Settlements and Billing

Configuration Guide: Non Compliance Regulation Down Settlement

**CC 6624**

 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 Down Settlement (Charge Code 6624).

# 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, CC 6774.

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 Down Settlement charge rescinds full or partial payments of Day Ahead and Real-Time Regulation Down Capacity Awards payments to the extent that the resource awarded Regulation Down Capacity does not fulfill the requirements associated with that payment.

Non Compliance Charges for Regulation Down 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 Down capacity for the hour and Non Compliance Regulation Down Price.

# Charge Code Requirements

## Business Rules

| Bus Req ID | Business Rule |
| --- | --- |
| 1.0 | Non Compliance Charges for Regulation Down are calculated on an hourly Settlement Interval basis at a resource specific level.  |
| 1.1 | Non Compliance Charges at a resource specific level are calculated by multiplying Hourly Total Non Compliance Regulation Down capacity and Non Compliance Regulation Down Price. |
| 1.2 | The Non Compliance Regulation Down capacity for the hour should be calculated by spreading the Unavailable MW evenly over the entire hour. |
| 1.3 | The rescission of payment shall not apply to a Regulation Down capacity payment if the weighted average of the No Pay Regulation Down Price is less than or equal to zero. |
| 2.0 | 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 |
| 3.0 | 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 |
| 3.1 | 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 Down Capacity Settlement (CC 6600) |
| Real Time Regulation Down Capacity Settlement (CC 6670) |
| Ancillary Service Pre-calculation |
| Regulation No Pay Quantity Pre-calculation |

## Successor Charge Codes

| Charge Code/ Pre-calc Name |
| --- |
| Regulation Down Obligation Settlement (CC 6694)  |
| Regulation Down Neutrality Allocation (CC 6696) |
| RTM Net Amount Pre-calculation |

## Inputs – External Systems

|  |  |  |
| --- | --- | --- |
| Row #  | Name | Description |
| 1 | PTBChargeAdjustmentNoPayRegDownBQ’Jmdh | Non Compliance Regulation Down PTB Pay Charge Adjustment Amount due Business Associate B PTB ID J for Trading Day d and Trading Hour h **($)** |
| 2 | DARegDownAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh | Day Ahead Regulation Down Awarded Bid capacity for resource r. **(MW)** |
| 3 | 15MinuteRTMRegDownAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc | Real-Time Regulation Down Awarded Bid capacity for resource r **(MW).**  |

## Inputs - Predecessor Charge Codes or Pre-calculations

|  |  |  |
| --- | --- | --- |
| Row #  | Name | Predecessor Charge Code/ Pre-calc Configuration |
| 1 | BA5minNoPayRegDownBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhcif | Regulation No Pay Quantity Pre-Calculation |
| 2 | DARegDownSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh | CC 6600 Day Ahead Regulation Down Capacity Settlement |
| 3 | RT15MRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhc | CC 6670 Real Time Regulation Down Settlement |
| 5 | RT15MRegDownBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhc | CC 6670 Real Time Regulation Down Settlement |
| 6 | DARegDownBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh  | CC 6600 Day Ahead Regulation Down Capacity Settlement |

## CAISO Formula

### NoPayRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh = NoPay5MRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif

### NoPay5MRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif = Max (0, NoPay15MRegDownSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc)\*BA5minNoPayRegDownBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhcif

### NoPay15MRegDownSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc = Total15MRegDownCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc / (DARegDownAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh +((.25) \* (15MinuteRTMRegDownAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc)))

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

### Total15MRegDownCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc = (-1) \* (DARegDownSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh + RT15MRegDownSettlementAmountBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

### NoPay5MRegDownBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif = Max (0, NoPay15MRegDownBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc)\*BA5minNoPayRegDownBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhcif

### NoPay15MRegDownBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc = Total15MRegDownBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc / (DARegDownAwardedBidQuantity BrtuT’I’Q’M’VL’W’R’F’S’mdh +((.25) \* (15MinuteRTMRegDownAwardedBidQuantityBrtuT’I’Q’M’VL’W’R’F’S’mdhc)))

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

### Total15MRegDownBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc = (-1) \* (DARegDownBidCostAmountBrtuT’I’Q’M’VL’W’R’F’S’mdh + RT15MRegDownBidCostAmountBrtuT’I’Q’M’VL’W’R’F’S’mdhc)

Note: TotalNoPayRegDownSettlementAmount Bmdh and CAISOHourlyTotalNoPayRegDownSettlementAmount dh are calculated as part of the reporting structure and will not be configured as individual charge types.

## Outputs

| Row #  | Name | Description |
| --- | --- | --- |
| 1 | NoPayRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdh  | Non Compliance Regulation Down Capacity Settlement Amount due for resource r for Trading Day d and Trading Hour h **($)**  |
| 2 | In addition, all inputs are required to be accessible for review by analysts and report on Settlement Statements. |  |
| 3 | NoPay15MRegDownSettlementPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Non Compliance 15 Minute Regulation Down Capacity price for resource r for Trading Day d, Trading Hour h, and FMM Interval c **($/MW)** |
| 4 | Total15MRegDownCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Total 15 Minute Regulation Down Cost for resource r for Trading Day d Trading Hour h and FMM Interval c ($/MW) |
| 5 | NoPay5MRegDownSettlementAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif | Non Compliance 5 Minute Regulation Down Capacity Settlement Amount due for resource r for Trading Day d, Trading Hour h, and Settlement Interval f **($)** |
| 6 | NoPay5MRegDownBidCostAmount BrtuT’I’Q’M’VL’W’R’F’S’mdhcif | Non Compliance 5-Minute Regulation Down Capacity Bid Cost Amount due for resource r for Trading Day d, Trading Hour h, and Settlement Interval f **($)** |
| 7 | NoPay15MRegDownBidCostPrice BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Non Compliance 15 Minute Regulation Down Capacity Bid Cost price for resource r for Trading Day d, Trading Hour h, and FMM Interval c **($/MW)** |
| 8 | Total15MRegDownBidCost BrtuT’I’Q’M’VL’W’R’F’S’mdhc | Total 15 Minute Regulation Down Bid Cost for resource r for Trading Day d Trading Hour h and FMM Interval c ($/MW) |

# Charge Code Effective Date

| Charge Code/Pre-calc Name | Document Version | Effective Start Date | Effective End Date | Version Update Type |
| --- | --- | --- | --- | --- |
| Non Compliance Regulation Down Settlement (CC 6624) | 5.0 | 04/01/09 | 11/30/12 | Documentation Only |
| Non Compliance Regulation Down Settlement (CC 6624) | 5.1 | 12/1/12 | 4/30/14 | Configuration Impacted |
| Non Compliance Regulation Down Settlement (CC 6624) | 5.1a | 05/01/14 | 6/30/15 | Documentation Only |
| Non Compliance Regulation Down Settlement (CC 6624) | 5.2 | 7/1/15 | 4/30/26 | Configuration Impacted |
| Non Compliance Regulation Down Settlement (CC 6624) | 5.3 | 5/1/26 | Open | Configuration Impacted |