have an initial Aggregate Credit Limit that is sufficient to cover a minimum of forty-five (45) Trading Days of estimated obligations. This initial credit requirement is based on anticipated transactions in the CAISO Markets, and shall be considered to be equal to the Market Participant's Estimated Aggregate Liability until the CAISO obtains sufficient data from its automated calculation of Estimated Aggregate Liability as described in Section 12.1.3.1.1 to begin relying on that calculation.

12.1.3.1.3 Special Circumstances

12.1.3.1.3.1 Daily Adjustments and Disputes

Charges associated with daily adjustments and disputes that are regularly calculated by the CAISO Settlement system will be included in the CAISO's determinations of Estimated Aggregate Liability as the charges are calculated.

12.1.3.1.3.2 FERC Refund Orders

The CAISO will assess its ability to reasonably calculate the charges associated with a refund before the CAISO's Settlement system is re-run. If the CAISO can reasonably apportion the refund charges to specific Market Participants, it will include the amounts in its calculation of Estimated Aggregate Liability for those Market Participants and will request Financial Security from them accordingly. If the CAISO determines that complexities of a FERC refund order preclude the CAISO from reasonably being able to include refunds in its calculation of Estimated Aggregate Liability, the CAISO will not request Financial Security associated with the required refunds until the refunds are processed through the CAISO Settlement system. However, if feasible, the CAISO will make available to Market Participants, for informational purposes only, an aggregate forecast of the effect that providing the refunds will have on the CAISO's calculation of Estimated Aggregate Liability.

12.1.3.1.3.3 CAISO ADR Procedures

The CAISO will handle transactions associated with the CAISO ADR Procedures in the same manner as transactions associated with refunds provided pursuant to Section 12.1.3.1.3.2.

12.2 Review Of Creditworthiness

The CAISO may review the creditworthiness of any Market Participant that delays or defaults in making payments due under the CAISO Tariff and, as a consequence of that review, may require such Market Participant, whether or not it has an Unsecured Credit Limit, to provide credit support in the form of any of the following types of Financial Security:

- (a) an irrevocable and unconditional letter of credit by a bank or financial institution reasonably acceptable to the CAISO; or
- (b) a prepayment to the CAISO.

The CAISO may require the Market Participant to maintain such Financial Security for at least one (1) year from the date of such delay or default.

12.3 Posting And Releases Of Financial Security

Each Market Participant required to provide a Financial Security Amount under Section 12.1.2 shall notify the CAISO of the initial Financial Security Amount that it wishes to provide at least fifteen (15) days in advance and shall ensure that the CAISO has received such Financial Security Amount prior to the date the Market Participant commences activity through the CAISO, or the date the CRR Holder or Candidate CRR Holder participates in the applicable auction of CRRs. A Market Participant may at any time increase its Financial Security Amount by providing additional Financial Security in accordance with Section 12.1.2. A Market Participant may request that its Financial Security Amount be reduced or released by making its request not fewer than fifteen (15) days prior to the date on which the reduction or release is requested to occur. The CAISO shall evaluate the request and inform the Market Participant within ten (10) Business Days either that a reduction or release of the Financial Security Amount is permissible, that a reduction or release of the Financial Security Amount is impermissible, or that the CAISO requires more information from the Market Participant in order to make its determination. The CAISO may decline to reduce or release a Financial Security Amount or may release a lesser amount for any of the following reasons:

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- (a) The Estimated Aggregate Liability for the Market Participant cannot be accurately determined due to a lack of supporting Settlement charge information.
- (b) The most recent liabilities of the Market Participant are volatile to a significant degree and a reduction or release of the Financial Security Amount would present a high likelihood that, after the Financial Security Amount was reduced or released, the Estimated Aggregate Liability for the Market Participant, as calculated by the CAISO, would exceed its Aggregate Credit Limit.
- (c) The Market Participant has provided notice or otherwise demonstrated that it is terminating or significantly reducing its participation in the CAISO Markets. The CAISO may retain a portion of the Financial Security Amount to ensure that the Market Participant is adequately secured with respect to pending liabilities that relate to Settlement re-runs or other liabilities for which the Market Participant may be responsible under this CAISO Tariff.

