Settlements and Billing

Configuration Guide: Non Compliance Regulation Up Settlement

**CC 6524**

 Version 5.3

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# Purpose of Document

The purpose of this document is to capture the business and functional requirements for the MRTU SaMC Non Compliance Regulation Up Settlement.

# Introduction

## Background

The CAISO will procure the Ancillary Services, Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve in the Day Ahead Integrated Forward Market (IFM) and procure incrementally as needed in the Real-Time Market (RTM). Ancillary Services (AS) are procured simultaneously with Energy bids to meet Regulation and Operating Reserve requirements, using submitted Ancillary Service bids. IFM is performed for each hour of the next trading day. The Fifteen Minute Market performs AS procurement, if needed, at 15-minutes intervals for the current hour and next Trading Hour. The AS awards published for the first 15-minutes interval of the time horizon are binding, the rest are advisory. The AS Pricing and Settlement will be based on Ancillary Service Marginal Price (ASMP), which are calculated for each AS region for each market time interval for each market.

The AS procurement cost is the payment for AS Awarded bids in the Day Ahead IFM and RTM. The Day Ahead and Real-Time Ancillary Services Capacity Settlement Charge Codes are family of Charge Codes for payment to Scheduling Coordinators (SCs) for Awarded Ancillary Services Capacity bids: (1) Regulation Up, (2) Regulation Down, (3) Spinning Reserve, and (4) Non-Spinning Reserve.

The fundamental concepts of settlement methodology for allocation of AS procurement cost to scheduling coordinators are as follows:

* The AS procurement cost allocation for all AS commodity types is hourly, system-wide, and across IFM and Real-Time markets
* The cost of procuring the AS by the CAISO on behalf of the demand will be allocated to the demand using a system wide user rate. The user rate is the average cost of procuring a type of AS in both the forward and real-time market for the whole CAISO system
* The rate for each AS incorporates the No Pay/Non Compliance Capacity and the No Pay/Non Compliance Charge to reflect the ultimate average AS cost
* The rate for each AS reflects an average AS substitution to capture the cascaded AS procurement as it is performed optimally in each AS market. For example, Settlements reflects that multiple service types are procured and substituted simultaneously during IFM optimization
* A difference between AS Requirements and total AS Obligations results in a neutrality adjustment for each AS
* A difference between total AS Procurement and total AS Requirements over all Spinning, Non-Spinning and Regulation Up Ancillary Services results in a single neutrality adjustment for all these services.
* Ancillary Services awards from Intertie Resources are charged explicitly for the Marginal Cost of Congestion on the relevant inter-tie interface at the relevant Shadow Price. The cost of AS Congestion Charges is not recovered through the AS cost allocation, but is settled in the RT Congestion Offset.

By design, the AS Settlement methodology has the following property: If the total AS Procurement matches the total AS Requirements, and if the AS Requirement matches the total AS Obligation for each AS, the AS Cost Allocation is neutral.

By reflecting AS substitution in the AS Rates, this AS settlement methodology eliminates any neutrality loss due to AS substitution and results in an equitable AS Cost Allocation to Scheduling Coordinators’ that Self-Provide AS, since there is no AS substitution among Self-Provided AS.

The Non Compliance Charge for Regulation Up and Down Settlement rescinds full or partial payments for Day Ahead and Real-Time Regulation Up and Down Capacity Awards payments to the extent that the resource awarded the Regulation Up and Down Capacity does not fulfill the requirements associated with that payment.

Regulation Non-Compliance Charges apply when any one of the following criteria are met:

* Unit is Off Automatic Generation Control (AGC) control
* Unit has constrained limit that does not support Regulation range
* Unit is operating out of regulating range
* Unit is operating with telemetry and control communication error

If any of the above conditions occur, then resource is not entitled to its full Regulation Up and Down Capacity payment. The Non Compliance Regulation Up and Down rescinds Regulation Up and Down payment for resources that are awarded Regulation Up and Down bid capacity, i.e., Certified Generator resources and Dynamic import System resources with AGC.

