

**GOVERNMENT OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU**

NEPR

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IN RE: THE UNBUNDLING OF THE
ASSETS OF THE PUERTO RICO
ELECTRIC POWER AUTHORITY

CASE NO.: NEPR-AP-2018-0004

SUBJECT: Comments in Response to Questions
for Stakeholder Comment Regarding Order
Establishing Wheeling Tariffs and Further
Process.

**COMMENTS AND RESPONSES OF CIRCON ENERGY LLC TO THE
QUESTIONS FOR STAKEHOLDER COMMENT
REGARDING WHEELING SERVICES AGREEMENT AND APPLICATION FORM**

I. INTRODUCTION

In connection with ongoing proceedings regarding the deregulation and unbundling of the Puerto Rican electric system, on March 24, 2022, the Energy Bureau of the Puerto Rico Public Service Regulatory Board (“Energy Bureau”) issued an order (“March 24 Order”) seeking stakeholder comments addressing issues to consider in connection with development of a standardized “Wheeling Services Agreement,” as required by Section 6.02 of Regulation 9351.¹

Circon Energy LLC (“Circon”) is a global independent power producer, focused on developing innovative technologies which provide dispatchable, firm renewable energy. Circon’s solutions align with Puerto Rico’s stated goal of encouraging new investments in clean electricity generation for its electric grid and minimizing greenhouse gas emissions.

Circon welcomes the opportunity to provide comments in response to the Energy Bureau’s March 24 Order.² Circon submits its comments on its own behalf to advocate for future independent power producers (“IPPs”) who wish to participate in the Puerto Rico energy market. Circon shares a joint interest in creating a robust, competitive, resilient Puerto Rico energy grid to the benefit of all stakeholders. Circon therefore urges the Energy Bureau to fully appreciate the magnitude of this proceeding toward realizing a Puerto Rican energy market driven by investment in clean energy sources, and to seriously consider the comments submitted below that are necessary to make that happen.

II. RESPONSES TO THE QUESTIONS FOR STAKEHOLDER COMMENT

Circon respectfully submits comments in response to the questions set forth in Exhibit B to the March 24 Order. Each question is addressed in turn below.

¹ Section 6.02 of Regulation 9351 requires a stakeholder input process to ensure that a standard Wheeling Services Agreement is developed, along with the subject matter for such an agreement as well as the application form for a wheeling services agreement. See March 24 Order at p. 21.

² Circon submits these comments informally in the interest of providing the Energy Bureau with information that may assist it in its decision-making. Circon expressly reserves all rights to seek to intervene or otherwise participate as a party with all rights thereto.

1. Please provide any general comments on the list of requirements for a wheeling services agreement contained in Regulation 9351 and the additional issues raised specifically in this docket.

Independent Power Producers are a critical component of successfully fulfilling the goals of the Energy Bureau's initiative to bring meaningful and long-lasting reform to Puerto Rico's energy market. As the Energy Bureau's March 24 Order correctly summarizes, "[t]he wheeling mechanism is intended to drive new investments in cleaner electricity generation in Puerto Rico and provide customers with an economic alternative to traditional electricity supply, while protecting non-participating customers from adverse consequences."³

A. Comments regarding Regulation 9351 mandate that the wheeling services agreement contain all the "terms, conditions, and charges for wheeling service."⁴

First and foremost, development of a standardized set of terms and conditions governing wheeling service must allow for generating facilities to participate in wheeling as an independent power producer generator on a non-discriminatory basis. Therefore, Circon recommends in the strongest possible terms for the Energy Bureau to prioritize developing terms and conditions that require wheeling service be made available to participating generators in an open access, non-discriminatory manner.

The March 24 Order at page 18 states that "any generating facility that satisfies the requirements to interconnect to either the transmission or distribution system *should* be able to participate in wheeling as an independent power producer." The standard must be higher. Instead the Wheeling Agreement terms and conditions must embody the fundamental concept that an eligible generator *cannot be denied* being able to participate, if it elects to do so, and that the terms and conditions reflect this requirement. In addition, the Energy Bureau or other market monitor should have the authority to enforce or compel access to wheeling service if there is an unjust denial of a request for service.

Circon has reviewed tariff language commonly used by system operators in some of the largest, most sophisticated energy markets currently operating – including the CAISO market in California and the PJM market that operates across 13 states in the Mid-Atlantic – and has proposed throughout these comments potential language the Energy Bureau should use in establishing the terms and conditions of wheeling service.⁵

³ March 24 Order at p. 1.

⁴ Act 57-2014, Section 1.3 (uu) defines wheeling as follows: "the transmission of electricity from an independent power producer to the end customer through Puerto Rico's electric power grid and which does not constitute generation through any net metering mechanism."

⁵ The suggested contract and tariff language is intended to provide a roadmap or example for the Energy Bureau to consider. Where relevant, the language incorporates capitalized the defined terms used in Regulation 9351, Section 1.09.

Proposed contractual language:

- Nothing in this Wheeling Services Agreement is intended to change, supersede, or alter either Party's obligations to abide to provide open and non-discriminatory transmission and distribution system access in accordance with the terms herein.
- GridCo/PREPA, or any successor thereto, and any agent or designated representative thereof, shall operate its distribution and transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory access and meeting applicable reliability criteria.

B. Comment with respect to the other enumerated Regulation 9351 requirements

- "Conditions for ensuring that a Retail Electricity Supplier has sufficient generation."

To ensure there is sufficient supply, the Energy Bureau should emphasize the need for transparency by the utility to provide accurate load data. To that end, generators will be able to provide accurate information to the utility under the metering requirements determined in the March 24 Order to participate in wheeling service.

Moreover, the Wheeling Services Agreement should contemplate clear rules for daily scheduling, and for any real-time deviations the same day. The rules pertaining to self-scheduling should ensure that there are no artificial incentives that encourage specific types of transaction that rely on self-scheduling and GridCo should monitor self-scheduling so that reliability is not compromised by having an excess amount of self-scheduling in constrained regions of the Electric Power Grid.

Proposed contractual or tariff language:

- All Electric Power Generation Companies shall submit day-ahead schedules reflecting the physical operating characteristics. Each Electric Power Generation Companies shall inform GridCo, either directly or through an agent or operator, of any change or potential change in the current status of any generating units.
- Electric Power Generation Companies and/or IPPs ("Participating Generators") shall, in relation to each of their generating units, meet all applicable reliability criteria, including any standards regarding governor response capabilities, use of power system stabilizers, voltage control capabilities and hourly Energy delivery. Participating Generators shall will not inhibit the real power response of their generating units with governor controls by any means that would override the governor response except as necessary to address physical operational constraints for reasons that include ambient temperature limitations, outages of mechanical equipment or regulatory considerations.
- Participating Generators shall coordinate with the GridCo regarding plant control systems, locally or remotely controlled, so that they include frequency bias to ensure that each generator unit can respond immediately and automatically in proportion to frequency deviations to help restore frequency to the scheduled value.

- Unless otherwise agreed by the GridCo, a generating unit must be capable of operating at the capacity registered in the grid interconnection data, and shall follow the voltage schedules issued by GridCo or any successor system operator.

Further, the terms and conditions of the Wheeling Services Agreement, and the Electric Power Grid rules more generally, must not allow PREPA to impose discriminatory or burdensome costs on Electric Power Generating Companies or Retail Customers as a result of unplanned outages, derates, or other mechanical failures. The Energy Bureau can look to well-settled precedent under the Public Utilities Regulatory Act of 1978, which was intended to address the problem created by having a monopoly public utility require independent generators to purchase a supply of back-up power at an exorbitant price, thereby preventing new generation from entering the market.

- “The arrangements for metering, data exchange and billing, and charges thereof.”

Circon supports the March 24 Order requirement that a new generating facility must have metering equipment capable of hourly data recording at a minimum to be eligible for wheeling service. However, while that is sufficient for purposes of the wheeling agreement arrangement, wheeling service customers, generators, and all market participants (including GridCo and PREPA as well) should still be encouraged to adopt real-time communication and dispatch protocols as the Puerto Rican energy market develops further.

Proposed contractual or tariff language:

- Energy Resources participating in a Wheeling Service Agreements will be directly metered pursuant to a meter that complies with the applicable tariff requirements and any standards of the relevant Local Regulatory Authority
- Each Electric Power Generation Company shall ensure that each of its meters used to provide meter data to GridCo complies with the meter standards and accuracy requirements for meters set forth in the applicable tariff or Energy Bureau requirement. Such entities, at their cost, shall install and maintain, or cause to be installed and maintained, metering equipment and associated communication devices at their designated meter points to meet the requirements of the system operator.
- Procedures with respect to maintenance, testing, calibrating, correction and registration records, and precision tolerance of all metering equipment shall be in accordance with Good Utility Practice. The expense of testing any meter shall be borne by the party owning such meter, except that when a meter tested upon request of another party is found to register within the established tolerance the party making the request shall bear the expense of such test.
- *For additional metering language, see generally, CAISO Electric Tariff, Section 10 (included under Attachment A) and the PJM Operating Agreement, Section 14*

Access to customer billing data needs to be strictly controlled to prevent the incumbent utility from gaining any unfair advantages as a competitor power marketer.

Proposed contractual or tariff language:

- GridCo shall provide non-discriminatory access to information concerning the status of the Electric Power Grid or facilities that affect the Electric Power Grid by posting that information on a publicly accessible website, or other similar computer communications device, or by telephone or facsimile in the event of computer systems failure.
- GridCo shall maintain a publicly accessible Open Access Same-Time Information System, to deliver market operations and grid management information to accommodate users other than market participants.
- “The process for addressing any default in the provision of energy to a Wheeling Customer.”

Circon comments in this respect that termination by the utility of a wheeling service agreement should be subject to approval by an appropriate regulatory authority (see further discussion below for Question 7 regarding template wheeling service request form). Likewise, the terms of the wheeling service agreement should require PREPA to continue to perform under the agreement to provide wheeling services if there is an event of a default by the supplier unless termination of the agreement is approved.

- “Any other parameter established by the Energy Bureau through order.”

NERC planning requirements should be used to strengthen the reliability and resiliency of Puerto Rico’s grid, and the Energy Bureau should consider if this is an opportunity to develop and enforce reliability standards possibly adopting NERC as baseline with adjustments reflecting local considerations as needed.

Finally, attached in Attachment A is certain tariff extracts from CAISO and PJM that Circon respectfully submits to the Energy Bureau. PJM and CAISO collectively operate an electric grid along the east and west coast of the United States, accounting for over 50% of the total population of the United States. Circon believes the Energy Bureau can use these well-established markets to fulfill its statutory obligation to open up the Puerto Rico grid to energy suppliers other than PREPA, which in turn represents a significant step toward bringing long term, dramatic change to the Puerto Rico electric grid that will benefit the Commonwealth for the future.

2. Please provide any comments on the potential methods for establishing hourly balancing charges to be billed to retail electricity suppliers on a monthly basis as discussed in the March 24 Order.

As noted in the March 24 Order, without an organized wholesale energy market with real-time nodal or spot pricing, it is critical to develop a scheme for wheeling service that is not unduly restrictive, punitive, or unpredictable for retail electricity suppliers, which would be detrimental to market participants and consumers alike. A feasible method for accurately determining hourly marginal energy costs for the monthly balancing charges is therefore imperative. The March 24 Order at pp. 19-20 proposes alternative methodologies to determine the credit and balancing charges. Circon favors use of methodology A and reliance on actual marginal costs.

Method A: Actual Marginal Costs: LUMA would identify the marginal generation unit or units in each hour and record the marginal energy cost based on fuel and variable O&M costs per MWh. LUMA may develop these marginal costs for period of less than one hour if its information systems support those computations. The actual marginal cost information is then used to set the balancing charge.

Circon's recommended approach, which the Energy Bureau should adopt, is Method A because it will use data the most closely approximates *actual marginal costs*.

Method B: Estimated Marginal Costs: Use of an average cost per MWh of fuel and variable O&M costs for the most expensive category of fossil generation plants operating at that hour, in the following order: (1) the average cost per MWh for diesel-fueled plants, if any are generating in that hour; (2) the average for residual-fueled plants, if any such units are generating and no diesel-fueled plants are operating in that hour, or (3) the average cost per MWh for natural-gas-fired plants, including EcoElectrica, if no oil plants are generating.

Method B, on the other hand, is imprecise, uses inputs that are favorable to fossil generators, and would be subject to commodity risk based on variations in fuel costs. There is no practical justification for using unreliable and imprecise data, particularly when the Energy Bureau will use it to calculate imbalance charges.

If the Energy Bureau wants to drive investment in new, greener energy sources, Method A is the preferred choice and Circon strongly recommends the Energy Bureau adopt it for calculating hourly energy marginal costs.

3. Please comment on the design of annual imbalance charges for retail electricity suppliers.

- a. How should the imbalance charge vary with the annual difference between energy a supplier delivers to the LUMA system, and the energy required by its customers?**
- b. What is the amount of imbalance ("dead zone") should be allowed before the imbalance charge is triggered?**
- c. Should the phase-in for an imbalance "dead zone" be by calendar year or should the phase-in be separate for each retail electricity supplier?**

Circon fully supports the Energy Bureau's determination in the March 24 Order rejecting LUMA's proposal for the annual imbalance charge, correctly concluding it was not cost-based and would harm development of a robust market for wheeling services. With respect to the "important details" of the annual imbalance charge, the Energy Bureau should consider first and foremost ensuring that imbalance charges provide appropriate incentives to keep schedules accurate without being excessive.