12.3.1 Self-Supply Of UDC Demand

Notwithstanding anything to the contrary in the CAISO Tariff, a Scheduling Coordinator or UDC that is an Original Participating Transmission Owner or is a Scheduling Coordinator for an Original Participating Transmission Owner shall not be precluded by Section 12.3 from scheduling transactions that serve a UDC's Demand from

- (1) a resource that the UDC owns; and
- (2) a resource that the UDC has under contract to serve its Demand.

12.4 Calculation Of Ongoing Financial Security Requirements

Following the date on which a Market Participant commences trading, if the Market Participant's Estimated Aggregate Liability, as calculated by the CAISO, at any time exceeds its Aggregate Credit Limit, the CAISO shall direct the Market Participant to post an additional Financial Security Amount within two (2) Business Days that is sufficient to ensure that the Market Participant's

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Aggregate Credit Limit is at least equal to its Estimated Aggregate Liability. The CAISO shall also notify a Market Participant if at any time its Estimated Aggregate Liability exceeds ninety (90) percent of its Aggregate Credit Limit. For the purposes of calculating the Market Participant's Estimated Aggregate Liability, the CAISO shall include (1) outstanding charges for Trading Days for which Settlement data is available, and (2) an estimate of charges for Trading Days for which Settlement data is not yet available. To estimate charges for Trading Days for which Settlement data is not yet available, the CAISO will consider available historical Settlement data, and other available operational and market data as described in the applicable Business Practice Manual.

12.4.1 Resolution Of A CAISO Request For Additional Security Amount

A Market Participant has two (2) Business Days to resolve a CAISO request for additional Financial Security. Within the two (2) Business Days, the Market Participant must either demonstrate to the CAISO's satisfaction that the CAISO's Financial Security request is entirely or partially unnecessary, or post the required Financial Security Amount calculated by the CAISO. If the CAISO and the Market Participant are unable to agree on the appropriate level of Financial Security during two (2) Business Day review period, the Market Participant must post the additional Financial Security and may continue with the dispute process described in Section 12.4.2. Any excess Financial Security Amounts will be returned to the Market Participant if the dispute process finds in favor of the Market Participant.

12.4.2 Dispute Process For A Request For Additional Security Amount

Market Participants may dispute the Estimated Aggregate Liability calculated by the CAISO and, as a result, the CAISO may reduce or cancel a requested Financial Security adjustment. The following steps are required for a Market Participant to dispute a Financial Security request resulting from the CAISO's calculation of Estimated Aggregate Liability:

- (1) Request by the Market Participant to review the CAISO calculation.
- (2) A reasonable and compelling situation presented, as determined by the Market Participant's CAISO client representative.

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- (3) Documentation of facts and circumstances that evidence that the CAISO's calculation of Estimated Aggregate Liability results in an excessive and unwarranted Financial Security posting requirement.
- (4) Approval by the CAISO Manager and/or Director of Customer Services and Industry Affairs and approval by the CAISO Treasurer.
- (5) The CAISO may decline to adjust the initial Estimated Aggregate Liability, as calculated by the CAISO, if the Market Participant has had Financial Security shortfalls in the past twelve (12) months (i.e., it has been shown that the Market Participant's Aggregate Credit Limit at times during the preceding twelve (12) months has been insufficient to cover the Market Participant's Estimated Aggregate Liability).

In no such case shall a CAISO request for increased Financial Security remain outstanding for more than two (2) Business Days. Either the above process is to be completed within two (2) Business Days from the date of the CAISO request for additional Financial Security, or the Market Participant is to post additional Financial Security within the two (2) Business Days and continue this process, which may result in a return of posted Financial Security back to the Market Participant if the results of the dispute process are found to favor the Market Participant.

