Business Practice Manual for Compliance Monitoring

Version ~~6~~7

Last Revised: September ~~4~~26, ~~2013~~2025

California ISO

Approval Date: March 13, 2009

Effective Date: March 31, 2009

BPM Owner: ~~Benik Der-Gevorgian~~Tricia Johnstone

BPM Owner's Title: Director, ~~Market Services~~Operational Readiness

Revision History

Version	PRR	Effective Date	Description
7	1649	12/24/2025	Section 4.1 Update to include new language on CAISO's ability to request for additional data related to Ancillary services capabilities in accordance with Tariff section 8.4.
6	676	9/1/13	Section 4 - Change of language from "meter data" to "telemetry data" per tariff changes effective 6/12/13 related to FERC order 1274. Removed last reference to UDP which was missed in PRR 675 and cleaned up TOC with respect to Attachment G.
5	675	7/1/13	Update with Fall and Spring Release changes to remove MSS Deviation Penalty and Regulation No Pay sections. Removing UDP section and Attachments until FERC issues an order authorizing UDP. Minor reference corrections to Audit & Testing Requirements section. Removal of attachment H related to AS No Pay section and attachment J referencing bill determinants and section that have been removed.
4	190	5/13/10	Removal BPM language for No Pay (Spin and Non-Spin) and Residual Unit Commitment Capacity Rescission. Effective Trade Date February 1, 2010, these charges have been integrated into the Settlements System and are reflected in PRR 150, 151 and 152 for BPM for Settlements and Billing. Removed sections 4, 7 and 8, I.1-I.4, and J. Modified Sections, 1, 6 and K.
	188		Withdrawn
3	157	8/10/10	Update to include reference to Proxy Demand Resources (PDR) Section 2 and Section 7.
2	33	7/23/09	Update to Formula #114 Dispatchable RUC and Exhibit J-1. Availability-limited Undispatchable RUC Example.

California ISO

TABLE OF CONTENTS

1. Introduction 4

1.1 Purpose of CAISO Business Practice Manuals 4

1.2 Purpose of this Business Practice Manual 45

1.3 References 6

2. Metered Subsystem Penalties 7

2.1 Residual Unit Commitment (RUC) Opt In Requirement 7

3. Publication of Market Performance Information 8

4. Audit & Testing Requirements 9

4.1 Auditing & Testing Overview 9

4.2 Performance Audits 109

4.2.1 Spinning Reserve Audits 10

4.2.2 Non-Spinning Reserve Audits 10

4.2.3 Regulation Audits 11

4.2.4 Voltage Support Audits 11

4.2.5 Black Start Audits 11

4.2.6 RUC Capacity Audits 11

4.2.7 Consequences of Failure to Pass a Performance Audit 12

4.3 Compliance Testing 12

4.3.1 Spinning Reserve Testing 12

4.3.2 Non-Spinning Reserve Testing 13

4.3.3 Regulation Testing 14

4.3.4 Voltage Support Testing 14

4.3.5 Black Start Testing 14

4.3.6 RUC Capacity Testing 14

4.3.7 Consequences of Failure to Pass Compliance Tests 15

G.1 Examples of Penalty Point Accrual for Non-Load Following MSSs G-1

List of Exhibits:

Exhibit 1-1: CAISO BPMs ..... **Error! Bookmark not defined.**4

1. Introduction

Welcome to CAISO ***BPM for Compliance Monitoring***. In this Introduction you will find the following information:

- The purpose of CAISO BPMs
- What you can expect from this CAISO BPM
- Other CAISO BPMs or documents that provide related or additional information

1.1 Purpose of CAISO Business Practice Manuals

The Business Practice Manuals (BPMs) developed by CAISO are intended to contain implementation detail, consistent with and supported by the CAISO Tariff, including: instructions, rules, procedures, examples, and guidelines for the administration, operation, planning, and accounting requirements of CAISO and the markets. Each Business Practice Manual is posted in the BPM Library at: http://bpmcm.caiso.com/Pages/BPMLibrary.aspx. Updates to all BPMs are managed in accordance with the change management procedures included in the **BPM for Change Management**.