The U.S. Federal Energy Regulatory Commission has provided three "principles" for transmission providers in designing imbalance charges: "(1) the charges must be based on incremental cost or some multiple thereof; (2) the charges must provide an incentive for accurate

scheduling, such as by increasing the percentage of the adder above (and below) incremental cost as the deviations become larger; and (3) the provisions must account for the special circumstances presented by intermittent generators and their limited ability to precisely forecast or control generation levels, such as waiving the more punitive adders associated with higher deviations.”⁶ Circon would support a design of the imbalance charges that adhere to these principles.

As for the amount of “dead zone” that should be allowed, Circon believes it should be no more than 30 days maximum. Circon believes the “dead zone” should be set separate for each retail electricity supplier, and that basing it by calendar year is arbitrary and should be avoided.

4. See pages 20-21 of Exhibit D (Proposal for Uniform Services Agreement Report by Guidehouse) to the Motion in Compliance with Resolution and Order entered on May 13, 2021. Is the proposal for different collateral requirements depending on a retail electricity supplier’s credit rating appropriate? What are the appropriate percentages of collateral that should be required depending on the entity’s credit rating?

Exhibit D of the Guidehouse report (see below) states that PREPA seeks to adopt the Energy Bureau’s credit term requirement that Energy Service Provider Companies (“ESPCs”) provide “a letter of credit for an estimate of one month of the IPP’s customers’ avoided fuel cost settlement and purchased power cost adjustment” but with certain modifications. The Energy Bureau should reject PREPA’s deviation from the Default Uniform Services Agreement as reflected in the Energy Bureau’s prior order regarding determining a credit requirement.

As a practical matter, PREPA’s proposed modifications have no bearing on an entity’s credit rating or its ability to meet payment obligations to GridCo and/or LUMA, who would be the counterparties to the Wheeling Services Agreement. Moreover, IPPs, as generating facilities, will be more likely to be receiving steady revenues, such as from PPAs offtakers, and thus would be expected to have a lower default risk or inability to post sufficient collateral. If anything, the Energy Bureau, if it does not reject outright PREPA’s proposal, it should instead direct PREPA to establish a collateral posting requirement based on fixed metrics and investment grade ratings (e.g., an amount reflecting no more than 3 month’s payment for service a wheeling service agreement). Upon entering into a Wheeling Service Agreement, parties could post performance assurance in the form of a letter of credit or surety bond if the entity or its parent were not investment grade credit worthy. There is no need to make this overly complex or needlessly impose expensive costs to maintain the collateral.

5. Please describe any factors or information that should be considered in establishing cost-based administrative charges to retail electricity suppliers (e.g., per month for each retail electricity suppliers and per-month for each wheeling customer account).

Circon believes that a per-month approach is appropriate. With respect to the information to be considered, the Energy Bureau should only need information to establish that such administrative costs are prudently incurred and that the administrative charge avoids “double collecting” for administrative services provided by both the market operator and the retail electric

⁶ *Preventing Undue Discrimination and Preference in Transmission Service*, Order 890, 121 FERC ¶ 61,297 (2007), at P 663.

suppliers. However, Circon would caution against creating burdensome or unnecessary filing or reporting requirements.

6. Please describe any other issues that the Energy Bureau should consider in the creation of a wheeling services agreement.

The March 24 Order states that issues regarding interconnection rights and procedures are beyond the scope of the current proceeding. That said, it will be critical that PREPA has an obligation to provide to interconnection to new generators on a non-discriminatory basis. Circon again urges the Energy Bureau to carefully consider ensuring that PREPA has a mandatory obligation to treat interconnection requests on a non-discriminatory basis, which is fundamental to the Energy Bureau's stated goals in developing the market. As noted above, the March 24 Order explains that wheeling service is intended to drive new investments in cleaner electricity generation in Puerto Rico. This of course is dependent on these generators being able to interconnect their facilities without discriminatory or burdensome costs.

The Energy Bureau should ensure that the wheeling agreements have sufficient terms and conditions governing the amount of advance notice and other conditions under which LUMA or PREPA can halt a wheeling transaction. Likewise, it should also specify the amount of advance notice generators and wheeling customers must give before increasing or decreasing the amount of power to be wheeled.

7. Please provide any general comments that the Energy Bureau should consider in establishing a wheeling services agreement application form.

The March 24 Order states that the wheeling service application form must include the following: "geographic location and interconnection point of the independent power producer facilities participating in wheeling; estimated quantity of power to be wheeled; and the anticipated wheeling customer locations to the extent available; and proposed commencement date and anticipated duration of the wheeling arrangement."

Finally, as discussed above, Circon believes it will be key for the Energy Bureau to develop terms and conditions for wheeling service on an open access, non-discriminatory manner. These same principles apply to the process that will be used by the system operator to evaluate requests for wheeling service as well. The application may vary depending on whether wheeling service is requested by a generating resource, retail electric supplier, or retail electric customer. However, wheeling service requests by generating resources should be relatively straightforward. The Energy Bureau should develop a simple, clear form to ease administrative processing burdens by seeking the minimum information necessary for GridCo to fairly evaluate the request for system operational purposes.

- *Proposed template agreement for Wheeling Service by a New Generating Resource:*

Request for Wheeling Service by a Generating Resource

Name of Requesting Entity: _____

Receipt Point (meter ID): _____

Primary Delivery Point(s) (meter ID or customer location, if known):

Meter ID: _____ kW: _____

Secondary Delivery Point (meter ID/customer location, if known)

Meter ID: _____ kW: _____

Commencement of Service: _____

Duration of Service: _____

Description of the source generating resource and output (MWs, type, etc.):

Description of generator's metering equipment demonstrating capability of hourly data recording at a minimum to be eligible for wheeling service: _____

GridCo shall review the Request for Wheeling Service in a non-discriminatory and non-preferential manner and make a determination in no later than 30 calendar days in accordance with the timeframes set forth under Regulation 9351, Section 8.02. The Requesting Entity shall be provided with the ability to request the Energy Bureau reconsider GridCo's determination in accordance with Regulation 9351, Section 8.03.

8. Please provide any comments on the establishment of a nonrefundable fee to be paid with the wheeling services agreement application form.

Circon notes that the March 24 Order does not provide any meaningful information what this fee is for, who it goes to. Absent further information, Circon believes that no more than \$500 is reasonable for a "processing fee."

III. COMMUNICATIONS

Communications regarding these Comments should be addressed to the following individuals, whom Circon respectfully requests also be included on the official service list for docket:

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IV. CONCLUSION

Circon welcomes the opportunity to provide the Energy Bureau with responses to the stakeholder questions contained in the March 24 Order and applauds the Energy Bureau in its efforts to date to transition the Puerto Rico energy grid in a meaningful way to the benefit of the Commonwealth as a whole. Circon wishes to put an integral part of that future by serving the Commonwealth and its electricity users in the future with dispatchable, firm renewable energy. But to do so, Circon must be able to participate on fair, non-discriminatory terms in an electric market that demonstrates a willingness to implement open access principles instead of preferential treatment to the PREPA and its aging fossil generators. A strong, robust, transparent wheeling service that is open to all new generating resources is a critical step in that direction.

Respectfully submitted,

/s/ Tim Brown

Circon Energy LLC

Dated: April 25, 2022

CAISO TARIFF

10. Metering

10.1 General Provisions

An entity seeking to provide or process Energy, Demand, or Ancillary Services in the CAISO Markets must provide the CAISO with Meter Data. Based upon its eligibility and election, an entity provides the CAISO with either (a) Revenue Quality Meter Data as a CAISO Metered Entity or (b) Settlement Quality Meter Data as a Scheduling Coordinator Metered Entity. Pursuant to Section 10.2, the CAISO directly polls CAISO Metered Entities' certified revenue quality meters to acquire Revenue Quality Meter Data. Pursuant to Section 10.3, Scheduling Coordinators for Scheduling Coordinator Metered Entities collect and provide the CAISO with Settlement Quality Meter Data.

10.1.1 Role of the CAISO

The CAISO is responsible for establishing and maintaining the Revenue Meter Data Acquisition and Processing System (RMDAPS) and the Settlement Quality Meter Data Systems (SQMDS). RMDAPS will acquire Revenue Quality Meter Data for use in the CAISO's Settlement and billing process, and SQMDS acquires Scheduling Coordinators' Settlement Quality Meter Data. The CAISO is also responsible for the following for CAISO Metered Entities:

- (a) setting standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters and Meter Data servers; and
- (b) establishing procedures for the collection, security, validation and estimation of Meter Data.

10.1.2 Meter Data Retention by the CAISO

The CAISO will maintain a record of all Revenue Quality Meter Data and Settlement Quality Meter Data provided to it, as well as the Settlement Quality Meter Data it produces, for a period of 18 months on site at the CAISO's facilities and for a period which, at least, allows for the re-run of data as required by this CAISO Tariff and any adjustment rules of the Local Regulatory Authority governing the Scheduling Coordinators and their End-Use Customers and FERC. The CAISO will, on reasonable notice, provide a Scheduling Coordinator with access to Settlement Quality Meter Data (actual or Scheduling Coordinator estimated) provided that the Scheduling Coordinator requesting access represented the entity for which that data was provided at the time the data was provided to the CAISO.

10.1.3 Netting

CAISO Metered Entities and Scheduling Coordinator Metered Entities may net Station Power only to the extent allowed by the Local Regulatory Authority and as provided below.

10.1.3.1 Permitted Netting

CAISO Metered Entities and Scheduling Coordinators may, when providing Meter Data to the CAISO, net kWh or MWh values for output and Station Power electrically connected at the same point, provided that the resource is on-line and producing sufficient output to serve all of its Station Power. Where permitted by the Local Regulatory Authority, CAISO Metered Entities and Scheduling Coordinators may, when providing Metered Data to the CAISO, include Station Power within the resource's wholesale Demand or output below zero (for dispatches to charge a storage resource, for example).

10.1.3.2 Prohibited Netting

CAISO Metered Entities or Scheduling Coordinators may not net values for output and Load that is not Station Power. CAISO Metered Entities or Scheduling Coordinators that serve third party Load connected to a resource's auxiliary system must add that third party Load to the resource or Generating Unit's output. Where a resource's Load or Station Power is served via a distribution line that is separate from the switchyard where the resource is connected, that resource and its Load and/or Station Power will not be considered to be electrically connected at the same point. The CAISO Metered Entity may add that third party Load to the resource's output either by means of a hard wire local meter connection between the metering systems of the third party Load and the resource or by requesting the CAISO to use RMDAPS to perform the addition. Scheduling Coordinators representing Scheduling Coordinator Metered Entities that serve third party Load connected to the auxiliary system of a resource must ensure that those Scheduling Coordinator Metered Entities add the Energy consumed by such third parties to output so as to ensure proper settlement of the gross output. The CAISO Metered Entity or the Scheduling Coordinator must ensure that the third party Load has Metering Facilities that meet the standards referred to in this Section 10 and the Business Practice Manuals.

10.1.3.3 Permitted Netting for a Net Scheduled Generating Unit or a QF

A Generating Unit that is a QF subject to an Existing QF Contract is subject to the revenue metering requirements set forth in the Existing QF Contract for the QF and is not subject to the revenue metering

requirements of Section 10. A QF Generating Unit that is not operating under the terms of an Existing QF Contract is subject to the metering requirements of Section 10 prohibiting the net metering of Generation and Load, except if it is subject to a Net Scheduled PGA. A Generating Unit that is a QF or a CHP Resource and that operates under the terms of a Net Scheduled PGA is eligible for net metering treatment. Notwithstanding Section 10.1.3.2, a Participating Generator with a Net Scheduled PGA may net the value for the Generation produced by each Net Scheduled Generating Unit listed in its Net Scheduled PGA and the value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled Generating Unit and (ii) electrically located on the same side of the Point of Demarcation. The Participating Generator with a Net Scheduled PGA may satisfy the provisions of Section 10 for the installation of revenue metering by installing Metering Facilities at the Point of Demarcation; provided that the installed Metering Facilities satisfy the technical, functional, and performance requirements for Metering Facilities set forth in Section 10 and the applicable Business Practice Manual.

10.1.3.4 Storage Resources

Pursuant to Section 10.1, storage resources must provide the CAISO with either (a) Revenue Quality Meter Data as a CAISO Metered Entity or (b) Settlement Quality Meter Data as a Scheduling Coordinator Metered Entity. Storage resources participating in the CAISO markets may not charge their resources pursuant to a CAISO wholesale rate except to provide Energy or Ancillary Services to the CAISO Markets upon discharge. To ensure that storage resources do not incur wholesale charges from the CAISO duplicative of any retail charges:

- (a) CAISO Metered Entities' revenue quality meters must be installed and programmed to exclude any retail Meter Data.
- (b) Scheduling Coordinator Metered Entities' SQMD Plans must describe how the Metered Entity's metering arrangement or Validation, Estimation, and Editing procedure prevents commingling retail and CAISO Meter Data.

Nothing in this Section 10.1.3.4 should be interpreted as prohibiting a CAISO storage resource's ability to participate in retail markets or net its Station Power from output pursuant to Section 10.1.3.2.

Effective October 1, 2020, for any storage resource where the Utility Distribution Company or retail utility verifies in writing to the CAISO that it is unable or unwilling to net out from its retail billing any energy

Attachment A - Tariff Examples
California Independent System Operator Corporation
Fifth Replacement FERC Electric Tariff

purchases associated with the storage resource's charging pursuant to CAISO settlement, the CAISO will not settle the storage resource's negative Energy for charging. Scheduling Coordinators for such a storage resource must still include negative Energy for charging in the storage resource's Meter Data.