Factors for consideration in the event this dispute process is utilized include: weighing the risk of using the lower figure to the potential detriment of market creditors if the Market Participant is under-secured and defaults, against the desire not to impose additional potentially unwarranted costs on a Market Participant; equity and consistency of treatment of Market Participants in the dispute process; and the evidentiary value of the information provided by the Market Participant in the dispute process.

12.5 CAISO Enforcement Actions

12.5.1 Under-Secured and Non-Compliant Market Participants

If a Market Participant's Estimated Aggregate Liability, as calculated by the CAISO, at any time exceeds its Aggregate Credit Limit, or if a Market Participant fails to satisfy all of the minimum participation requirements set forth in Section 12.1 and does not cure that failure within thirty (30)

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days after notification of the failure by the CAISO, the CAISO may take any or all of the following actions:

- (a) The CAISO may withhold a pending payment distribution.
- (b) The CAISO may limit trading, which may include rejection of Bids, including Self-Schedules, rejection or cancellation of Inter-SC Trades in their entirety (i.e., both sides of the Inter-SC Trade) at any time, and/or limiting other CAISO Market activity, including limiting eligibility to participate in a CRR Allocation or CRR Auction. In such case, the CAISO shall notify the Market Participant of its action and the Market Participant shall not be entitled to participate in the CAISO Markets or CRR Auctions or submit further Bids, including Self-Schedules, or otherwise participate in the CAISO Markets until the Market Participant posts an additional Financial Security Amount that is sufficient to ensure that the Market Participant's Aggregate Credit Limit is at least equal to its Estimated Aggregate Liability.
- (c) The CAISO may require the Market Participant to post an additional Financial Security Amount in lieu of an Unsecured Credit Limit for a period of time.
- (d) The CAISO may restrict, suspend, or terminate the Market Participant's CRR Entity Agreement or any other service agreement.
- (e) The CAISO may resell the CRR Holder's CRRs in whole or in part, including any Long Term CRRs, in a subsequent CRR Auction or bilateral transaction, as appropriate.
- (f) The CAISO will not implement the transfer of a CRR if the transferee or transferor has an Estimated Aggregate Liability in excess of its Aggregate Credit Limit.

In addition, the CAISO may restrict or suspend a Market Participant's right to submit further Bids, including Self-Schedules, or require the Market Participant to increase its Financial Security

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Amount if at any time such Market Participant's potential additional liability for Imbalance Energy and other CAISO charges is determined by the CAISO to be excessive by comparison with the likely cost of the amount of Energy reflected in Bids or Self-Schedules submitted by the Market Participant.

12.5.2 Late Posting Of Financial Security

Each Market Participant that is late in posting Financial Security within two (2) Business Days as required by Section 12.4 will be subject to the following enforcement actions:

- (a) After each of the first two (2) times during a rolling twelve (12) month period that a Market Participant is late in posting additional Financial Security within two (2) Business Days as required by Section 12.4, the CAISO will send the delinquent Market Participant a warning notice.
- (b) After the third time during a rolling twelve (12) month period that a Market Participant is late in posting additional Financial Security, the CAISO may require the Market Participant to post an additional Financial Security Amount that is as high as the highest level of the Market Participant's Estimated Aggregate Liability during the preceding twelve (12) months. The CAISO will hold such additional Financial Security Amount for no fewer than twelve (12) months following the month in which the Market Participant's third delinquency occurs, and the CAISO may then return to the Market Participant all or a portion of such additional Financial Security Amount if, during the intervening time, the Market Participant has timely posted all further additional Financial Security Amounts requested by the CAISO and has timely paid all of the amounts set forth in the Invoices from the CAISO.
- (c) After the third time and each subsequent time during a rolling twelve (12) month period beginning no earlier than April 7, 2010 that a Market Participant is late in posting additional Financial Security, the CAISO will assess a penalty to the Market Participant equal to the greater of \$1,000 or two (2) percent of the additional Financial Security Amount that the Market Participant has been late in

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posting, up to a maximum amount of \$20,000 per each late posting for which the CAISO assesses a penalty pursuant to this Section 12.5.2(c). This penalty will be included in the next Invoice to the Market Participant. Penalty amounts collected by the CAISO pursuant to this Section 12.5.2(c) will be treated as set forth in Section 11.29.9.6.4.