1.2 Purpose of this Business Practice Manual

The *BPM for Compliance Monitoring* describes processes and procedures in place to ensure grid reliability through the monitoring of Market Participant operation in accordance with the provisions of the CAISO Tariff. To the extent that Market Participants operate in a manner affecting the reliability of the CAISO Controlled Grid, potential Sanctions, may apply.

Market Participants are expected to comply at all times with the requirements of the CAISO Tariff and, unless exempted, follow all Dispatch Instructions and operating orders. Penalties are imposed for certain deviations from desired or scheduled operations.

The provisions of this BPM are intended to be consistent with the CAISO Tariff. If the provisions of this BPM nevertheless conflict, with the CAISO Tariff, the CAISO is bound to operate in accordance with the CAISO Tariff. Any provision of the CAISO Tariff that may have been summarized or repeated in this BPM is only to aid understanding. Even though every effort will be made by CAISO to update the information contained in this BPM and to notify Market Participants of changes, it is the responsibility of each Market Participant to ensure that he or

she is using the most recent version of this BPM and to comply with all applicable provisions of the CAISO Tariff.

A reference in this BPM to the CAISO Tariff, a given agreement, any other BPM or instrument, is intended to refer to the CAISO Tariff, that agreement, BPM or instrument as modified, amended, supplemented or restated.

The captions and headings in this BPM are intended solely to facilitate reference and not to have any bearing on the meaning of any of the terms and conditions.

1.3 References

Other reference information related to this BPM includes:

- *BPM for Rules for Conduct Administration*, for information related to Sanctions that can be imposed for actions that violate certain provisions of the CAISO Tariff
- *BPM for Settlements & Billing*, for details of the formulas used for calculation of the actual charges relating to the provisions of this *BPM for Compliance Monitoring*
- *BPM for Market Operations*, for details of the MSS Elections process
- *BPM for Definitions & Acronyms*, for definition of the capitalized terms and acronyms used in this BPM

2. Metered Subsystem Penalties

Welcome to the *Metered Subsystem Penalties* section of the *BPM for Compliance Monitoring*.

CAISO Tariff Section 31.5.2.2.2

This section pertains to MSS Operators that do not elect Load following. MSS Operators that do not elect Load following may elect to opt-in or opt-out from Residual Unit Commitment (RUC) participation. All such MSS Operators that opt-out of RUC participation are exempt from RUC cost allocation. However, if such MSS Operators Self-Schedule based on their own MSS Demand Forecasts, as opposed to the one produced and published by CAISO, they are subject to a penalty point system. A numeric example of the MSS Penalty Point System for a Non-Load following MSS is provided in attachment G and the points accrual process is described in detail in the PC MSS Deviation Penalty Points configuration guide.

2.1 Residual Unit Commitment (RUC) Opt In Requirement

CAISO Tariff Sections 4.9.13 and 31.5.2.2.2

If the Non-Load Following MSS Operator has been found to have violated the Load following or RUC opt out requirements by accruing more than 20 penalty points within 12 consecutive months, the MSS is required to participate in the RUC Market and is not eligible for making such elections for the remainder of the current CRR Annual Cycle and for the following CRR Annual Cycle. The relevant elections will be updated in the CAISO Master File and the MSS will receive a communication of this update. Since the MSS options are common among all MSSs in an MSS Aggregation, all other MSS Operators in the same MSS Aggregation must also participate in RUC, or separate and form a different MSS Aggregation. When the MSS Operator is again eligible to make MSS elections, the MSS may again opt out of RUC using the MSS election process described in Section 2.4.2.2 of the Market Operations BPM.

3. Publication of Market Performance Information

Welcome to the *Publication of Market Performance Information* section of the *BPM for Compliance Monitoring*.