10.1.4 Meter Service Agreements

A CAISO Metered Entity shall enter into a Meter Service Agreement for CAISO Metered Entities with the CAISO. A Scheduling Coordinator representing a Scheduling Coordinator Metered Entity shall enter into a Meter Service Agreement for Scheduling Coordinators. If a CAISO Metered Entity is also a Scheduling Coordinator, it shall be treated as a CAISO Metered Entity for the purposes of this Section 10 and will be required to enter into a Meter Service Agreement for CAISO Metered Entities. A CAISO Metered Entity will not be required to enter into a Meter Service Agreement for Scheduling Coordinators unless it represents any Scheduling Coordinator Metered Entities. A Meter Service Agreement for Scheduling Coordinators entered into by a CAISO Metered Entity shall only apply to those Scheduling Coordinator Metered Entities that the CAISO Metered Entity represents; the Meter Service Agreement for Scheduling Coordinators shall not apply to the CAISO Metered Entity other than in its capacity as Scheduling Coordinator for those Scheduling Coordinator Metered Entities.

10.1.5 Access to Meter Data

The CAISO has complete authority over all rights of access to (and has authority to deny access to) the CAISO's RMDAPS and Settlement Quality Meter Data Systems including servers (where used), interface equipment, and software needed to collect the relevant information for Settlement, billing and related purposes. Each Market Participant acknowledges this CAISO authority as a condition of CAISO Controlled Grid service and participation. For CAISO Metered Entities, authority over the sealing of meters, and all related Metering Facilities, shall reside solely with the CAISO for all CAISO designated Meter Points, regardless of any remote electronic access that a CAISO Metered Entity or its Scheduling Coordinator may have provided to third parties, except as otherwise may be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a CAISO Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such CAISO Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for CAISO Metered Entities, but shall not be disclosed to any other third

party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a Scheduling Coordinator for a Scheduling Coordinator Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such Scheduling Coordinator Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for Scheduling Coordinators, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Access by third parties other than authorized users to Meter Data held by the CAISO shall be coordinated through the Scheduling Coordinator that provided the Meter Data or that is representing the relevant CAISO Metered Entity that supplied the data and shall not be obtained directly from the CAISO on any basis including, without limitation, by accessing the RMDAPS.

10.1.6 Failure of CAISO Facilities or System

In the event facility and/or systems failures impact the CAISO's ability to accept, collect, and process Revenue Quality Meter Data or Settlement Quality Meter Data, alternative measures may be required by the CAISO, CAISO Metered Entities, and Scheduling Coordinator Metered Entities. These measures are described in the applicable Business Practice Manual.

10.1.7 Provision of Statistically Derived Meter Data

A Demand Response Provider representing a Reliability Demand Response Resource or a Proxy Demand Resource may submit a written application to the CAISO for approval of a methodology for deriving Settlement Quality Meter Data for the Reliability Demand Response Resource or Proxy Demand Resource that consists of a statistical sampling of Energy usage data, in cases where interval metering is not available for the entire population of underlying service accounts for the Reliability Demand Response Resource or Proxy Demand Resource. As specified in the Business Practice Manual, the CAISO and the Demand Response Provider will then engage in written discussion which will result in the CAISO either approving or denying the application.

10.2 Metering for CAISO Metered Entities

CAISO Metered Entities' revenue quality meters will be directly polled by the CAISO's RMDAPS as specified in this CAISO Tariff and Business Practice Manuals.

10.2.1 Responsibilities of CAISO Metered Entities

10.2.1.1 Duty to Provide Revenue Quality Meter Data

CAISO Metered Entities shall ensure that Revenue Quality Meter Data from their meters directly connected to the CAISO Controlled Grid or at interconnections thereto, including interconnections between utility Service Areas which have separate UFE calculations, is made available to the CAISO RMDAPS in accordance with the requirements of this Section 10 and the Business Practice Manuals.

10.2.1.2 Format for Data Submission

CAISO Metered Entities must ensure that the Meter Data obtained by the CAISO directly from their revenue quality meters is raw, unedited and unaggregated Meter Data in kWh and kVarh values, as specified in the applicable Business Practice Manual. The CAISO will be responsible for the Validation, Estimation and Editing of that Meter Data in order to produce Settlement Quality Meter Data.

10.2.1.3 Provision of and Access to Settlement Quality Meter Data

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the CAISO Metered Entities they represent by directly accessing the Settlement Quality Meter Data Systems as specified in the applicable Business Practice Manual.

- For CAISO Metered Entities, Revenue Quality Meter Data obtained by successfully polled meters will be validated, estimated and edited by the CAISO to produce Settlement Quality Meter Data (actual), which will be made available to Scheduling Coordinators within seven (7) Business Days from the Trading Day (T+7B) and will be used in the Initial Settlement Statement T+9B calculation.
- In the event that Revenue Quality Meter Data remains unavailable at 10:00am on the seventh (7) Business Day after the Trading Day (T+7B) due to unsuccessfully polled meters or facility and/or systems failures, the CAISO will estimate Settlement Quality Meter Data for CAISO Metered Entities for any outstanding metered Demand and/or Generation for the Initial Settlement Statement T+9B calculation as provided in Section 11.29.7.1.1.
- If the CAISO is notified in accordance with Section 10.2.13.2 that the revenue quality meter for a CAISO Metered Entity requires repair, the CAISO will produce Settlement

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Quality Meter Data (actual) for that entity using the estimation procedures referred to in Section 10.2.9, which will be made available to the Scheduling Coordinator for the CAISO Metered Entity within fifty-two (52) Business Days from the Trading Day (T+52B) and will be used in the Recalculation Settlement Statement T+70B calculation.

10.2.2 Duty to Install and Maintain Meters

CAISO Metered Entities, at their cost, shall install and maintain, or cause to be installed and maintained, metering equipment and associated communication devices at CAISO-designated Meter Points to meet the requirements of this Section 10 and the applicable Business Practice Manuals. The CAISO may require CAISO Metered Entities to install, at the cost of CAISO Metered Entities, additional meters and relevant metering system components, including Real-Time metering, at CAISO-specified Meter Points or other locations as deemed necessary by the CAISO, in addition to those connected to or existing on the CAISO Controlled Grid at the CAISO Operations Date. In directing the addition of meters and metering system components that would impose increased costs on a CAISO Metered Entity, the CAISO shall give due consideration to whether the expected benefits of such equipment are sufficient to justify such increased costs. Nothing in this Section 10 shall preclude CAISO Metered Entities from installing additional meters, instrument transformers and associated communications facilities not deemed necessary by the CAISO at their own cost. A CAISO Metered Entity may not commence installing such additional Metering Facilities until the CAISO has approved the CAISO Metered Entity's Proposal for Installation. If a CAISO Metered Entity installs such additional metering, such metering must: (i) be installed and maintained at the CAISO Metered Entity's cost and (ii) not unduly interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to poll directly that meter.

10.2.3 Metering Standards

Each CAISO Metered Entity shall ensure that each of its meters used to provide Meter Data to the CAISO complies with the meter standards and accuracy requirements for meters set forth in this CAISO Tariff and the applicable Business Practice Manuals.

10.2.4 Certification of Meters

Each CAISO Metered Entity that makes Meter Data available to the CAISO shall ensure that Metering

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Facilities used to produce such Meter Data have been certified by the CAISO as meeting the requirements of Section 10. Certification of the relevant Metering Facilities shall only be provided upon the production of such evidence as the CAISO may reasonably require to demonstrate that the facilities in question have been documented, inspected and successfully tested by the CAISO or a CAISO Authorized Inspector for conformance to the standards and accuracy requirements referred to in the Business Practice Manuals and this Section 10. CAISO certification pursuant to this Section 10.2.4 shall not relieve the CAISO Metered Entity from the obligation to ensure that its Metering Facilities continue to remain in compliance with the requirements of this CAISO Tariff and the applicable Business Practice Manuals.

10.2.4.1 Requesting Certification

A CAISO Metered Entity seeking certification of its Metering Facilities shall independently engage a CAISO Authorized Inspector to perform certification of its Metering Facilities. A CAISO Metered Entity may request the CAISO to perform the certification of its Metering Facilities if it would be impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector to perform the certification. The CAISO may refuse any such request by a CAISO Metered Entity if it is of the opinion that it is not impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector.

10.2.4.2 Certification by the CAISO

All requests made to the CAISO to perform the certification of Metering Facilities must be made in accordance with the certification process for Metering Facilities and technical specifications published in the Business Practice Manuals and be accompanied by the documents referred to in the applicable Business Practice Manual. If the CAISO agrees to perform the certification of Metering Facilities, the CAISO and that CAISO Metered Entity will agree the terms and conditions on which the CAISO will undertake the certification, including the assistance to be provided by the CAISO Metered Entity, the responsibility for costs and the indemnities to be provided.

10.2.4.3 Criteria for Certification

Subject to any exemption granted by the CAISO, the criteria for certifying the Metering Facilities of CAISO Metered Entities pursuant to the CAISO Tariff are the criteria set forth in the Business Practice Manuals.

10.2.4.4 Certificate of Compliance

If the Metering Facilities satisfy the certification criteria as specified in this CAISO Tariff and in the Business Practice Manuals (after taking into account any exemptions to the certification criteria granted by the CAISO), the CAISO will issue a Certificate of Compliance of those Metering Facilities to the CAISO Metered Entity.

Subject to any exemption granted by the CAISO under this CAISO Tariff, the CAISO will not accept Revenue Quality Meter Data from a CAISO Metered Entity unless that Revenue Quality Meter Data is produced by Metering Facilities that are certified in accordance with this CAISO Tariff and the CAISO Metered Entity has a current Certificate of Compliance.

10.2.4.5 Obligation to Maintain Certification

CAISO Metered Entities must ensure that their Metering Facilities continue to comply with the certification criteria referred to in the CAISO Tariff and the Business Practice Manuals.

10.2.4.6 Revocation of Certification

The CAISO may revoke in full or in part any Certificate of Compliance if:

- (a) it has reasonable grounds to believe that all or some of the Metering Facilities covered by that Certificate of Compliance no longer meet the certification criteria for Metering Facilities contained in the CAISO Tariff and the Business Practice Manuals; and
- (b) it has given written notice to the relevant CAISO Metered Entity stating that it does not believe that the identified Metering Facilities meet the certification criteria (including the reasons for that belief) and that CAISO Metered Entity fails to satisfy the CAISO, within the time period specified in the CAISO's notice, that the Metering Facilities meet the certification criteria.

If the CAISO revokes in full or part a Certificate of Compliance, the relevant CAISO Metered Entity may seek recertification of the relevant Metering Facilities by requesting certification. Such request must indicate that it relates to Metering Facilities in respect of which the CAISO has previously revoked a Certificate of Compliance.

10.2.4.7 Changes to Certified Metering Facilities

The CAISO's approval must be obtained before any modifications or changes are made to any Metering Facilities of a CAISO Metered Entity which have been certified pursuant to the CAISO Tariff. The CAISO may, at its discretion, require those Metering Facilities to be recertified.

10.2.5 CAISO Authorized Inspectors

10.2.5.1 Published List of Inspectors

The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and details of the procedure for applying to become a CAISO Authorized Inspector. The CAISO will, on request, provide a copy of that list to entities that do not have access to the CAISO Website.

10.2.5.2 Current Certificates

It is the responsibility of the relevant CAISO Metered Entity to ensure that any inspector it engages to undertake the certification of its Metering Facilities is a CAISO Authorized Inspector at the time of inspection.

10.2.6 Metering Communications

The CAISO's RMDAPS shall collect and process Revenue Quality Meter Data made available by CAISO Metered Entities pursuant to Meter Service Agreements for CAISO Metered Entities and the applicable Business Practice Manual. Revenue Quality Meter Data for CAISO Metered Entities shall be made available to the CAISO's RMDAPS as specified in the applicable Business Practice Manual directly by the CAISO Metered Entity. Revenue Quality Meter Data on the CAISO's RMDAPS may be provided or made accessible to other CAISO systems as deemed necessary by the CAISO, subject to the CAISO being satisfied that such access by such authorized uses and/or systems will not adversely affect the security of the data held by the CAISO. CAISO Metered Entities shall ensure that their Metering Facilities are compatible with the CAISO's RMDAPS for these purposes. The CAISO may, at its discretion, exempt a CAISO Metered Entity from the requirement to make Revenue Quality Meter Data directly available to the CAISO's RMDAPS, for example, where the installation of communication links is unnecessary, impracticable or uneconomic. The CAISO shall maintain the RMDAPS and remedy any faults occurring in such system. Scheduling Coordinators and other authorized users requiring Settlement Quality Meter

Data for CAISO Metered Entities may obtain such data by accessing the CAISO's Settlement Quality Meter Data Systems in accordance with the CAISO Tariff and applicable Business Practice Manuals. Scheduling Coordinators and other authorized users shall not poll the CAISO revenue meters for any other purpose, unless specifically authorized in the Meter Service Agreement for CAISO Metered Entities.

10.2.7 Format of Meter Data

CAISO Metered Entities shall make available to the CAISO's RMDAPS Revenue Quality Meter Data meeting the format requirements of this Section 10 and in accordance with the Business Practice Manual standards and other information reasonably required by the CAISO.

10.2.8 Security and Meter Data Validation Procedures

The applicable Business Practice Manuals shall specify, in such detail as the CAISO may deem necessary, the Meter Data security and validation procedures that the CAISO shall apply to the Revenue Quality Meter Data made available by each CAISO Metered Entity. The CAISO may base the security and validation procedures on historical data or an appropriate alternative data source. The CAISO shall correct or replace or cause to be corrected or replaced inaccurate or missing data. The procedure may include data correction and substitution algorithms which shall estimate, substitute and flag such inaccurate or missing data. Any necessary correction or replacement shall be approved by the CAISO prior to the data being sent to the CAISO for Settlement purposes. Security and validation measures for existing Tie Point Meters shall be consistent with existing arrangements with the operators in adjacent Balancing Authority Areas. Any additional measures or changes to the existing arrangements shall only be implemented upon mutual agreement of the CAISO and the operator in the adjacent Balancing Authority Area.