- (d) After the fourth and any subsequent times during a rolling twelve (12) month period that a Market Participant is late in posting additional Financial Security, the CAISO may extend the time period that it holds all or a portion of the additional Financial Security Amount resulting from the Market Participant's third delinquency during a rolling twelve (12) month period as described in Section 12.5.2(b).
- (e) After the fifth time during a rolling twelve (12) month period beginning no earlier than April 7, 2010 that a Market Participant is late in posting additional Financial Security, the CAISO may, notwithstanding any other provision of the CAISO Tariff, (i) suspend any and all rights of the Market Participant under the CAISO Tariff, effective immediately after the CAISO sends written notice of the suspension to the Market Participant, and (ii) terminate any agreement entered into between the CAISO and the Market Participant that allows the Market Participant to participate in the CAISO Markets, effective upon the date the CAISO sends written notice of the termination to the Market Participant or upon the date established in accordance with FERC rules if FERC rules require the CAISO to file the notice of termination with FERC. If the CAISO sends a notice of suspension or termination to a Market Participant pursuant to this Section 12.5.2(e), the Market Participant will not have the right to prevent such suspension or termination by curing its late posting of additional Financial Security. The CAISO will, following termination of an agreement pursuant to this Section 12.5.2(e) and within thirty (30) days of being satisfied that no sums remain owing by the Market Participant under the CAISO Tariff, return or release

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to the Market Participant, as appropriate, any money or credit support provided by such Market Participant to the CAISO under Section 12.

- (f) Any time that a Market Participant is late in posting additional Financial Security, the CAISO may also take other enforcement actions as described in this Section 12 and in the applicable Business Practice Manual, if deemed necessary by the CAISO to protect the financial integrity of the CAISO Markets.

12.6 Credit Obligations Applicable To CRRs

12.6.1 Credit Requirements For CRR Allocations

Subject to applicable requirements of Section 36.9.2 concerning the prepayment of Wheeling Access Charges, Load Serving Entities eligible to participate in any CRR Allocation are not required to provide additional Financial Security in advance of a CRR Allocation.

12.6.2 Credit Requirements For CRR Auctions

12.6.2.1 Credit Requirements Applicable to an Entity Other than a Federal Agency

To establish available credit for participating in any CRR Auction, each CRR Holder or Candidate CRR Holder that is not a federal agency must satisfy the credit requirements set forth in Section 12.1 and provide Financial Security using one or more of the forms identified in Section 12.2 (a) through (e) to secure the right to participate in the CAISO's CRR Auctions as set forth below. In order to participate in an annual CRR Auction, the CRR Holder or Candidate CRR Holder must have Financial Security using one or more of the forms identified in Section 12.2 (a) through (e) in an amount that is the greater of \$500,000 or the sum of the maximum credit exposures of all of the CRR Holder's or Candidate CRR Holder's bids for CRRs submitted in the annual CRR Auction. In order to participate in a monthly CRR Auction, the CRR Holder or Candidate CRR Holder must have Financial Security using one or more of the forms identified in Section 12.2 (a) through (e) in an amount that is the greater of \$100,000 or the sum of the maximum credit exposures of all of the CRR Holder's or Candidate CRR Holder's bids for CRRs submitted in the monthly CRR Auction. The maximum credit exposure of a positively valued CRR bid is the maximum value of the CRR Holder's or Candidate CRR Holder's bid quantity (MW) multiplied by the sum of the bid price corresponding to the bid quantity and the Credit Margin of the CRR within

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the range of the minimum and maximum bid quantities submitted by the CRR Holder or Candidate CRR Holder. The maximum credit exposure of a negatively valued CRR bid is the maximum bid quantity (MW) submitted by the CRR Holder or Candidate CRR Holder multiplied by the Credit Margin of the CRR.