CAISO reserves the right to publish market performance information in order to encourage compliance with obligations, safeguard electric system reliability and reduce incentives to engage in gaming or market manipulation.

4. Audit & Testing Requirements

CAISO Tariff Sections 8.9 and 8.10

Welcome to the *Audit & Testing Requirements* section of the *BPM for Compliance Monitoring*. In this section you will find the following information:

- A description of overall auditing and testing provisions
- A description of the provisions for performance audits
- A description of the provisions for periodic testing

4.1 Auditing & Testing Overview

Availability of contracted and self-provided AS and RUC Capacity is verified by CAISO by testing of Generating Units, Participating Loads, Proxy Demand Resources and System Resources, by auditing of response to CAISO Dispatch Instructions, and by analysis of the appropriate telemetry data, or interchange schedules. CAISO may test the capability of any Generating Unit, System Unit, System Resource, external import of a System Resource, Participating Load, Proxy Demand Resource or reactive device providing AS or RUC Capacity.

Participating Generators, owners or operators of Participating Loads, owners or operators of Proxy Demand Resources, operators of System Units or System Resources, owners or operators of reactive devices and SCs must notify CAISO immediately whenever they become aware that an AS or RUC Capacity is not available. All Participating Generators, owners or operators of Participating Loads, owners or operators of Proxy Demand Resources, operators of System Units or System Resources and owners or operators of reactive devices must check, monitor and/or test their system and related equipment routinely to assure availability of the committed AS and RUC Capacity. CAISO may initiate a data request as necessary to verify adherence to this requirement if there are concerns with the resource's ability to provide Ancillary Services.

These requirements apply to AS whether the AS is contracted or self-provided. For a duration specified by CAISO, CAISO may suspend the technical eligibility certificate of an SC for a Generating Unit, System Unit, Participating Load, Proxy Demand Resource or System Resource that repeatedly fails to perform. CAISO must develop measures to discourage repeated non-performance on the part of both bidders and self-providers.

4.2 Performance Audits

Actions to be taken by CAISO upon the failure of a provider of AS to pass an audit include rescission of payments. Additional actions are required if the resource is a RA Resource. The SC may also be subject to Sanctions. A Market Participant that objects to certain audit obligations for which Sanctions apply may seek review by FERC.

4.2.1 Spinning Reserve Audits

CAISO audits the performance of a Generating Unit or external import of a System Resource providing Spinning Reserve by auditing its response to Dispatch Instructions and by analyzing telemetry data associated with the Generating Unit. Such audits may not necessarily occur on the hour.

A Generating Unit providing Spinning Reserve is evaluated on its ability to respond to a Dispatch Instruction, move at the MW/minute Ramp Rate stated in its Bid, reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within 10 minutes of issue of the Dispatch Instruction by CAISO, and respond to system frequency deviations outside the allowed frequency dead band. An external import of a System Resource providing Spinning Reserve is evaluated on its ability to respond to a Dispatch Instruction, move at the MW/minute Ramp Rate stated in its Bid, and reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within 10 minutes of issue of the Dispatch Instruction by CAISO.

4.2.2 Non-Spinning Reserve Audits

CAISO audits the performance of a Generating Unit, Participating Load, Proxy Demand Resource or System Resource providing Non-Spinning Reserve by auditing its response to Dispatch Instructions and by analyzing telemetry data associated with the resource. Such audits may not necessarily occur on the hour.

A Generating Unit providing Non-Spinning Reserve is evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute Ramp Rate stated in its Bid, and reach the amount of Non-Spinning Reserve capacity under the control of CAISO scheduled for the current Settlement Period within 10 minutes of issue of the Dispatch Instruction by CAISO.

An external import of a System Resource providing Non-Spinning Reserve is evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute Ramp Rate stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within 10 minutes of issue of the Dispatch Instruction by CAISO.