10.2.8.1 Meter Site Security

Metering Facilities of CAISO Metered Entities and secondary devices that could have any impact on the performance of the Metering Facilities must be sealed by the CAISO or a CAISO Authorized Inspector.

10.2.8.2 Third Party Access to Meters

10.2.8.2.1 Local Access

If a CAISO Metered Entity desires to grant a third party local access to its revenue quality meters, those meters must be equipped with CAISO approved communications capabilities in accordance with the

applicable Business Practice Manuals. The CAISO may set the password and any other security requirements for locally accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO may alter the password and other requirements for locally accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for locally accessing their revenue quality meters. CAISO Metered Entities must not give a third party other than its Scheduling Coordinator local access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval as set forth in a schedule to the Meter Service Agreement for CAISO Metered Entities which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

10.8.2.2.2 Remove Access

The CAISO may set the password and any other security requirements for remotely accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO will alter the password and other requirements for remotely accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for remotely accessing their revenue quality meters.

CAISO Metered Entities must not give a third party other than its Scheduling Coordinator remote access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval as set forth in a schedule to the Meter Service Agreement for CAISO Metered Entities which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

10.2.8.3 Third Party Access Withdrawn

If, in the reasonable opinion of the CAISO, access granted to a third party by a CAISO Metered Entity in

any way interferes or impedes with the CAISO's ability to poll any revenue quality meter, the CAISO may require that CAISO Metered Entity to immediately withdraw any access granted to a third party.

10.2.8.4 SQMDS Security

The CAISO will provide any needed information to entities that are permitted to access SQMDS. The CAISO must maintain the security and integrity of Revenue Quality Meter Data brought into SQMDS.

10.2.9 Validation, Estimation and Editing of Meter Data

Subject to any exemption granted by the CAISO, Revenue Quality Meter Data that CAISO Metered Entities provide to the CAISO will be processed using the Validation, Estimation and Editing procedures published in the Business Practice Manuals in order to produce Settlement Quality Meter Data.

10.2.9.1 Obligation to Assist

At the request of the CAISO, CAISO Metered Entities shall assist the CAISO in correcting or replacing defective data and in detecting and correcting underlying causes for such defects. Such assistance shall be rendered in a timely manner so that the Settlement process is not delayed.

10.2.9.2 Availability of Meter Data

Subject to any exemption granted by the CAISO, Meter Data of CAISO Metered Entities must be recorded at 5-minute intervals and will be collected in accordance with the provisions of the applicable Business Practice Manual. The CAISO may also collect Meter Data on demand as provided in the applicable Business Practice Manual.

10.2.9.3 [Not Used]

10.2.9.4 [Not Used]

10.2.10 Low Voltage Side Metering

10.2.10.1 Requirement for CAISO Approval

CAISO Metered Entities may only install revenue quality meters on the low voltage side of step-up transformers if they have obtained the prior approval of the CAISO in accordance with Section 10.2.10.

CAISO Metered Entities that have installed low voltage side metering, whether such installation was before or after the CAISO Operations Date, shall apply the Transformer and Line Loss Correction Factor in accordance with Section 10.2.10.4.

10.2.10.2 Request for Approval

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If a CAISO Metered Entity wishes to install low voltage side metering, it shall submit a written request to the CAISO. That CAISO Metered Entity must:

- (a) request approval to apply the Transformer and Line Loss Correction Factor to its revenue quality meter or request approval to have the CAISO apply the Transformer and Line Loss Correction Factor;
- (b) provide detailed reasons to support the request for low side metering;
- (c) provide all of the information in relation to the Transformer and Line Loss Correction Factor required by the Business Practice Manuals; and
- (d) any other information reasonably requested by the CAISO.

10.2.10.3 CAISO's Grounds for Approval

The CAISO shall approve a request made under Section 10.2.10.2 only if the CAISO is satisfied that adequate accuracy and security of Revenue Quality Meter Data obtained can be assured in accordance with Section 10.2.10. The CAISO's rejection of such a request may be referred to the CAISO ADR Procedures if, after using all reasonable good faith efforts, the CAISO and a CAISO Metered Entity are unable to reach agreement.

10.2.10.4 Application of Transformer and Line Loss Correction Factor

CAISO Metered Entities will apply the Transformer and Line Loss Correction Factor as set forth in the Business Practice Manuals. If the CAISO has approved a request from a CAISO Metered Entity for RMDAPS to apply the Transformer and Line Loss Correction Factor, RMDAPS will apply the Transformer and Line Loss Correction Factor set forth in the Business Practice Manuals. If the CAISO applies the Transformer and Line Loss Correction Factor, the CAISO may require the CAISO Metered Entity to pay the reasonable costs incurred by it in applying the Transformer and Line Loss Correction Factor.

10.2.11 Audit, Testing Inspection and Certification Requirements

CAISO Metered Entities are subject to CAISO audit, testing and certification requirements for their entire metering system(s), including all relevant communication facilities and instrument transformers. The CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the CAISO Metered Entity or a CAISO Authorized Inspector engaged by the CAISO Metered Entity or the CAISO to carry out those audits or tests.

10.2.12 Exemptions

The CAISO has the authority to grant exemptions from certain CAISO metering standards for a CAISO Metered Entity, as set forth in Section 10.4. A CAISO Metered Entity with a temporary exemption shall provide site specific Revenue Quality Meter Data to the CAISO in accordance with its Meter Service Agreement for CAISO Metered Entities and the CAISO Tariff. A Generating Unit that provides Regulatory Must-Take Generation with an Existing QF Contract or an Amended QF Contract that is connected directly to a Distribution System and that sells its entire output to the UDC or in the MSS in which the Generating Unit is located is not subject to the audit, testing or certification requirements of the CAISO.

10.2.13 Maintenance of Metering Facilities

10.2.13.1 Duty to Maintain Metering Facilities

CAISO Metered Entities must maintain their Metering Facilities so that those Metering Facilities continue to meet the standards prescribed by the CAISO Tariff and the applicable Business Practice Manuals.

10.2.13.2 Repairs

If a revenue quality meter of a CAISO Metered Entity requires repairs to ensure that it operates in accordance with the requirements of the CAISO Tariff and the applicable Business Practice Manuals, the CAISO Metered Entity must immediately notify the CAISO of the need for repairing that meter and must ensure that those repairs are completed in accordance with the applicable Business Practice Manual. During periods for which no Revenue Quality Meter Data is available from a meter which has a current Certificate of Compliance, the CAISO will create and provide access to Settlement Quality Meter Data for use in the Settlement Statement calculations, as provided in Section 10.2.1.3.

10.2.14 Installation of Additional Metering Facilities

10.2.14.1 CAISO Requirement to Install Additional Metering

If the CAISO determines that there is a need to install additional Metering Facilities on the CAISO Controlled Grid pursuant to Section 10.2.2, it will notify the relevant CAISO Metered Entity of that need and will process the CAISO Metered Entity's Proposal for Installation in accordance with the applicable Business Practice Manual.

10.2.14.2 CAISO Metered Entities' Election to Install Additional Metering

In accordance with Section 10.2.2, a CAISO Metered Entity may choose to install additional metering,

including Backup Meters. If a CAISO Metered Entity installs such additional metering, such metering must, unless the CAISO agrees otherwise:

- (a) be installed and maintained at the CAISO Metered Entity's cost;
- (b) be located on the CAISO Metered Entity's side of any primary meter; and
- (c) not interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to directly poll that meter.

Any Meter Data produced by any such additional metering may be used by the CAISO for Settlement and billing purposes in the event of the failure, or during tests or repairs of, the primary meter provided that such additional metering has a current Certificate of Compliance, the CAISO Metered Entity gives the CAISO prior verbal notice that such meter will be used and the period for which it will be used and, if the primary meter is directly polled by the CAISO, the additional metering must also be capable of being directly polled by the CAISO.

10.3 Metering For Scheduling Coordinator Metered Entities

10.3.1 Applicability

The requirements set forth in this Section 10.3 shall apply only to Scheduling Coordinators representing Scheduling Coordinator Metered Entities. The requirements in Section 10.1 also apply to Scheduling Coordinators. If a Scheduling Coordinator Metered Entity is also a Scheduling Coordinator, it shall be treated as a Scheduling Coordinator for the purposes of Section 10 and any references to entities that such a Scheduling Coordinator represents shall be deemed to include that Scheduling Coordinator itself.

10.3.2 Responsibilities of Scheduling Coordinators and the CAISO

10.3.2.1 Duty to Provide Settlement Quality Meter Data

Scheduling Coordinators shall be responsible for: (i) the collection of Meter Data for the Scheduling Coordinator Metered Entities it represents; (ii) the provision of Settlement Quality Meter Data to the CAISO; and (iii) ensuring that the Settlement Quality Meter Data supplied to the CAISO meets the requirements of Section 10. Scheduling Coordinators shall provide the CAISO with Settlement Quality Meter Data for all Scheduling Coordinator Metered Entities served by the Scheduling Coordinator no later than the day specified in Section 10.3.6 or the day specified in Section 10.3.6.4, as applicable.

Settlement Quality Meter Data for these Scheduling Coordinator Metered Entities shall be an accurate

measure of the actual production or consumption of Energy by each Scheduling Coordinator Metered Entity in each Settlement Period.

10.3.2.1.1 Requirements of SCs Representing Demand Response Providers

Each Scheduling Coordinator for a Demand Response Provider shall aggregate the Settlement Quality Meter Data of the underlying Proxy Demand Resource or Reliability Demand Response Resource to the level of the registration configuration of the Proxy Demand Resource or Reliability Demand Response Resource in the Demand Response System. Settlement Quality Meter Data for these Scheduling Coordinator Metered Entities shall be (1) an accurate measure of the actual consumption of Energy by each Scheduling Coordinator Metered Entity in each Settlement Period; (2) the resulting Demand Response Energy Measurement calculated using a performance evaluation methodology for Proxy Demand Resources or Reliability Demand Response Resources; or (3) statistically derived meter data pursuant to Section 10.1.7.

10.3.2.1.2 Requirements for SCs Representing Distributed Energy Resource Aggregations

Each Scheduling Coordinator for a Distributed Energy Resource Aggregation shall aggregate the Settlement Quality Meter Data of the underlying Distributed Energy Resources to the level of the Distributed Energy Resources Aggregation provided in the Distributed Energy Resource Provider Agreement. Settlement Quality Meter Data for these Scheduling Coordinator Metered Entities shall be an accurate measure of the actual production or consumption of Energy by each Distributed Energy Resource that comprises a Distributed Energy Resource Aggregation in each Settlement Period. Scheduling Coordinators shall retain Settlement Quality Meter Data of each Distributed Energy Resource comprising a Distributed Energy Resource Aggregation for a period of at least three (3) years and shall provide this information to the CAISO as may be reasonably requested from time to time by the CAISO.

10.3.2.2 Format for Data Submission

Scheduling Coordinators shall submit Settlement Quality Meter Data to the Settlement Quality Meter Data System for the Scheduling Coordinator Metered Entities they represent using one of the CAISO's approved Meter Data Exchange Formats. Subject to any exemption granted by the CAISO, Scheduling Coordinators must ensure that Settlement Quality Meter Data submitted to the CAISO is in intervals of five (5) minutes for EIM Interties, Loads providing Ancillary Services, and Generators providing Ancillary

Services. Scheduling Coordinators for EIM Participating Resources or for Generators not providing Ancillary Services may elect to submit Meter Data in 5-minute or 15-minute intervals. Scheduling Coordinators for all other Scheduling Coordinator Metered Entities may elect to submit Meter Data in 5-minute, 15-minutes, or 60-minute intervals. Elections will be recorded by the CAISO, and may not be deviated from or revised except by application. The elected interval may not be a granularity lower than what may be programmed on the Scheduling Coordinator Metered Entity's physical meter(s) or as specified in the applicable Business Practice Manual.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data in kWh or MWh values for all of the Scheduling Coordinator Metered Entities for which it is responsible, aggregated by the applicable market or resource level. Scheduling Coordinators are not required to submit values in the absence of Supply, Demand, or other participation in the CAISO Markets.

10.3.3 Loss Factors

Where a Scheduling Coordinator Metered Entity is connected to a UDC's Distribution System, the responsible Scheduling Coordinator shall adjust the Meter Data by an estimated Distribution System loss factor to derive an equivalent CAISO Controlled Grid level measure. Such estimated Distribution System loss factors shall be approved by the relevant Local Regulatory Authority prior to their use.

10.3.4 Load Profile Authorization

Scheduling Coordinators shall be responsible for obtaining all necessary authorizations of Approved Load Profiles from Local Regulatory Authorities having jurisdiction over the use of profiled Meter Data and shall use Approved Load Profiles in any Settlement process in which Load profiles are used to allocate consumption to Settlement Periods.

10.3.5 Communication of Meter Data

Each Scheduling Coordinator shall submit Settlement Quality Meter Data for Scheduling Coordinator Metered Entities to the CAISO in accordance with Section 11.29.24.1, Section 37.5, and applicable Business Practice Manuals.

10.3.6 Settlement Quality Meter Data Submission

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Scheduling Coordinators shall submit to the CAISO Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data, as provided in Section 10.3.6.2(a), for Scheduling Coordinator Metered Entities they represent for each Settlement Period in an Operating Day according to the timelines established in Section 10.3.6.2 and the CAISO Payments Calendar and as provided in the applicable Business Practice Manual. Scheduling Coordinators must also submit Settlement Quality Meter Data (actual and Scheduling Coordinator estimated) on demand as provided in the applicable Business Practice Manual.