12.6.2.2 Credit Requirements Applicable to a Federal Agency

To establish available credit for participating in any CRR Auction, each CRR Holder or Candidate CRR Holder that is a federal agency must provide to the CAISO a letter, executed by an officer of the CRR Holder or Candidate CRR Holder, that satisfies all of the following requirements: (1) attests that the federal agency is lawfully authorized to participate in the CRR Auction and that any debt the federal agency incurs due to its participation in the CRR Auction is a debt of the United States; (2) identifies the current year's appropriations for the federal agency from the United States Congress; and (3) verifies that the amount of the current year's appropriations for the federal agency from the United States Congress meets or exceeds the amount required to satisfy the credit requirements set forth in Section 12.1. The provision of such an executed letter to the CAISO shall constitute sufficient Financial Security for the federal agency to participate in the CRR Auction.

12.6.2.3 Failure to Satisfy Credit Requirements

A CRR Holder or Candidate CRR Holder that fails to satisfy the credit requirements set forth in Section 12.6.2.1 or Section 12.6.2.2, as applicable, shall not be permitted to participate in the relevant CRR Auction, or shall have bids the entire CRR bid portfolio, consisting of one or more CRR bids, exceeding its available Financial Security as defined in this section for participation in the CRR Auction, in accordance with the above formula, rejected by the CAISO on a last-in, first-out basis. The CAISO will retain the CRR Auction proceeds for negatively valued CRRs and will apply them to credit requirements of the applicable CRR Holder.

12.6.3 Credit Requirements For The Holding Of CRRs

12.6.3.1 Credit Requirements Generally

- (a) Each CRR Holder that is not a federal agency, whether it obtains CRRs through a CRR Allocation or a CRR Auction, must maintain Financial

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Security utilizing one or more of the forms specified in Section 12.2 (a) through (e) that meets or exceeds the credit requirement of the CRR portfolio determined as described in this Section 12.6.3. Each CRR Holder that is a federal agency, whether it obtains CRRs through a CRR Allocation or a CRR Auction, must provide to the CAISO a letter, executed by an officer of the CRR Holder, that satisfies all of the following requirements: (1) attests that the federal agency is lawfully authorized to obtain the CRRs and that any debt the federal agency incurs due to holding the CRRs is a debt of the United States; (2) identifies the current year's appropriations for the federal agency from the United States Congress; and (3) verifies that the amount of the current year's appropriations for the federal agency from the United States Congress meets or exceeds the credit requirement for the CRR portfolio determined as described in this Section 12.6.3. The provision of such an executed letter to the CAISO shall constitute sufficient Financial Security for the federal agency to hold the CRRs.

- (b) Each CRR Holder shall be required to ensure that its Financial Security is sufficient to satisfy the credit requirements described in this Section 12.6.3. Except as provided in this paragraph, CRRs are evaluated on a portfolio basis as follows. If a CRR Holder owns more than one (1) CRR, such CRR Holder shall be subject to an overall credit requirement that is equal to the sum of the individual credit requirements applicable to each of the CRRs held by such CRR Holder, which is calculated after the MW associated with any Offsetting CRRs are netted out. If this sum is positive, the amount will be added to the CRR Holder's Estimated Aggregate Liability. However, if the sum is negative, the CRR Holder's Estimated Aggregate Liability shall not be reduced. If a CRR Holder holds one (1) or more CRRs obtained through a CRR Allocation and also

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holds one (1) or more CRRs obtained through a CRR Auction, the individual credit requirements applicable to any of the CRRs obtained through a CRR Allocation may not be netted against the individual credit requirements applicable to any of the CRRs obtained through a CRR Auction in determining such CRR Holder's Estimated Aggregate Liability.