A Participating Load providing Non-Spinning Reserve from Curtailable Demand or a Proxy Demand Resource is evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute Ramp Rate stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within 10 minutes of issue of the Dispatch Instruction by CAISO.

4.2.3 Regulation Audits

CAISO audits the performance of a Generating Unit providing Regulation by monitoring its response to CAISO EMS control or, in the case of an external import of a System Resource providing Regulation, by monitoring the dynamic interchange response to CAISO EMS control around its Set Point within its rated MW/minute Ramp Rate over the range of Regulation capacity scheduled for the current Settlement Period.

4.2.4 Voltage Support Audits

CAISO audits the performance of a resource providing Voltage Support by auditing of its response to Dispatch Instructions and by analyzing telemetry data associated with the resource.

A resource providing Voltage Support is evaluated on its ability to provide reactive support over the stated power factor range of the resource, provide reactive support within the prescribed time periods, and demonstrate the effective function of automatic voltage control equipment for the amount of Voltage Support under the control of CAISO for the current Settlement Period.

4.2.5 Black Start Audits

CAISO audits the performance of a Black Start Generating Unit by analyzing telemetry data and other records to determine that the performance criteria relating to the Black Start from that Black Start Generating Unit were met when required.

4.2.6 RUC Capacity Audits

CAISO audits the performance of a Generating Unit, Participating Load, Proxy Demand Resource or System Resource providing RUC Capacity by auditing its response to Dispatch Instructions and by analyzing telemetry data associated with the resource. Such audits may not necessarily occur on the hour.

A Generating Unit providing RUC Capacity is evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute Ramp Rate stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period.

An external import of a System Resource providing RUC Capacity is evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute Ramp Rate stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period.

4.2.7 Consequences of Failure to Pass a Performance Audit

There are two actions that result from a failed audit:

- **Notification of Performance Audit Results** – CAISO gives the SC for a provider of AS or RUC Capacity a written notice of the results of such audit. CAISO, at the same time, sends a copy of the notice to the provider of AS or RUC Capacity. For any RA Resource failing to pass a performance audit, CAISO also notifies the California Public Utilities Commission (CPUC) or the relevant Local Regulatory Authority of the failure.

- **Penalties for Failure to Pass Performance Audit** – The SC for a provider of AS or RUC Capacity whose resource fails a performance audit is subject to the financial penalties provided for in the CAISO Tariff. In addition, Sanctions described in the *BPM for Rules on Conduct Administration* may come into effect.

4.3 Compliance Testing

In addition to auditing under Section 4.2, CAISO periodically tests the performance of resources providing AS or RUC Capacity to confirm the ability of such resources to meet the applicable AS standard for performance and control or to provide the RUC Capacity. Details of unannounced compliance testing are located in Operating Procedure 5370, Resource Performance Verification at, http://www.caiso.com/Documents/5370.pdf. Actions taken by CAISO upon the failure of a provider of AS Capacity to pass a test include rescission of payments. A Market Participant that objects to certain test obligations for which Sanctions apply may seek review by FERC.

4.3.1 Spinning Reserve Testing

CAISO tests the Spinning Reserve capability of a Generating Unit, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, System Unit or System Resource to ramp up to its 10-minute reserve capability.

CAISO measures the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The SC for the Generating Unit, System Unit or System Resource is paid the Settlement price

for the incremental IIE that is consumed or delivered as a result of a Dispatch Instruction for purposes of AS capacity testing or pre-commercial operations testing for Generating Units. The Settlement price is the maximum of the resource-specific Settlement Interval LMP or the Energy Bid price, if Energy is associated with an Energy Bid. All Energy costs for these types of Exceptional Dispatch are included in the IIE Settlement amount.

4.3.2 Non-Spinning Reserve Testing

CAISO tests the Non-Spinning Reserve capability of a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource to come on line and ramp up or to reduce Demand to its 10-minute capability.