10.3.6.1 [Not Used]

10.3.6.2 Timing of SQMD Submission for Calculation of Initial Settlement Statement T+9B

Scheduling Coordinators must submit Actual Settlement Quality Meter Data or Estimated Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO no later than 10:00am on the seventh (7) Business Day after the Trading Day (T+7B) for the Initial Settlement Statement T+9B calculation. Scheduling Coordinators can submit Estimated Settlement Quality Meter Data for Demand Response Resources.

- (a) In the absence of Actual Settlement Quality Meter Data, Scheduling Coordinators may submit Scheduling Coordinator Estimated Settlement Quality Meter Data using interval metering when available, sound estimation practices, and other available information including, but not limited to bids, schedules, forecasts, temperature data, operating logs, recorders, and historical data. Scheduling Coordinator Estimated Settlement Quality Meter Data must be a good faith estimate that reasonably represents Demand and/or Generation quantities for each Settlement Period.
- (b) When Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data is not received by the CAISO for a Scheduling Coordinator Metered Entity within seven (7) Business Days from the Trading Day (T+7B), the CAISO will estimate the entity's Settlement Quality Meter Data for any outstanding metered Demand and/or Generation, including Demand Response Resources, for use in the Initial Settlement Statement T+9B calculation, as provided in Section 11.29.7.1.

10.3.6.3 Timing of SQMD Submission for Recalculation Settlement Statement T+70B

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Scheduling Coordinators must submit Actual Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO no later than midnight on the fifty-second (52) Business Day after the Trading Day (T+52B) for the Recalculation Settlement Statement T+70B calculation. A Scheduling Coordinator that timely submits Actual Settlement Quality Meter Data for the Initial Settlement Statement T+9B pursuant to Section 10.3.6.2 may submit revised Actual Settlement Quality Meter Data for the Recalculation Settlement Statement T+70B no later than the fifty-second (52) Business Day after the Trading Day pursuant to this Section.

- (a) When Actual Settlement Quality Meter Data is not received by the CAISO for a Scheduling Coordinator Metered Entity by fifty-two (52) Business Days after the Trading Day (T+52B), the Scheduling Coordinator has failed to submit complete and accurate meter data as required by Section 37.5.2.1 and will be subject to monetary penalty pursuant to Section 37.5.2.2.
- (b) Any Scheduling Coordinator Estimated Settlement Quality Meter Data submitted by a Scheduling Coordinator on behalf of the Scheduling Coordinator Metered Entities it represents that is not replaced with Actual Settlement Quality Meter Data by fifty-two (52) Business Days after the Trading Day (T+52B) has failed to submit complete and accurate meter data as required by Section 37.5.2.1 and will be subject to monetary penalty pursuant to Section 37.5.2.2. In the absence of Actual Settlement Quality Meter Data, Scheduling Coordinator Estimated Settlement Quality Meter Data will be used in the Recalculation Settlement Statements.
- (c) The CAISO will not estimate a Scheduling Coordinator Metered Entity's Settlement Quality Meter Data for any outstanding metered Demand and/or Generation for use in a Recalculation Settlement Statement T+70B calculation. Any previous CAISO Estimated Settlement Quality Meter Data that the Scheduling Coordinator does not replace with Actual Settlement Quality Meter Data by fifty-two (52) Business Days after the Trading Day (T+52B) will be set to zero. A Scheduling Coordinator that fails to replace CAISO Estimated Settlement Quality Meter Data with Actual Settlement Quality Meter Data by fifty-two (52) Business Days after the Trading Day (T+52B) has failed to provide complete

and accurate Settlement Quality Meter Data as required by Section 37.5.2.1 and will be subject to monetary penalty pursuant to Section 37.5.2.2.

10.3.6.4 Timing of SQMD Submission for Recalculation Settlement Statement T+11M

Scheduling Coordinators may submit Actual Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO for use in Recalculation Settlement Statement T+11M up to two hundred and fourteen Business Days after the Trading Day (T+214B). Scheduling Coordinators submitting Actual Settlement Quality Meter Data after fifty-two Business Days after the Trading Day (T+52B) have failed to provide complete and accurate Settlement Quality Meter Data as required by Section 37.5.2.1 and will be subject to monetary penalty pursuant to Section 37.5.2.2. Any Actual Settlement Quality Meter Data that is submitted by a Scheduling Coordinator after T+214B, will be rejected by the CAISO and not used in settlement calculations.

**10.3.6.5 Submission of Actual Settlement Quality Meter Data or Scheduling Coordinator
Estimated Settlement Quality Meter Data for Reliability Demand Response
Resources that Provide Demand Response Services in Real-Time**

Each Scheduling Coordinator for a Demand Response Provider representing a Reliability Demand Response Resource that provides Demand Response Services only in Real-Time shall submit Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for the Reliability Demand Response Resource by 10:00am of the seventh Business Day after the Trading Day (T+7B) on which the Demand Response Services were provided, including Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for a Demand Response Event and for the forty-five (45) calendar days preceding the Trading Day for use in the CAISO's calculation of the Customer Load Baseline pursuant to Section 4.13.4.

10.3.6.6 Auditing by CAISO for Demand Response Providers

To ensure accuracy and compliance with the CAISO tariff, the CAISO will have the right to audit Meter Data submitted by Scheduling Coordinators to establish performance evaluation methodologies pursuant to Section 4.13.4 or Demand Response Energy Measurements pursuant to Section 11.6.

10.3.7 Meter Standards

Each Scheduling Coordinator, in conjunction with the relevant Local Regulatory Authority, shall ensure

that each of its Scheduling Coordinator Metered Entities connected to and served from the Distribution System of a UDC shall be metered by a revenue meter complying with any standards of the relevant Local Regulatory Authority or, if no such standards have been set by that Local Regulatory Authority, the metering standards set forth in this CAISO Tariff and as further detailed in the Business Practice Manuals.

10.3.7.1 SQMD Plan

For Scheduling Coordinator Metered Entities that were not participating as such before April 10, 2017, or that repower, modify their Meter Data interval, or add generating capacity after April 10, 2017, the Scheduling Coordinators must submit an SQMD Plan to ensure that the Scheduling Coordinator will submit and maintain the integrity of Meter Data submitted to the CAISO for that Scheduling Coordinator Metered Entity. The SQMD Plan will describe how the Scheduling Coordinator will collect, maintain, aggregate, and submit Settlement Quality Meter Data in accordance with CAISO Tariff and, where applicable, Local Regulatory Authority metering and settlement standards. SQMD Plans will include detailed descriptions of the following, as applicable, for each Scheduling Coordinator Metered Entity or Scheduling Coordinator Metered Entity aggregation or calculation:

- (1) The type, programming, and configuration of all associated metering devices;
- (2) How the Scheduling Coordinator or its agent will collect, validate, aggregate, and submit associated Meter Data;
- (3) Single-line diagrams with professional engineer stamps (or equivalent) depicting the physical elements and relationships among the metering device(s);
- (4) Any calculation or algorithm to derive Settlement Quality Meter Data from the metering device(s);
- (5) Process for aggregating individual Scheduling Coordinator Metered Entities and/or Resource IDs; and
- (6) Plans and schedules to perform regular tests of the metering devices and audit the associated Meter Data pursuant to CAISO Tariff requirements.

Proxy Demand Resources and Reliability Demand Response Resources may satisfy this requirement through the demand response registration process.

10.3.7.2 CAISO Review of SQMD Plan

The CAISO must approve a Scheduling Coordinator Metered Entity's SQMD Plan before the Scheduling Coordinator may submit Bids on its behalf in the CAISO Markets.

10.3.7.3 SQMD Plan Modifications

Scheduling Coordinator Metered Entities may propose for CAISO approval modifications to approved SQMD Plans. So long as the Scheduling Coordinator Metered Entity remains in compliance with its existing SQMD Plan, or where the proposed modification intends to bring the Scheduling Coordinator Metered Entity into compliance, the associated Scheduling Coordinator may continue to submit Meter Data for settlement while the CAISO reviews the SQMD Plan modifications.

10.3.7.4 SQMD Plan Audits and CAISO Remedies

In addition to the CAISO's audit rights pursuant to this Section 10, the CAISO may perform audits or inspections to ensure that Scheduling Coordinators and Scheduling Coordinator Metered Entities have implemented and comply with their SQMD Plans. Based on an audit, inspection, or other information, the CAISO will determine whether the Scheduling Coordinator Metered Entity must modify its SQMD Plan or is subject to penalty under the CAISO Tariff, including conversion to a CAISO Metered Entity.

10.3.7.5 Annual Affirmation

In addition to the auditing and testing requirements contained in its SQMD Plan, on an annual basis the Scheduling Coordinator Metered Entity must perform a self-assessment and affirm to the CAISO, in writing, that it has implemented and continues to comply with its SQMD Plan. Where the Scheduling Coordinator Metered Entity performs a self-assessment and determines that it will not be able to affirm its compliance to the CAISO, the Scheduling Coordinator Metered Entity will describe the issue to the CAISO and its plan to remedy the issue. The associated Scheduling Coordinator may continue to submit Meter Data for settlement while the CAISO reviews the plan to remedy the issue. Proxy Demand Resources and Reliability Demand Response Resources that have satisfied the SQMD Plan requirement

through the demand response registration process are not required to submit an annual affirmation.

10.3.8 Access to Meter Data

The CAISO has complete authority over rights of access to (and has authority to deny access to) its Settlement Quality Meter Data Systems by Scheduling Coordinators and Scheduling Coordinator Metered Entities for Settlement, billing and related purposes. Each Scheduling Coordinator, on behalf of itself and Scheduling Coordinator Metered Entities that it serves or represents, acknowledges this CAISO authority as a condition of access to the CAISO Controlled Grid. Meter Data of a Scheduling Coordinator Metered Entity remains the property of that Scheduling Coordinator Metered Entity and shall be made available to third parties only with its express permission or the permission of its Scheduling Coordinator or as otherwise required by law or provided for in this CAISO Tariff.

10.3.9 Certification of Meters

Scheduling Coordinators shall ensure that revenue meters and related Metering Facilities of those Scheduling Coordinator Metered Entities whom they represent are certified in accordance with any certification criteria prescribed by the relevant Local Regulatory Authority or, if no such criteria have been prescribed by that Local Regulatory Authority, certified in accordance with this Section 10. Scheduling Coordinators shall upon request of the CAISO supply promptly copies of all certificates issued by the relevant Local Regulatory Authority. Scheduling Coordinators of a Distributed Energy Resource Aggregation for which no Local Regulatory Authority criteria have been prescribed for Metering Facilities may self-certify that their Metering Facilities meet the default certification criteria set forth in the CAISO Business Practice Manual. The End-Use Meter of a Scheduling Coordinator Metered Entity in place as of the CAISO Operations Date is deemed to be certified as in compliance with this CAISO Tariff and Business Practice Manuals. Once certified, meters for Scheduling Coordinator Metered Entities need not be recertified provided such meters are maintained so as to meet the standards and accuracy requirements prescribed by any relevant Local Regulatory Authority or, if no such standards have been prescribed by that Local Regulatory Authority, such requirements as referred to in the Business Practice Manuals and this Section 10. Recertification is not required by the CAISO upon an election by a Scheduling Coordinator Metered Entity to change its Scheduling Coordinator from which it takes service.

10.3.10 Requirement for Audit and Testing

10.3.10.1 Audit and Testing by Scheduling Coordinator

At least every two years, each Scheduling Coordinator shall (or engage an independent, qualified entity to conduct) audit and test the Metering Facilities of the Scheduling Coordinator Metered Entities that it represents and the Meter Data provided to the Scheduling Coordinator in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority and the Scheduling Coordinator Metered Entity's SQMD Plan. Scheduling Coordinators shall undertake any other actions that are reasonably necessary to ensure the accuracy and integrity of the Settlement Quality Meter Data (actual or Scheduling Coordinator estimated) provided by them to the CAISO.

10.3.10.2 Audit and Testing by CAISO

Subject to any applicable Local Regulatory Authority requirements, the Metering Facilities and data handling and processing procedures of Scheduling Coordinators and Scheduling Coordinator Metered Entities are subject to audit and testing by the CAISO or a CAISO Authorized Inspector. Subject to any applicable Local Regulatory Authority requirements, the CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or a CAISO Authorized Inspector engaged by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or the CAISO to carry out those audits or tests.

10.3.11 Scheduling Coordinator to Ensure Certification

If the relevant Local Regulatory Authority has not prescribed any certification criteria for the Metering Facilities of a Scheduling Coordinator Metered Entity, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must promptly notify the CAISO in writing that no such criteria have been prescribed. Where applicable, this notification may be included in the Scheduling Coordinator Metered Entity's SQMD Plan. Consistent with Section 10.3.9, Scheduling Coordinators of a Distributed Energy Resource Aggregation for which no Local Regulatory Authority criteria have been prescribed for Metering Facilities may self-certify that their Metering Facilities meet the default certification criteria set forth in the CAISO Business Practice Manual or their SQMD Plan.

10.3.11.1 Confirmation of Certification

On the written request of the CAISO, each Scheduling Coordinator must give the CAISO written

confirmation that the Metering Facilities of each Scheduling Coordinator Metered Entity that it represents are certified in accordance with either the criteria of the relevant Local Regulatory Authority, the Scheduling Coordinator Metered Entity's SQMD Plan, and/or the criteria prescribed by the CAISO Tariff and Business Practice Manuals within five (5) Business Days of receiving a request from the CAISO.