- (c) The CAISO shall reevaluate the credit requirements for holding CRRs, and shall adjust the credit requirements accordingly, not less than monthly. The CAISO may adjust the credit requirements for holding CRRs with terms of one (1) year or less at the CAISO's discretion to account for changes in the monthly auction prices for CRRs and changes in the Historical Expected Values for CRRs, or more frequently than monthly if necessary if the CAISO finds that actual or anticipated market conditions indicate that CRR credit requirements may be inadequate to cover the financial risk of the CRRs. The CAISO may also adjust the credit requirements for holding Long Term CRRs annually to reflect the changes in auction prices of one-year CRRs in annual auctions and changes in the Historical Expected Values for CRRs, and to reflect updates to Credit Margins based on actual Locational Marginal Price data derived from market operations. Whenever the CAISO requests additional Financial Security from a Market Participant as a result of a change in CRR value that is not related to an adjustment due to the monthly CRR Auction Price or an adjustment related to Historical Expected Value, the CAISO will provide a written explanation of the reason for that request. Any additional Financial Security must be in one or more of the forms specified in Section 12.2 (a) through (e).
- (d) In cases where the ownership of a CRR is to be transferred through the Secondary Registration System, the CAISO shall evaluate and adjust the credit requirements for both the current owner of the CRR and the

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prospective owner of the CRR as appropriate prior to the transfer. If additional Financial Security is required from either the current or prospective owner, the transfer will not be completed until such Financial Security has been provided to and accepted by the CAISO. CRRs transferred through the Secondary Registration System will be treated like auctioned CRRs for the purpose of calculating the credit requirements for holding the CRRs, regardless of whether the CRRs were originally allocated or purchased at auction or acquired through the Secondary Registration System. CRRs assigned to Load-gaining or Load-losing Load Serving Entities as a result of Load Migration will be treated like allocated CRRs for the purpose of calculating the credit requirements for holding the CRRs. Any additional Financial Security must be in one or more of the forms specified in Section 12.2 (a) through (e).

12.6.3.2 Calculation of the Credit Amount Required to Hold a CRR With a Term of One Year or Less

Each CRR Holder that holds a CRR with a term of one year or less shall be subject to a credit requirement (\$/MW) equal to the negative of the most recent CRR Auction Price of such CRR or the Historical Expected Value of such CRR, whichever is lower, plus the Credit Margin for such CRR. The CRR Auction Price will be used until twelve (12) months of historical market operations data are available.

12.6.3.3 Calculation of the Credit Amount Required to Hold a Long Term CRR

Each CRR Holder that holds a Long Term CRR shall be subject to a credit requirement (\$/MW) equal to the negative of the most recent annual CRR Auction Price of a CRR with the same CRR Source and CRR Sink as the Long Term CRR or the Historical Expected Value of such a CRR, whichever is lower, plus the Credit Margin calculated for the CRR but with only a one-year term. If there is less than one year remaining in the term of a Long Term CRR, the credit requirement shall be determined pursuant to Section 12.6.3.2.

12.6.3.4 Calculation of Credit Margin

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The Credit Margin (\$/MW) for a CRR is equal to (i) the Expected Congestion Revenue minus (ii) the Fifth Percentile Congestion Revenue of such CRR. Both values will be based on the probability distribution of Congestion revenue of such CRR calculated using historical Locational Marginal Price data, when available, and proxy values, including data taken from Locational Marginal Price studies conducted by the CAISO, until such time as historical Locational Marginal Price data is available, with the details of such calculation published in a Business Practice Manual. The CAISO may reassess its determinations regarding the Credit Margin determination at any time and shall require additional Financial Security if the reassessment results in an increase in a CRR Holder's CRR credit requirements that are not covered by the CRR Holder's Financial Security. Any additional Financial Security must be in one or more of the forms specified in Section 12.2 (a) through (e)

12.6.4 Credit Requirements For Sales Of Allocated CRRs

Each Load Serving Entity that sells a CRR obtained through a CRR Allocation shall, as a prerequisite to the sale of any such CRR, have an Aggregate Credit Limit with a sufficient margin to cover the credit requirement for holding the Offsetting CRR that the Load Serving Entity would be responsible for assuming in the event of Load Migration from the Load Serving Entity to another Load Serving Entity pursuant to Section 36.8.5.3. The credit requirement for holding the Offsetting CRR will be included in the Estimated Aggregate Liability of the Load Serving Entity upon the transfer of the allocated CRR.