The rescission of payment shall not apply to a capacity payment for any particular Ancillary Service if the weighted average of the Ancillary Service Marginal Prices (ASMPs) is less than or equal to zero.

## Description

The Non Compliance Regulation Up Settlement charge rescinds Day Ahead and Real-Time Regulation Up Capacity Awards payments to the extent that the resource awarded Regulation Up Capacity does not fulfill the requirements associated with that payment.

Non Compliance Charges for Regulation Up are calculated by SaMC on an hourly basis at a resource specific level and summed by Scheduling Coordinator for the Settlement Statement. Non Compliance Charges at a resource specific level are calculated by multiplying Non Compliance Regulation Up capacity for the hour and Non Compliance Regulation Up Price. The Non Compliance Regulation Up Price used in the Non Compliance charge is calculated as the weighted average of the Regulation Up ASMPs across Day Ahead IFM and Real-Time markets.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
| 1.0 | Non Compliance Charges for Regulation Up are calculated on an hourly Settlement Interval basis at a resource specific level.  |
| 2.0 | Non Compliance Charges at a resource specific level are calculated by multiplying Hourly Total Non Compliance Regulation Up Bid capacity and Non Compliance Regulation Up Price. |
| 3.0 | The hourly Non Compliance Regulation Up Price used in the Non Compliance charge is calculated as the weighted average of the Regulation Up ASMPs across Day Ahead IFM and Real-Time AS markets, where the weighting factors are Awarded Regulation Up capacity Bid in each AS markets.  |
| 3.1 | The rescission of payment shall not apply to a Regulation Up capacity payment if the weighted average of the No Pay Regulation Up Price is less than or equal to zero. |
| 4.0 | For adjustments to the Charge Code that cannot be accomplished by correction of upstream data inputs, recalculation or operator override Pass Through Bill Charge (PTB) logic will be applied |
| 5.0 | EDAM Requirements:EDAM entities have AS Self Provision (QSP) and AS Requirement.EDAM resources cannot bid in for Ancillary ServicesEDAM BAA resources cannot provide Ancillary Service for CISO BAAEDAM AS Self Provision (QSP) is not assessed No Pay |
| 5.1 | EDAM Requirements:EDAM resources will receive Ancillary Service Awarded Bid quantities of zero and Ancillary Service Capacity Schedules of non-zero. They will be filtered out in equations. EDAM BAA Ancillary Service Self-provision and requirements are simply information at this point. |

## Predecessor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Day Ahead Regulation Up Capacity Settlement (CC 6500) |
| Real Time Regulation Up Capacity Settlement (CC 6570) |
| Ancillary Service Pre-calculation |
| Regulation No Pay Quantity Pre-calculation |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Regulation Up Obligation Settlement (CC 6594)  |
| Regulation Up Neutrality Allocation (CC 6596) |
| Ancillary Services Upward Neutrality Allocation (CC 6090)  |
| RTM Net Amount Pre-calculation |

## Inputs – External Systems

|  |  |  |
| --- | --- | --- |
| Row #  | Variable Name | Description |
| 1 | PTBChargeAdjustmentNoPayRegUpBQ’Jmdh | Non Compliance Regulation Up PTB Pay Charge Adjustment Amount due BA *B* and PTB ID *J* **($)** |
| 2 | DARegUpAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh | Day Ahead Regulation Up Awarded Bid capacity for resource r. **(MW)** |
| 3 | 15MinuteRTMRegUpAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc | Real-Time Regulation Up Awarded Bid capacity for resource r **(MW).**  |

## Inputs - Predecessor Charge Codes or Pre-calculations

|  |  |  |
| --- | --- | --- |
| Row #  | Variable Name | Predecessor Charge Code/ Pre-calc Configuration |
| 1 | BA5minNoPayRegUpBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’hif | Regulation No Pay Quantity Pre-calculation |
| 2 | DARegUpSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh | CC 6500 Day Ahead Regulation Up Capacity Settlement |
| 3 | RT15MINRegUpSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdhc | CC 6570 Real Time Regulation Up Settlement |
| 4 | DARegUpBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh | CC 6500 Day Ahead Regulation Up Capacity Settlement |
| 5 | RT15MINRegUpBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhc | CC 6570 Real Time Regulation Up Settlement |