CAISO measures the response of the Generating Unit, System Unit, System Resource or Participating Load or Proxy Demand Resource to determine compliance with requirements. The SC for the Generating Unit, System Unit, Participating Load, Proxy Demand Resource, or System Resource is paid the Settlement price for incremental IIE that is consumed or delivered as a result of a Dispatch Instruction for purposes of AS testing or pre-commercial operations testing for Generating Units. The Settlement price is the maximum of the resource-specific Settlement Interval LMP or the Energy Bid Price, if Energy is associated with an Energy Bid. All Energy costs for these types of Exceptional Dispatch are included in the IIE Settlement amount. The testing process differs for Generating Units, System Units, and System Resource and for Curtailable Demand:

- **Testing of a Generating Unit, System Unit or System Resource** – CAISO tests the Non-Spinning Reserve capability of a Generating Unit, System Unit or an external import of a System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit or System Unit to come on line and ramp up or, in the case of a System Resource, to affirmatively respond to Real-Time interchange schedule adjustment; all in accordance with the SC's Bid. Such tests may not necessarily occur on the hour. CAISO measures the response of the Generating Unit, System Unit or external import of a System Resource to determine compliance with its stated capabilities.

- **Testing of a Curtailable Demand** – CAISO tests the Non-Spinning Reserve capability of a Participating Load or Proxy Demand Resource providing Curtailable Demand by issuing unannounced Dispatch Instructions requiring the operator of the Participating Load or Proxy Demand Resource to report the switchable Demand of that Participating Load or Proxy Demand Resource actually being served by the operator at the time of the instruction. No actual Participating Load is disconnected as part of the test.

4.3.3 Regulation Testing

CAISO tests the capability of any Generating Unit or System Resource providing Regulation by using the CAISO EMS to move that Generating Unit's or System Resource's output over the full range of its Regulation capacity within a 10-minute period.

4.3.4 Voltage Support Testing

CAISO monitors a Generating Unit's response to Voltage Support instructions in order to determine compliance with Dispatch Instructions. The testing process differs for Generating Units and other reactive devices.

- **Testing of Generating Unit** – CAISO tests the Voltage Support capability of a Generating Unit by issuing unannounced Dispatch Instructions requiring the Generating Unit to adjust its power factor outside the specified power factor band of 0.90 lag to 0.95 lead, but within the limits of the Generating Unit's capability curve.

- **Testing of Other Reactive Devices** – CAISO tests the Voltage Support capability of other reactive devices (shunt capacitors, static var compensators, synchronous condensers, reactors, etc.) by issuing unannounced Dispatch Instructions requiring operation of such devices.

4.3.5 Black Start Testing

CAISO tests the Black Start capability of a Generating Unit by issuing unannounced Dispatch Instructions requiring the Generating Unit to start on a Black Start basis. Such test may include issuing Dispatch Instructions to start and synchronize the resource, testing of all communications circuits, simulating switching needed to connect the Black Start Generating Unit to the transmission system, and testing the features unique to each facility that relate to Black Start service. CAISO measures the response of the Generating Unit to determine compliance with the terms of any Black Start contract. The SC or Black Start Generator for the Generating Unit is paid the Generating Unit's contract price for the output under the Black Start test.

4.3.6 RUC Capacity Testing

CAISO tests the capability of a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or external import of a System Resource to provide RUC Capacity by issuing unannounced Dispatch Instructions requiring the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource to follow the Dispatch Instruction. The Dispatch Instructions may require the Generating Unit or System Unit to come on line and ramp

up or, in the case of a System Resource, to affirmatively respond to a Real-Time interchange schedule adjustment; all in accordance with the SC's Bid.

CAISO measures the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The SC for the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource is paid the Energy Bid price of the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource for the output under the RUC test.