12.7 Credit Obligation Of New Responsible Utilities For RMR Costs

If a Responsible Utility first executed the TCA after April 1, 1998 (a New Responsible Utility) and if:

- (i) the senior unsecured debt of the New Responsible Utility is rated or becomes rated at less than A- from Standard & Poor's ("S&P") or A3 from Moody's Investment Services ("Moody's"), and
- (ii) Such ratings do not improve to A- or better from S&P or A3 or better from Moody's within 60 days,

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the New Responsible Utility shall issue and confirm to the CAISO an irrevocable and unconditional letter of credit in an amount equal to three times the highest monthly payment invoiced by the CAISO to the New Responsible Utility (or the prior Responsible Utility) in connection with services under Reliability Must-Run Contracts in the last 3 months for which invoices have been issued. The letter of credit must be issued by a bank or other financial institution whose senior unsecured debt rating is not less than A from S&P and A2 from Moody's. The letter of credit shall be in such form as the CAISO may reasonably require from time to time by notice to the New Responsible Utility and shall authorize the CAISO or the RMR Owner to draw on the letter of credit for deposit solely into the RMR Owner Facility Trust Account in an amount equal to any amount due and not paid by the Responsible Utility under the CAISO Invoice. The security provided by the New Responsible Utility pursuant to this Section is intended to cover the New Responsible Utility's outstanding liability for payments it is liable to make to the CAISO under this Section, including monthly payments, any reimbursement for capital improvement, termination fees and any other payments to which the CAISO is liable under Reliability Must-Run Contracts.

12.8 Credit Requirements Applicable to Virtual Bids

12.8.1 Credit Check in the Day-Ahead Market

12.8.1.1 Credit Check Requirements

For each Scheduling Coordinator that submits one or more Virtual Bids in the Day-Ahead Market, the CAISO will estimate the total value of all of the submitted Virtual Bids after the Virtual Bids have been validated in accordance with Section 30.7.3. In all circumstances except where the Scheduling Coordinator submits both a Virtual Supply Bid and a Virtual Demand Bid at the same Eligible PNode or Eligible Aggregated PNode for the same Trading Hour, the CAISO will estimate the total value of the submitted Virtual Bids at each Eligible PNode or Eligible Aggregated PNode for each Trading Hour by calculating the sum of the products of the absolute values of the MWs of the submitted Virtual Bids multiplied by the applicable Virtual Bid Reference Price at the Eligible PNode or Eligible Aggregated PNode for all Trading Hours. In circumstances where the Scheduling Coordinator submits both a Virtual Supply Bid and a Virtual Demand Bid at the same

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Eligible PNode or Eligible Aggregated PNode for the same Trading Hour, the CAISO will estimate the total value of the submitted Virtual Bids at the Eligible PNode or Eligible Aggregated PNode for the Trading Hour by calculating the greater of (i) the product of the absolute value of the MW of the submitted Virtual Supply Bid multiplied by the Virtual Bid Reference Price for Virtual Supply Bids at the Eligible PNode or Eligible Aggregated PNode or (ii) the product of the absolute value of the MW of the submitted Virtual Demand Bid multiplied by the Virtual Bid Reference Price for Virtual Demand Bids at the Eligible PNode or Eligible Aggregated PNode. The CAISO will then adjust the Scheduling Coordinator's Estimated Aggregate Liability to include the CAISO's estimate of the total value of the submitted Virtual Bids. If the adjusted Estimated Aggregate Liability is greater than the Scheduling Coordinator's Aggregate Credit Limit, the CAISO will reject the Scheduling Coordinator's submitted Virtual Bids. After rejection of its submitted Virtual Bids, a Scheduling Coordinator may submit revised Virtual Bids, subject to the timelines set forth in the CAISO Tariff and the applicable Business Practice Manual regarding the submission of Bids.