## CAISO Formula

### NoPayRegUpSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh = NoPay5MRegUpSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif

### NoPay5MRegUpSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif = Max (0, NoPay15MRegUpSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc)\*BA5minNoPayRegUpBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’hif

### NoPay15MRegUpSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc = Total15MRegUpCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc / (DARegUpAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh +((.25) \* (15MinuteRTMRegUpAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

### Where Bal Authority Area (Q’) = ‘CISO’

### Total15MRegUpCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc = (-1) \* (DARegUpSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh + RT15MINRegUpSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

### NoPay5MRegUpBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif = Max (0, NoPay15MRegUpBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc)\*BA5minNoPayRegUpBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’hif

### NoPay15MRegUpBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc = Total15MRegUpBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc / (DARegUpAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh +((.25) \* (15MinuteRTMRegUpAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

### Where Bal Authority Area (Q’) = ‘CISO’

### Total15MRegUpBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc = (-1) \* DARegUpBidCostAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh + RT15MINRegUpBidCostAmountBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

NOTE: BAHourlyTotalNoPayRegUpSettlementAmount and CAISOHourlyTotalNoPayRegUpSettlementAmount are calculated as part of the reporting structure and will not be configured as individual charge types.

## Outputs

| Row # | Name | Description |
| --- | --- | --- |
| 1 | NoPayRegUpSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh | Non Compliance Regulation Up Capacity Settlement Amount due Business Associate B for resource *r* Entity Component Type F’ Entity Component Subtype S’ for Trading Day *d* and Trading Hour *h* **($)** |
| 2 | NoPay5MRegUpSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif  | Non Compliance 5 Minute Regulation Up Capacity Settlement Amount due resource *r,* Trading Day *d,*  Trading Hour *h,* and Settlement Interval *f* **($)** |
| 3 | NoPay15MRegUpSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Non Compliance 15 Minute Regulation Up Capacity price for resource *r*  for Trading Day *d,*  Trading Hour *h,* and FMM Interval *c* **($/MW)** |
| 4 | Total15MRegUpCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Total 15 Minute Regulation Up Cost for resource *r*  for Trading Day *d,*  Trading Hour *h,* and FMM Interval *c* **($)** |
| 5 | All input Compliance data that are required for validation of Compliance data by Market Participants should be accessible for review by analysts and report on Settlement Statements. |  |
| 6 | NoPay5MRegUpBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif  | Non Compliance 5 Minute Regulation Up Capacity Bid Cost Amount due resource *r,* for Trading Day *d,*  Trading Hour *h,* and Settlement Interval *f* **($)** |
| 7 | NoPay15MRegUpBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Non Compliance 15 Minute Regulation Up Capacity Bid Cost price for resource *r*  for Trading Day *d,*  Trading Hour *h,* and FMM Interval *c* **($/MW)** |
| 8 | Total15MRegUpBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Total 15 Minute Regulation Up Bid Cost for resource *r*  for Trading Day *d,*  Trading Hour *h,* and FMM Interval *c* **($)** |

# Charge Code Effective Date

| Charge Code/Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Update Version Type |
| --- | --- | --- | --- | --- |
| Non Compliance Regulation Up Settlement (CC 6524) | 5.0 | 04/01/09 | 11/30/12 | Documentation Edits Only |
| Non Compliance Regulation Up Settlement (CC 6524) | 5.1 | 12/1/12 | 4/30/14 | Configuration Impacted |
| Non Compliance Regulation Up Settlement (CC 6524) | 5.1a | 05/01/14 | 6/30/15 | Documentation Edits Only |
| Non Compliance Regulation Up Settlement (CC 6524) | 5.2 | 7/1/15 | 4/30/26 | Configuration Impacted |
| Non Compliance Regulation Up Settlement (CC 6524) | 5.3 | 5/1/26 | Open | Configuration Impacted |