10.3.11.2 Deemed Certification

Revenue quality meters of Scheduling Coordinator Metered Entities that are subject to certification and which were installed and operational as of the CAISO Operations Date will be deemed to be certified for the purposes of the CAISO Tariff. Revenue quality meters that have been fully installed as of the CAISO Operations Date but which are not operational as of that date because they were undergoing maintenance or repairs will also be deemed to be certified in accordance with the CAISO Tariff.

10.3.12 [Not Used]

10.3.13 [Not Used]

10.3.14 Approval By LRA Of Security And Validation Procedures

Scheduling Coordinators shall be responsible for obtaining any necessary approval of the relevant Local Regulatory Authority to its proposed security, validation, editing and estimation procedures. The CAISO will not perform any Validation, Estimation and Editing on the Settlement Quality Meter Data it receives from Scheduling Coordinators.

10.3.14.1 UDC and TO Agreements

Each Scheduling Coordinator shall be responsible for obtaining any necessary consent from the UDCs on whose Distribution Systems or the Participating TOs on whose transmission facilities the Scheduling Coordinator has Scheduling Coordinator Metered Entities as is necessary to give effect to the procedures governing Meter Data validation and security and inspection and testing of Metering Facilities.

Scheduling Coordinators must verify with the relevant UDC and/or Participating TO the identity of each Scheduling Coordinator Metered Entity they represent and must notify the UDC and/or Participating TO of any discrepancies of which they become aware. Where UDCs or Participating TOs serve adjacent service areas and have elected to submit Settlement Quality Meter Data at the intrastate(s), they will be required to agree on the metering configurations used for submitting Meter Data to the CAISO. If they cannot reach an agreement, the intrastate(s) will be required to use revenue quality meters directly polled by

the CAISO pursuant to Section 10.2.

10.3.15 [Not Used]

10.3.16 [Not Used]

10.3.17 Meter Identification

If a Scheduling Coordinator Metered Entity is required to identify its revenue quality meters by the relevant:

- (a) Local Regulatory Authority; or
- (b) UDC,

then the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must, at the CAISO's request, provide the CAISO with a copy of that information within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

If a Scheduling Coordinator Metered Entity is not required by either the relevant Local Regulatory Authority or UDC to identify its revenue quality meters, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity shall maintain an accurate record of the revenue quality meter of each of the Scheduling Coordinator Metered Entities that it represents from time to time. The record maintained by Scheduling Coordinators must include the information set out in the applicable Business Practice Manuals. The Scheduling Coordinator must, at the CAISO's request, provide the CAISO with a copy of any information contained in that record within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

10.4 Exemptions

10.4.1 Authority to Grant Exemptions

In addition to the specific exemptions granted under the CAISO Tariff, the CAISO has the authority under the CAISO Tariff to grant exemptions from compliance with certain requirements imposed by the CAISO Tariff.

10.4.2 Guidelines for Granting Exemptions

The CAISO will use the following guidelines when considering applications for exemptions from compliance with the provisions of Section 10.

- (a) Publication of Guidelines

Attachment A - Tariff Examples
California Independent System Operator Corporation
Fifth Replacement FERC Electric Tariff

The CAISO has the authority under Section 10.2.6 to exempt CAISO Metered Entities from the requirement to make Meter Data directly available to the CAISO via RMDAPS. The applicable Business Practice Manual sets forth specific exemptions available. In addition, the CAISO may, at its discretion, grant such an exemption where it considers the requirement to install communication links (or related facilities) between the CAISO Metered Entity and CAISO's secure communication system to allow the CAISO to directly poll the meters of that CAISO Metered Entity would be unnecessary, impractical or uneconomic.

10.4.4.2 Exemptions from Meter Standards

The CAISO has the authority under Section 10.2.12 to exempt CAISO Metered Entities from the requirement to comply with the meter standards referred to in the CAISO Tariff. The applicable Business Practice Manual sets forth specific exemptions available.

PJM Tariff - Point-to-Point Tariff Sections

14 Nature of Non-Firm Point-To-Point Transmission Service

14.1 Term:

Non-Firm Point-To-Point Transmission Service will be available for periods ranging from one (1) hour to one (1) month. However, a Purchaser of Non-Firm Point-To-Point Transmission Service will be entitled to reserve a sequential term of service (such as a sequential monthly term without having to wait for the initial term to expire before requesting another monthly term) so that the total time period for which the reservation applies is greater than one month, subject to the requirements of Tariff, Part II, section 18.3.

14.2 Reservation Priority:

Non-Firm Point-To-Point Transmission Service shall be available from transfer capability in excess of that needed for reliable service to Native Load Customers, Network Customers and other Transmission Customers taking Long-Term and Short-Term Firm Point-To-Point Transmission Service. A higher priority will be assigned to requests or reservations with Pre-Confirmed Applications. In the event the Transmission System is constrained, competing requests of the same Pre-Confirmation status and equal duration will be prioritized based on the highest price offered by the Eligible Customer for the Transmission Service. Otherwise, requests for longer term service will not preempt requests for shorter term service. Transmission service for Network Customers from resources other than designated Network Resources will have a higher priority than any Non-Firm Point-To-Point Transmission Service. Non-Firm Point-To-Point Transmission Service over secondary Point(s) of Receipt and Point(s) of Delivery will have the lowest reservation priority under the Tariff.

14.3 Use of Non-Firm Point-To-Point Transmission Service by a Transmission Owner:

Each Transmission Owner will be subject to the rates, terms and conditions of Tariff, Part II when making Third-Party Sales under (i) agreements executed on or after March 1, 1997 or (ii) agreements executed prior to the aforementioned date that the Commission requires to be unbundled, by the date specified by the Commission. The Transmission Owner will maintain separate accounting, pursuant to Tariff, Part I, section 8, for any use of Non-Firm Point-To-Point Transmission Service to make Third-Party Sales.

14.4 Service Agreements:

The Transmission Provider shall offer a standard form Non-Firm Point-To-Point Transmission Service Agreement (Tariff, Attachment B) to an Eligible Customer when it first submits a Completed Application for Non-Firm Point-To-Point Transmission Service pursuant to the Tariff. Executed Service Agreements that contain the information required under the Tariff shall be filed with the Commission in compliance with applicable Commission regulations.

14.5 Classification of Non-Firm Point-To-Point Transmission Service:

Non-Firm Point-To-Point Transmission Service shall be offered under terms and conditions contained in Tariff, Part II. The Transmission Provider and the Transmission Owners undertake no obligation under the Tariff to plan the Transmission System in order to have sufficient capacity for Non-Firm Point-To-Point Transmission Service. Parties requesting Non-Firm Point-To-Point Transmission Service for the transmission of firm power do so with the full realization that such service is subject to availability and to Curtailment or Interruption under the terms of the Tariff. In the event the Transmission Customer (including Third Party Sales by a Transmission Owner) exceeds its non-firm capability reserved at any Point of Receipt or Point of Delivery, the Transmission Customer shall pay the rate set forth in Tariff, Schedule 8 for the delivery period (i.e., monthly, weekly, daily or hourly) for which the Transmission Customer is reserving capacity multiplied by an adjusted reserved capacity (for pricing purposes only) equal to the highest level used by the Transmission Customer at such Point of Receipt or Point of Delivery as integrated over a 60 minute period. Non-Firm Point-To-Point Transmission Service shall include transmission of energy on an hourly basis and transmission of scheduled short-term capacity and energy on a daily, weekly or monthly basis, but not to exceed one month's reservation for any one Application, under Tariff, Schedule 8.

14.6 Scheduling of Non-Firm Point-To-Point Transmission Service:

Schedules for Non-Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 2:00 p.m. (eastern) of the day prior to the commencement of such service. Schedules submitted after 2:00 p.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their schedules at a common Point of Receipt into units of 1,000 kW per hour. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

13 Nature of Firm Point-To-Point Transmission Service

13.1 Term:

The minimum term of Long-Term Firm Point-To-Point Transmission Service shall be one year and the maximum term shall be specified in the Service Agreement. The term of Short-Term Firm Point-To-Point Transmission Service shall be one day, one week, or one month.

13.2 Reservation Priority:

Except as provided in Tariff, Part II, section 17.8 and Tariff, Part II, section 17.9,

- (i) Firm Point-To-Point Transmission Service shall be available on a first-come, first-served basis, i.e., in the chronological sequence in which each Transmission Customer has requested service according to the provisions of Tariff, Part II, section 17. However, Pre-Confirmed Applications for Short-Term Point-to-Point Transmission Service will receive priority over earlier-submitted requests that are not Pre-Confirmed and that have equal or shorter duration.
- (ii) If the Transmission System becomes oversubscribed, requests for Long-Term Firm Point-To-Point Transmission Service or Network Integration Transmission Service may preempt requests for monthly transmission service up to two months before the commencement of monthly service. Otherwise, requests for longer term service will not preempt requests for shorter term service. Preemption of monthly service, if any, shall take place sequentially beginning with preemption of the most recent request for monthly service. Monthly requests with equal reservation priority will be preempted on a pro-rata basis. The Transmission Provider shall promptly notify an Eligible Customer with a reservation for monthly service if the reservation is preempted. Such customer shall not have any right of first refusal to match the request for Long-Term Firm Point-To-Point Transmission Service or Network Integration Transmission Service in order to avoid losing its reservation priority. Except in the event of preemption of monthly service as stated in this section, after the Transmission Customer confirms a reservation, service will commence pursuant to the terms of Tariff, Part II.
- (iii) Firm Point-To-Point Transmission Service will always have a reservation priority over Non-Firm Point-To-Point Transmission Service under the Tariff. All Long-Term Firm Point-To-Point Transmission Service will have equal reservation priority with Native Load Customers and Network Customers. Reservation priorities for existing firm service customers are provided in Tariff, Part I, section 2.2.

13.3 Use of Firm Transmission Service by a Transmission Owner:

Each Transmission Owner will be subject to the rates, terms and conditions of Tariff, Part II when making Third-Party Sales under (i) agreements executed on or after March 1, 1997 or (ii) agreements executed prior to the aforementioned date that the Commission requires to be unbundled, by the date specified by the Commission. Each Transmission Owner will maintain separate accounting, pursuant to Tariff, Part I, section 8, for any use of the Point-To-Point Transmission Service to make Third-Party Sales.

13.4 Service Agreements:

The Transmission Provider shall offer a standard form Firm Point-To-Point Transmission Service Agreement (Tariff, Attachment A) to an Eligible Customer when it submits a Completed Application for Long-Term Firm Point-To-Point Transmission Service. The Transmission Provider shall offer a standard form Firm Point-To-Point Transmission Service Agreement (Tariff, Attachment A) to an Eligible Customer when it first submits a Completed Application for Short-Term Firm Point-To-Point Transmission Service pursuant to the Tariff. Executed Service Agreements that contain the information required under the Tariff shall be filed with the Commission in compliance with applicable Commission regulations. An Eligible Customer that uses Transmission Service at a Point of Receipt or Point of Delivery that it has not reserved and that has not executed a Service Agreement will be deemed, for purposes of assessing any appropriate charges and penalties, to have executed the appropriate Service Agreement.

13.5 Transmission Customer Obligations for Facility Additions or Redispatch Costs:

In cases where the Transmission Provider determines that the Transmission System is not capable of providing Long-Term Firm Point-To-Point Transmission Service without (1) degrading or impairing the reliability of service to Native Load Customers, Network Customers and other Transmission Customers taking Firm Point-To-Point Transmission Service, or (2) interfering with the Transmission Provider's ability to meet prior firm contractual commitments to others, the Transmission Owner(s) will be obligated to expand or upgrade the Transmission System pursuant to the terms of Tariff, Part II, section 15.4. The Transmission Customer must agree to compensate the Transmission Provider for any necessary transmission facility additions pursuant to the terms of Tariff, Part II, section 27. To the extent the Transmission Provider can relieve any system constraint by redispatching resources available to the PJM Region, it shall do so, provided that the Eligible Customer agrees to compensate the Transmission Provider pursuant to the terms of Tariff, Part II, section 27 and agrees to compensate the Transmission Owner for any necessary transmission facility additions. Any redispatch, Network Upgrade or Direct Assignment Facilities costs to be charged to the Transmission Customer on an incremental basis under the Tariff will be specified in the Service Agreement prior to initiating service.

13.6 Curtailment of Firm Transmission Service:

In the event that a Curtailment on the Transmission Provider's Transmission System, or a portion thereof, is required to maintain reliable operation of such system and the systems directly and indirectly interconnected with Transmission Provider's Transmission System. Curtailments will be made on a non-discriminatory basis to the transaction(s) that effectively relieve the constraint. Transmission Provider may elect to implement such Curtailments pursuant to the Transmission Loading Relief procedures. If multiple transactions require Curtailment, to the extent practicable and consistent with Good Utility Practice, Curtailments will be proportionally allocated among Native Load Customers, Network Customers, and Transmission Customers taking Firm Point-To-Point Transmission Service. All Curtailments will be made on a non-discriminatory basis, however, Non-Firm Point-To-Point Transmission Service shall be subordinate to Firm Transmission Service and Non-Firm Point-To-Point Transmission Service for which redispatch costs will not be paid shall be subordinate to Non-Firm Point-To-Point Transmission Service for which redispatch costs will be paid. When the Transmission Provider determines that an electrical emergency exists on the Transmission System and implements emergency procedures to Curtail Firm Transmission Service, the Transmission Customer shall make the required reductions upon request of the Transmission Provider. However, the Transmission Provider reserves the right to Curtail, in whole or in part, any Firm Transmission Service provided under the Tariff when, in the Transmission Provider's sole discretion, an emergency or other unforeseen condition impairs or degrades the reliability of the Transmission System. The Transmission Provider will notify all affected Transmission Customers in a timely manner of any scheduled Curtailments.