4.3.7 Consequences of Failure to Pass Compliance Tests

At the conclusion of each test, the following occurs:

- **Notification of Testing Results** – If a Generating Unit, Participating Load, Proxy Demand Resource, or System Resource fails a compliance test, CAISO notifies the SC whose resource was the subject of the test and the provider or owner or operator of the Generating Unit, Participating Load, Proxy Demand Resource, or System Resource providing AS or RUC Capacity of such failure by any means as soon as reasonably practicable after the completion of the test. In addition, regardless of the outcome of the test, CAISO provides the SC whose resource was subject to a test written notice of the results of such test. CAISO at the same time sends a copy of the notice to the provider or owner or operator of the Generating Unit, Participating Load, Proxy Demand Resource, or System Resource providing AS or RUC Capacity. For any RA Resource failing a test, CAISO also notifies the CPUC or Local Regulatory Authority of the failure.

- **Penalties for Failure to Pass Testing** – The SC whose resource fails a test is subject to the financial penalties provided for below. In addition, CAISO may institute Sanctions described in the *BPM for Rules of Conduct Administration*.

A Generating Unit, Participating Load, Proxy Demand Resource, System Unit, or System Resource that fails a test is deemed not to have been available to provide the AS or RUC Capacity concerned or the relevant portion of that service for the entire period the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource was committed to provide the service, unless appropriate documentation (i.e., daily test records) confirming the availability of that service during the committed period(s) is presented to CAISO. The "committed period" is defined as the total of all the hours/days the Generating Unit, Participating Load, Proxy Demand Resource, System Unit, or System Resource was scheduled by CAISO to provide the AS or RUC Capacity beginning from: (i) the last successful test; or (ii) the last time the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or

System Resource actually provided Energy or reduced Demand to provide AS or RUC Capacity; whichever results in a shorter committed period.

The SC for a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource that fails a test is not entitled to payment for the AS concerned or a RUC Availability Payment or for the committed period and adjustments to reflect this are made in the calculation of payments to the SC, provided that any such penalty is reduced to reflect any adjustment made over the duration of the committed period for Undispatchable, Undeliverable or Unavailable Capacity.

System Units providing AS or RUC Capacity to CAISO are subject to the same testing, compensation, and penalties as are applied to individual Generating Units providing AS or RUC Capacity.

If payments for a particular AS or RUC Capacity in a particular Settlement Period would be rescinded under more than one provision of this Section 10.3, the total amount to be rescinded for a particular AS in a particular Settlement Period must not exceed the total payment due in that Settlement Period.

California ISO

Attachment G

EXAMPLES OF PENALTY POINT ACCRUAL FOR NON-LOAD FOLLOWING METERED SUBSYSTEMS

G.1 Examples of Penalty Point Accrual for Non-Load Following MSSs

The following example illustrates the penalty point accrual system for Non-Load following MSS that is applied when two conditions occur, 1) MSS does not schedule to the CAISO Demand Forecast and, 2) MSS Metered Demand exceeds Schedule.

Table G-1: Examples of Penalty Point Accrual for Non-Load Following MSSs

Example	CAISO Demand Forecast	Demand Self-Schedule	Metered Demand	First Condition	Penalty Points			Description
1	100	90	90	No Points	0	0	0	Schedule is less than forecast but meter = schedule so 1st condition not satisfied
2	100	90	92	Calculate Points	0	0	0	Schedule is less than forecast and schedule is less than meter so 1st condition is satisfied but difference between meter and schedule does not exceed 2% of the forecast so no points are calculated
3	100	90	94	Calculate Points	1	0	0	Schedule is less than forecast and schedule is less than meter so 1st condition is satisfied and difference between meter and schedule exceeds 2% of the forecast so 1 point is calculated
4	100	90	98	Calculate Points	0	2	0	Schedule is less than forecast and schedule is less than meter so 1st condition is satisfied and difference between meter and schedule exceeds 5% of the forecast so 2 points are calculated
5	100	90	101	Calculate Points	0	0	5	Schedule is less than forecast and schedule is less than meter so 1st condition is satisfied and difference between meter and schedule exceeds 10% of the forecast so 5 points are calculated