12.8.1.2 Temporary Suspension of Virtual Bidding

In the event that the financial exposure of Scheduling Coordinators cannot be determined pursuant to Section 12.8.1.1 with a reasonable degree of accuracy due to factors such as software or system failures, the CAISO may temporarily suspend virtual bidding. If the CAISO temporarily suspends virtual bidding pursuant to this Section 12.8.1.2, as soon as reasonably practicable, the CAISO will notify FERC and Market Participants of the reason(s) for any suspension of virtual bidding, the action(s) necessary to restore virtual bidding, and the estimated time required to restore virtual bidding. The CAISO does not intend to suspend virtual bidding in the event of brief intermittent software or system failures or where the CAISO anticipates the credit checking functionality will be available prior to the close of the Day-Ahead Market. During instances of software or system failures that extend past the close of the Day-Ahead Market and in the absence of any suspension of virtual bidding, the CAISO will accept pending Virtual Bids at the close of the Day-Ahead Market even though the Virtual Bids have not been validated by the credit checking functionality. Any resulting financial obligations will be included in the next available calculation of each Scheduling Coordinator's Estimated Aggregate Liability.

12.8.2 Virtual Bid Reference Prices

For Virtual Supply Bids, the Virtual Bid Reference Price will be the 95th percentile value of the difference between the LMP in the Real-Time Market and the LMP in the Day-Ahead Market at a given Eligible PNode or Eligible Aggregated PNode. For Virtual Demand Bids, the Virtual Bid Reference Price will be the 95th percentile value of the difference between the LMP in the Day-Ahead Market and the LMP in the Real-Time Market at a given Eligible PNode or Eligible Aggregated PNode. Each Virtual Bid Reference Price will be calculated in \$/MWh. The CAISO will calculate the Virtual Bid Reference Price for each Eligible PNode or Eligible Aggregated PNode for three-month periods (covering January-March, April-June, July-September, and October-December) of each year using the hourly actual LMPs for the same period of the previous year.

12.8.3 Adjustment of EAL After Close of the DAM

After the Day-Ahead Market closes but before the Real-Time Market closes, the CAISO will recalculate the estimate of the total liability of the Virtual Bids of each Scheduling Coordinator based on the MW quantity that cleared in the Day-Ahead Market. The revised total estimated liability will equal the sum of the products of the absolute values of the amounts of MWs of Virtual Awards multiplied by the Virtual Bid Reference Price. The CAISO will then adjust the Estimated Aggregate Liability of the Scheduling Coordinator to reflect the revised total estimated liability of the Virtual Bids as calculated by the CAISO.

12.8.4 Adjustment of EAL After the Close of the RTM

After the Real-Time Market closes, the CAISO will recalculate the total liability of each Scheduling Coordinator with Virtual Awards based on the MW quantity that cleared in the Day-Ahead Market and the LMPs produced in the Day-Ahead Market and Real-Time Market. The total liability of a Scheduling Coordinator will equal the sum of the liability of each Virtual Bid submitted by the Scheduling Coordinator that cleared in the Day-Ahead Market. The liability of a Virtual Supply Bid will equal the product of the value of the amount of cleared MWs multiplied by the difference between the Real-Time LMP and the Day-Ahead LMP at the Eligible PNode or Eligible Aggregated PNode at which the Virtual Supply Bid was submitted. The liability of a Virtual

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Demand Bid will equal the product of the value of the amount of cleared MWs multiplied by the difference between the Day-Ahead LMP and the Real-Time LMP at the Eligible PNode or Eligible Aggregated PNode at which the Virtual Demand Bid was submitted. The Estimated Aggregate Liability will be adjusted accordingly and will continue to be adjusted as a result of any price correction made in accordance with Section 35.