13.6A Load Shedding:

To the extent that a system contingency exists on the Transmission Provider's Transmission System and the Transmission Provider determines that it is necessary for the Transmission Owners and the Transmission Customer to shed load, the Transmission Customer and the Transmission Owners shall shed load in accordance with previously established procedures under the Operating Agreement.

13.7 Classification of Firm Transmission Service:

- (a) The Transmission Customer taking Firm Point-To-Point Transmission Service may (1) change its Receipt and Delivery Points to obtain service on a non-firm basis consistent with the terms of Tariff, Part II, section 22.1 or (2) request a modification of the Points of Receipt or Delivery on a firm basis pursuant to the terms of Tariff, Part II, section 22.2.
- (b) The Transmission Customer may purchase transmission service to make sales of capacity and energy from multiple generating units that are on the Transmission Provider's Transmission System. For such a purchase of transmission service, the resources will be designated as multiple Points of Receipt, unless the multiple generating units are at the same generating plant in which case the units would be treated as a single Point of Receipt.
- (c) The Transmission Provider shall provide firm deliveries of capacity and energy from the Point(s) of Receipt to the Point(s) of Delivery. Each Point of Receipt at which firm transmission capacity is reserved by the Transmission Customer shall be set forth in the Firm Point-To-Point Service Agreement for Long-Term Firm Transmission Service along with a corresponding capacity reservation associated with each Point of Receipt. Points of Receipt and corresponding capacity reservations shall be as mutually agreed upon by the Parties for Short-Term Firm Transmission. Each Point of Delivery at which firm transfer capability is reserved by the Transmission Customer shall be set forth in the Firm Point-To-Point Service Agreement for Long-Term Firm Transmission Service along with a corresponding capacity reservation associated with each Point of Delivery. Points of Delivery and corresponding capacity reservations shall be as mutually agreed upon by the Parties for Short-Term Firm Transmission. The greater of either (1) the sum of the capacity reservations at the Point(s) of Receipt, or (2) the sum of the capacity reservations at the Point(s) of Delivery shall be the Transmission Customer's Reserved Capacity. The Transmission Customer will be billed for its Reserved Capacity under the terms of Schedule 7. The Transmission Customer may not exceed its firm capacity reserved at each Point of Receipt and each Point of Delivery except as otherwise specified in Section 22. In the event the Transmission Customer (including Third Party Sales by a Transmission Owner) exceeds its firm capacity reserved at any Point of Receipt or Point of Delivery or uses Transmission Service at a Point of Receipt or Point of Delivery that it has not reserved, except as otherwise specified in Tariff, Part II, section 22, the Transmission Customer shall pay a penalty equal to twice the rate set forth in Tariff, Schedule 7 as follows:

The unreserved use penalty for a single hour of unreserved use shall be based on the rate for daily Firm Point-To-Point Transmission Service. If there is more than one assessment for a given duration (e.g., daily) for the Transmission Customer, the penalty shall be based on the next longest duration (e.g., weekly). The unreserved penalty charge for multiple instances of unreserved use (i.e., more than one hour) within a day shall be based on the daily rate Firm Point-To-Point Transmission Service. The unreserved penalty charge for multiple instances of unreserved use isolated to one calendar week

shall be based on the charge for weekly Firm Point-To-Point Transmission Service. The unreserved use penalty charge for multiple instances of unreserved use during more than one week during a calendar month shall be based on the charge for monthly Firm Point-To-Point Transmission Service.

The Transmission Provider shall distribute all unreserved use penalties incurred under this section in a given hour to the Transmission Customers that: (1) were using transmission service in the same hour in which the unreserved use penalty was incurred; and (2) did not incur unreserved use penalties under this section during the hour in which the penalties were incurred. The Transmission Provider shall distribute the unreserved use penalties to each such Transmission Customer pro-rata based on the total Tariff, Schedule 1A charges for all such Transmission Customers for all the hours of the day in which the penalty was incurred.

13.8 Scheduling of Firm Point-To-Point Transmission Service:

Schedules for the Transmission Customer's Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 10:00 a.m. (eastern) of the day prior to commencement of such service. Schedules submitted after 10:00 a.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of any capacity and energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their service requests at a common point of receipt into units of 1,000 kW per hour for scheduling and billing purposes. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

14 Nature of Non-Firm Point-To-Point Transmission Service

14.1 Term:

Non-Firm Point-To-Point Transmission Service will be available for periods ranging from one (1) hour to one (1) month. However, a Purchaser of Non-Firm Point-To-Point Transmission Service will be entitled to reserve a sequential term of service (such as a sequential monthly term without having to wait for the initial term to expire before requesting another monthly term) so that the total time period for which the reservation applies is greater than one month, subject to the requirements of Tariff, Part II, section 18.3.

14.2 Reservation Priority:

Non-Firm Point-To-Point Transmission Service shall be available from transfer capability in excess of that needed for reliable service to Native Load Customers, Network Customers and other Transmission Customers taking Long-Term and Short-Term Firm Point-To-Point Transmission Service. A higher priority will be assigned to requests or reservations with Pre-Confirmed Applications. In the event the Transmission System is constrained, competing requests of the same Pre-Confirmation status and equal duration will be prioritized based on the highest price offered by the Eligible Customer for the Transmission Service. Otherwise, requests for longer term service will not preempt requests for shorter term service. Transmission service for Network Customers from resources other than designated Network Resources will have a higher priority than any Non-Firm Point-To-Point Transmission Service. Non-Firm Point-To-Point Transmission Service over secondary Point(s) of Receipt and Point(s) of Delivery will have the lowest reservation priority under the Tariff.

14.3 Use of Non-Firm Point-To-Point Transmission Service by a Transmission Owner:

Each Transmission Owner will be subject to the rates, terms and conditions of Tariff, Part II when making Third-Party Sales under (i) agreements executed on or after March 1, 1997 or (ii) agreements executed prior to the aforementioned date that the Commission requires to be unbundled, by the date specified by the Commission. The Transmission Owner will maintain separate accounting, pursuant to Tariff, Part I, section 8, for any use of Non-Firm Point-To-Point Transmission Service to make Third-Party Sales.

14.4 Service Agreements:

The Transmission Provider shall offer a standard form Non-Firm Point-To-Point Transmission Service Agreement (Tariff, Attachment B) to an Eligible Customer when it first submits a Completed Application for Non-Firm Point-To-Point Transmission Service pursuant to the Tariff. Executed Service Agreements that contain the information required under the Tariff shall be filed with the Commission in compliance with applicable Commission regulations.

14.5 Classification of Non-Firm Point-To-Point Transmission Service:

Non-Firm Point-To-Point Transmission Service shall be offered under terms and conditions contained in Tariff, Part II. The Transmission Provider and the Transmission Owners undertake no obligation under the Tariff to plan the Transmission System in order to have sufficient capacity for Non-Firm Point-To-Point Transmission Service. Parties requesting Non-Firm Point-To-Point Transmission Service for the transmission of firm power do so with the full realization that such service is subject to availability and to Curtailment or Interruption under the terms of the Tariff. In the event the Transmission Customer (including Third Party Sales by a Transmission Owner) exceeds its non-firm capability reserved at any Point of Receipt or Point of Delivery, the Transmission Customer shall pay the rate set forth in Tariff, Schedule 8 for the delivery period (i.e., monthly, weekly, daily or hourly) for which the Transmission Customer is reserving capacity multiplied by an adjusted reserved capacity (for pricing purposes only) equal to the highest level used by the Transmission Customer at such Point of Receipt or Point of Delivery as integrated over a 60 minute period. Non-Firm Point-To-Point Transmission Service shall include transmission of energy on an hourly basis and transmission of scheduled short-term capacity and energy on a daily, weekly or monthly basis, but not to exceed one month's reservation for any one Application, under Tariff, Schedule 8.

14.6 Scheduling of Non-Firm Point-To-Point Transmission Service:

Schedules for Non-Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 2:00 p.m. (eastern) of the day prior to the commencement of such service. Schedules submitted after 2:00 p.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their schedules at a common Point of Receipt into units of 1,000 kW per hour. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

14.7 Curtailment or Interruption of Service:

The Transmission Provider reserves the right to Curtail, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under the Tariff for reliability reasons when an emergency or other unforeseen condition threatens to impair or degrade the reliability of the Transmission System or the systems directly and indirectly interconnected with Transmission Provider's Transmission System. Transmission Provider may elect to implement such Curtailments pursuant to the Transmission Loading Relief procedures. The Transmission Provider reserves the right to Interrupt, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under the Tariff for economic reasons in order to accommodate (1) a request for Firm Transmission Service, (2) a request for Non-Firm Point-To-Point Transmission Service of greater duration, (3) a request for Non-Firm Point-To-Point Transmission Service of equal duration with a higher price, or (4) transmission service for Network Customers from non-designated resources. The Transmission Provider also will discontinue or reduce service to the Transmission Customer to the extent that deliveries for transmission are discontinued or reduced at the Point(s) of Receipt. Where required, Curtailments or Interruptions will be made on a non-discriminatory basis to the transaction(s) that effectively relieve the constraint, however, Non-Firm Point-To-Point Transmission Service shall be subordinate to Firm Transmission Service and Non-Firm Point-To-Point Transmission Service for which redispatch costs will not be paid shall be subordinate to Non-Firm Point-To-Point Transmission Service for which redispatch costs will be paid. If multiple transactions require Curtailment or Interruption, to the extent practicable and consistent with Good Utility Practice, Curtailments or Interruptions will be made to transactions of the shortest term (e.g., hourly non-firm transactions will be Curtailed or Interrupted before daily non-firm transactions and daily non-firm transactions will be Curtailed or Interrupted before weekly non-firm transactions). Transmission service for Network Customers from resources other than designated Network Resources will have a higher priority than any Non-Firm Point-To-Point Transmission Service under the Tariff. Non-Firm Point-To-Point Transmission Service over secondary Point(s) of Receipt and Point(s) of Delivery will have a lower priority than any Non-Firm Point-To-Point Transmission Service under the Tariff. The Transmission Provider will provide advance notice of Curtailment or Interruption where such notice can be provided consistent with Good Utility Practice.

15 Service Availability

14.7 Curtailment or Interruption of Service:

The Transmission Provider reserves the right to Curtail, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under the Tariff for reliability reasons when an emergency or other unforeseen condition threatens to impair or degrade the reliability of the Transmission System or the systems directly and indirectly interconnected with Transmission Provider's Transmission System. Transmission Provider may elect to implement such Curtailments pursuant to the Transmission Loading Relief procedures. The Transmission Provider reserves the right to Interrupt, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under the Tariff for economic reasons in order to accommodate (1) a request for Firm Transmission Service, (2) a request for Non-Firm Point-To-Point Transmission Service of greater duration, (3) a request for Non-Firm Point-To-Point Transmission Service of equal duration with a higher price, or (4) transmission service for Network Customers from non-designated resources. The Transmission Provider also will discontinue or reduce service to the Transmission Customer to the extent that deliveries for transmission are discontinued or reduced at the Point(s) of Receipt. Where required, Curtailments or Interruptions will be made on a non-discriminatory basis to the transaction(s) that effectively relieve the constraint, however, Non-Firm Point-To-Point Transmission Service shall be subordinate to Firm Transmission Service and Non-Firm Point-To-Point Transmission Service for which redispatch costs will not be paid shall be subordinate to Non-Firm Point-To-Point Transmission Service for which redispatch costs will be paid. If multiple transactions require Curtailment or Interruption, to the extent practicable and consistent with Good Utility Practice, Curtailments or Interruptions will be made to transactions of the shortest term (e.g., hourly non-firm transactions will be Curtailed or Interrupted before daily non-firm transactions and daily non-firm transactions will be Curtailed or Interrupted before weekly non-firm transactions). Transmission service for Network Customers from resources other than designated Network Resources will have a higher priority than any Non-Firm Point-To-Point Transmission Service under the Tariff. Non-Firm Point-To-Point Transmission Service over secondary Point(s) of Receipt and Point(s) of Delivery will have a lower priority than any Non-Firm Point-To-Point Transmission Service under the Tariff. The Transmission Provider will provide advance notice of Curtailment or Interruption where such notice can be provided consistent with Good Utility Practice.

15 Service Availability

15.1 General Conditions:

The Transmission Provider will provide Firm and Non-Firm Point-To-Point Transmission Service over, on or across the Transmission System to any Transmission Customer that has met the requirements of Tariff, Part II, section 16.

15.2 Determination of Available Transfer Capability:

A description of the Transmission Provider's specific methodology for assessing available transfer capability posted on the Transmission Provider's OASIS (Tariff, section 4) is contained in Tariff, Attachment C. The Transmission Provider will not provide Short-Term Firm Point-To-Point Transmission Service in excess of the transfer capability posted on OASIS pursuant to Tariff, Part II, section 17.9. In the event sufficient transfer capability may not exist to accommodate a request for Long-Term Firm Point-To-Point Transmission Service, and such request does not commence and terminate within the 18 month ATC horizon, the Transmission Provider will respond by performing (in coordination with the affected Transmission Owner or Transmission Owners to the extent necessary) a Firm Transmission Feasibility Study as described in Tariff, Part II, section 19. If a request for Long-Term Firm Point-to-Point Transmission Service falls entirely within the ATC horizon, the request will be evaluated based on the posted ATC.

15.3 Initiating Service in the Absence of an Executed Service Agreement:

If the Transmission Provider and the Transmission Customer requesting Firm or Non-Firm Point-To-Point Transmission Service cannot agree on all the terms and conditions of the Point-To-Point Service Agreement, the Transmission Provider shall file with the Commission, within thirty (30) days after the date the Transmission Customer provides written notification directing the Transmission Provider to file, an unexecuted Point-To-Point Service Agreement containing terms and conditions deemed appropriate by the Transmission Provider for such requested Transmission Service. The Transmission Provider shall commence providing Transmission Service subject to the Transmission Customer agreeing to (i) compensate the Transmission Provider at whatever rate the Commission ultimately determines to be just and reasonable, and (ii) comply with the terms and conditions of the Tariff including posting appropriate security deposits in accordance with the terms of Tariff, Part II, section 17.3.

15.4 Obligation to Provide Transmission Service that Requires Expansion or Modification of the Transmission System or Redispatch:

(a) If the Transmission Provider determines that it cannot accommodate a Completed Application for Long-Term Firm Point-To-Point Transmission Service because of insufficient capability on the Transmission System, the Transmission Owners will be obligated and shall use due diligence to expand or modify, the Transmission System to provide the requested Firm Transmission Service consistent with the planning obligations in Operating Agreement, Schedule 6, provided the Transmission Customer agrees to compensate the Transmission Provider or the affected Transmission Owner(s) for such costs pursuant to the terms of Tariff, Part II, section 27. The Transmission Provider and the affected Transmission Owners will conform to Good Utility Practice and the planning obligations in Operating Agreement, Schedule 6 in determining the need for new facilities and the affected Transmission Owner(s) will conform to Good Utility Practice in the design and construction of such facilities. The obligation applies only to those facilities that the Transmission Owners have the right to expand or modify.

(b) If the Transmission Provider determines that it cannot accommodate a Completed Application for Long-Term Firm Point-To-Point Transmission Service because of insufficient capability on its Transmission System, the Transmission Provider will use due diligence to provide redispatch until Network Upgrades are completed for the Transmission Customer.

15.5 Deferral of Service:

The Transmission Provider may defer providing service until construction of new transmission facilities or upgrades needed to provide Firm Point-To-Point Transmission Service are completed whenever the Transmission Provider determines that providing the requested service would, without such new facilities or upgrades, impair or degrade reliability to any existing firm services.

15.6 Other Transmission Service Schedules:

Eligible Customers receiving transmission service under other agreements on file with the Commission may continue to receive transmission service under those agreements until such time as those agreements may be modified by the Commission.

Intra-PJM Tariffs --> OPEN ACCESS TRANSMISSION TARIFF --> OATT II. POINT-TO-POINT TRANSMISSION SERVICE -->
OATT 15 Service Availability --> OATT 15.7 [Reserved]

15.7 [Reserved]

16 Transmission Customer Responsibilities

16.1 Conditions Required of Transmission Customers:

Point-To-Point Transmission Service shall be provided by the Transmission Provider only if the following conditions are satisfied by the Transmission Customer:

- a. The Transmission Customer has pending a Completed Application for service;
- b. The Transmission Customer meets the creditworthiness criteria set forth in Tariff, Part I, section 11;
- c. The Transmission Customer will have arrangements in place for any other transmission service necessary to effect the delivery from the generating source to the Transmission Provider prior to the time service under Tariff, Part II commences;
- d. The Transmission Customer agrees to pay for any facilities constructed and chargeable to such Transmission Customer under Tariff, Part II, whether or not the Transmission Customer takes service for the full term of its reservation;
- e. The Transmission Customer provides the information required by the Transmission Provider's planning process established in Operating Agreement, Schedule 6; and
- f. The Transmission Customer has executed a Point-To-Point Service Agreement or has agreed to receive service pursuant to Tariff, Part II, section 15.3.

16.2 Transmission Customer Responsibility for Third-Party Arrangements:

Any scheduling arrangements that may be required by other electric systems shall be the responsibility of the Transmission Customer requesting service. The Transmission Customer shall provide, unless waived by the Transmission Provider, notification to the Transmission Provider identifying such systems and authorizing them to schedule the capacity and energy to be transmitted by the Transmission Provider pursuant to Tariff, Part II on behalf of the Receiving Party at the Point of Delivery or the Delivering Party at the Point of Receipt. However, the Transmission Provider will undertake reasonable efforts to assist the Transmission Customer in making such arrangements, including without limitation, providing any information or data required by such other electric system pursuant to Good Utility Practice.

17 Procedures for Arranging Firm Point-To-Point Transmission Service

17.1 Application:

A request for Firm Point-To-Point Transmission Service for periods of one year or longer must contain a written Application to: PJM Interconnection, L.L.C., 2750 Monroe Blvd., Audubon, PA 19403, at least sixty (60) days in advance of the calendar month in which service is to commence. The Transmission Provider will consider requests for such firm service on shorter notice when feasible. Requests for firm service for periods of less than one year shall be subject to the expedited procedures set forth in Tariff, Part II, section 17.8. All Firm Point-To-Point Transmission Service requests should be submitted by entering the information listed below on the Transmission Provider's OASIS. Prior to implementation of the Transmission Provider's OASIS, a Completed Application may be submitted by (i) transmitting the required information to the Transmission Provider by telefax, or (ii) providing the information by telephone over the Transmission Provider's time recorded telephone line. Each of these methods will provide a time-stamped record for establishing the Queue Position of the Completed Application.

17.2 Completed Application:

A Completed Application shall provide all of the information included in 18 C.F.R. § 2.20 including but not limited to the following:

- (i) The identity, address, telephone number and facsimile number of the entity requesting service;
- (ii) A statement that the entity requesting service is, or will be upon commencement of service, an Eligible Customer under the Tariff;
- (iii) The location of the Point(s) of Receipt and Point(s) of Delivery and the identities of the Delivering Parties and the Receiving Parties;
- (iv) The location of the generating facility(ies) supplying the capacity and energy and the location of the load ultimately served by the capacity and energy transmitted. The Transmission Provider will treat this information as confidential except to the extent that disclosure of this information is required by this Tariff, by regulatory or judicial order, for reliability purposes pursuant to Good Utility Practice or pursuant to Applicable Regional Entity transmission information sharing agreements. The Transmission Provider shall treat this information consistent with the standards of conduct contained in Part 37 of the Commission's regulations;
- (v) A description of the supply characteristics of the capacity and energy to be delivered;
- (vi) An estimate of the capacity and energy expected to be delivered to the Receiving Party;
- (vii) The Service Commencement Date and the term of the requested Transmission Service;
- (viii) The transmission capacity requested for each Point of Receipt and each Point of Delivery on the Transmission Provider's Transmission System; customers may combine their requests for service in order to satisfy the minimum transmission capacity requirement;
- (ix) A statement indicating that, if the Eligible Customer submits a Pre-Confirmed Application, the Eligible Customer will execute a Service Agreement upon receipt of notification that Transmission Provider can provide the requested Transmission Service; and
- (x) Any additional information required by the Transmission Provider's planning process established in Operating Agreement, Schedule 6.

Intra-PJM Tariffs --> OPEN ACCESS TRANSMISSION TARIFF --> OATT II. POINT-TO-POINT TRANSMISSION SERVICE -->
OATT 17 Procedures for Arranging Firm Point-To-Point Transmi --> OATT 17.2 Completed Application:

The Transmission Provider shall treat this information consistent with the standards of conduct contained in Part 37 of the Commission's regulations.

Attachment A - Tariff Examples
California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

as applicable, based upon such submitted Participating TO invoices and the CAISO's own costs for the assessment.

CAISO Tariff - Wheeling Service Tariff Language

associated with that transaction, except as provided in Section 4.1 of Appendix I (Station Power Protocol). Schedules and awards that include Wheeling transactions shall be subject to any charges resulting from the CAISO Markets in accordance with Section 27.

26.1.4.1 Wheeling Access Charge

The Wheeling Access Charge shall be determined by the transmission ownership or Entitlement, less all Encumbrances, associated with the Scheduling Point at which the Energy exits the CAISO Controlled Grid. The Wheeling Access Charge for Scheduling Points that are not joint facilities shall be equal to the Regional Access Charge in accordance with Schedule 3 of Appendix F plus the applicable Local Access Charge if the Scheduling Point is on a Local Transmission Facility. Wheeling Access Charges shall not apply for Wheeling under a bundled non-economy Energy coordination agreement of a Participating TO executed prior to July 9, 1996.

26.1.4.2 Wheeling Over Joint Facilities

To the extent that more than one Participating TO owns or has Entitlement to transmission capacity, less all Encumbrances, exiting the CAISO Controlled Grid at a Scheduling Point, the Scheduling Coordinator shall pay the CAISO each month a rate for Wheeling at that Scheduling Point which reflects an average of the Wheeling Access Charge applicable to those Participating TOs, weighted by the relative share of such ownership or Entitlement to transmission capacity, less all Encumbrances, at such Scheduling Point. If the Scheduling Point is located at Regional Transmission Facilities, the Wheeling Access Charge will consist of a Regional Wheeling Access Charge component. Additionally, if the Scheduling Point is located at Local Transmission Facilities, the applicable Local Wheeling Access Charge component will be added to the Wheeling Access Charge. The methodology for developing the weighted average rate for Wheeling at each Scheduling Point is set forth in Appendix F, Schedule 3, Section 14.4.

26.1.4.3 Disbursement of Wheeling Revenues

The CAISO shall collect and pay to Participating TOs and other entities as provided in Section 24.14.3 all Wheeling revenues at the same time as other CAISO charges and payments are settled. For Wheeling revenues associated with CRRs allocated to Load Serving Entities outside the CAISO Balancing Authority Area, the CAISO shall pay to the Participating TOs and other entities as provided in Section 24.10.3 any excess prepayment amounts within thirty (30) days of the end of the term of the CRR Allocation. The

CAISO shall provide to the applicable Participating TO and other entities as provided in Section 24.14.3 a statement of the aggregate amount of Energy delivered to each Scheduling Coordinator using such Participating TO's Scheduling Point to allow for calculation of Wheeling revenue and auditing of disbursements. Wheeling revenues shall be disbursed by the CAISO based on the following:

26.1.4.3.1 Scheduling Point with All Participating TOs in the Same TAC Area

With respect to revenues received for the payment of Regional Wheeling Access Charges for Wheeling to a Scheduling Point at which all of the facilities and Entitlements, less all Encumbrances, are owned by Participating TOs in the same TAC Area, Wheeling revenues shall be disbursed to each such Participating TO based on the ratio of each Participating TO's Regional Transmission Revenue Requirement to the sum of all such Participating TOs' Regional Transmission Revenue Requirements. If the Scheduling Point is located at a Local Transmission Facility, revenues received with respect to Local Wheeling Access Charges for Wheeling to that Scheduling Point shall be disbursed to the Participating TOs that own facilities and Entitlements making up the Scheduling Point in proportion to their Local Transmission Revenue Requirements. Additionally, if a Participating TO has a transmission upgrade or addition that was funded by a Project Sponsor, the Wheeling revenue allocated to such Participating TO shall be disbursed as provided in Section 24.14.3.

26.1.4.3.2 Scheduling Point without All Participating TOs in the Same TAC Area

With respect to revenues received for the payment of Wheeling Access Charges for Wheeling to a Scheduling Point at which the facilities and Entitlements, less all Encumbrances, are owned by Participating TOs in different TAC Areas, Wheeling revenues shall be disbursed to such Participating TOs as follows. First, the revenues shall be allocated between such TAC Areas in proportion to the ownership and Entitlements of transmission capacity, less all Encumbrances, at the Scheduling Point of the Participating TOs in each such TAC Area. Second, the revenues thus allocated to each TAC Area shall be disbursed among the Participating TOs in the TAC Area in accordance with Section 26.1.4.3.1.

26.1.4.4 Information Required from Scheduling Coordinators

Scheduling Coordinators for Wheeling Out or Wheeling Through transactions to a Bulk Supply Point, or other point of interconnection between the CAISO Controlled Grid and the transmission system of a Non-Participating TO, that are located within the CAISO Balancing Authority Area, shall provide the CAISO, by

eight (8) Business Days after the Trading Day (T+8B), details of such transactions (other than transactions submitted as Self-Schedules pursuant to Existing Contracts) sorted by Bulk Supply Point or point of interconnection for each Settlement Period (including kWh for each transaction). The CAISO shall use such information, which may be subject to review by the CAISO, to settle Wheeling Access Charges and payments. The CAISO shall publish a list of the Bulk Supply Points or interconnection points to which this Section 26.1.4.4 applies together with details of the electronic form and procedure to be used by Scheduling Coordinators to submit the required information on the CAISO Website.

26.1.5 Unbundled Retail Transmission Rates

The Access Charge for unbundled retail transmission service provided to End-Users by a FERC-jurisdictional electric utility Participating TO shall be determined by the FERC and submitted to the CAISO for information only. For a Local Publicly Owned Electric Utility, retail transmission service rates shall be determined by the Local Regulatory Authority and submitted to the CAISO for information only.

26.2 [Not Used]

26.3 Addition of New Facilities After CAISO Implementation

The costs of transmission facilities placed in service after the CAISO Operations Date shall be recovered consistent with the cost recovery determinations made pursuant to Appendix F, Schedule 3 and Section 24.

26.4 Effect on Tax-Exempt Status

Nothing in this Section 26 shall compel any Participating TO to violate any restrictions applicable to facilities financed with tax-exempt bonds or contractual restrictions and covenants regarding the use of transmission facilities.

26.5 [Not Used]

26.6 Location Constrained Resource Interconnection Facilities

The costs of an LCRIF shall be includable in a Participating TO's Regional Transmission Revenue Requirement. Any Participating TO that owns an LCRIF shall set forth in its TO Tariff a charge payable by LCRIGs connected to that facility. The charge shall require each LCRIG to pay on a going forward basis its pro rata share of the Transmission Revenue Requirement associated with the LCRIF, which shall be calculated based on the maximum capacity of the LCRIG relative to the capacity of the LCRIF. Each