Advisory Shut-down Bid Cost Recovery Pre-Market Simulation Training and Scenario Walkthrough

Today's Trainer

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California ISO

Rev. 06/10/2024

Housekeeping

REMAIN MUTED
Keep yourself muted to minimize background noise

ASKING QUESTIONS
Unmute to ask verbal questions or write in the chat pod

RAISING HAND
Raise your hand using WebEx interactivity tools

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Our Meeting Agenda

Summary
(10 min)

Settlements
(20 min)

CMRI
(10 min)

Market
Simulation
(15 min)

Wrap Up
(5 min)

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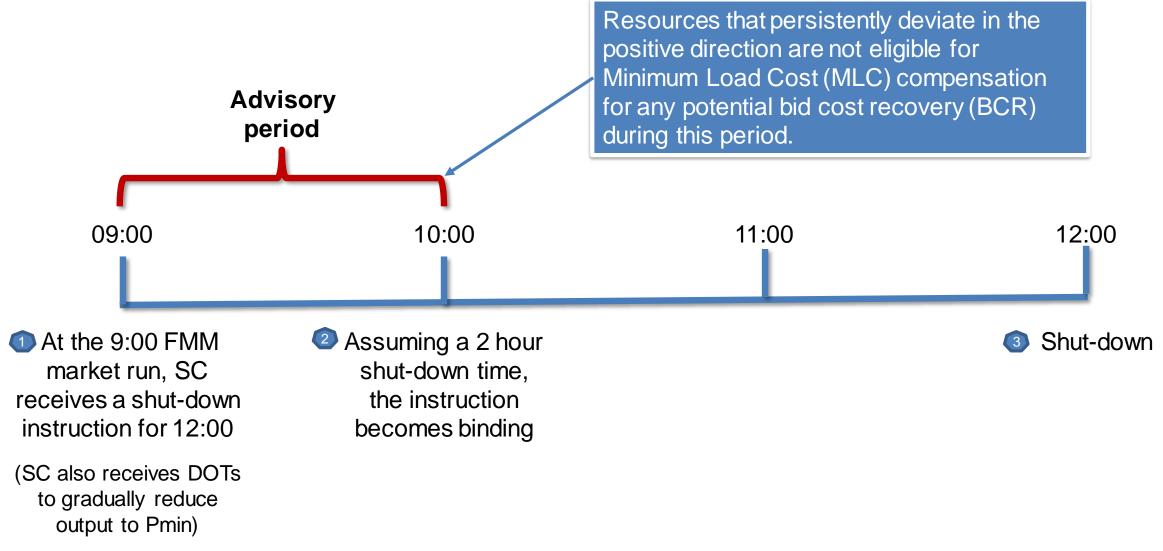
Summary

Section Focus
- Background
- Example
- Q&A

Tariff Section 11.17.2.1 – Disqualification Based on Advisory Schedules

> If Dispatch Operating Point – Shut-Down State Variable ≤ Minimum Load, then Minimum Load Costs are disqualified from Bid Cost Recovery

"Disqualification Based on Advisory Schedules From the Dispatch Interval in which the CAISO has determined that the Dispatch Operating Point minus the Shut-Down State Variable is less than or equal to the Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and until the Shut-Down State Variable is reset, the IFM Minimum Load Costs, RUC Minimum Load Costs, or RTM Minimum Load Costs, as applicable, will be disqualified from the Bid Cost Recovery calculation."

Example of shut-down instruction

Advisory period

Resources that persistently deviate in the positive direction are not eligible for Minimum Load Cost (MLC) compensation for any potential bid cost recovery (BCR) during this period.

09:00   10:00   11:00   12:00

1 At the 9:00 FMM market run, SC receives a shut-down instruction for 12:00

(SC also receives DOTs to gradually reduce output to Pmin)

2 Assuming a 2 hour shut-down time, the instruction becomes binding

3 Shut-down

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Resources may not not eligible for minimum load cost during an advisory shut-down period.

Schedulers

- Persistently incrementing output during an advisory shut-down period makes a resource ineligible for minimum load costs during that period.

Settlements

- **The ISO is implementing a flag that sends advisory shut-down information to settlements**
- During this period a resource with positive UIE may be ineligible for minimum load cost compensation
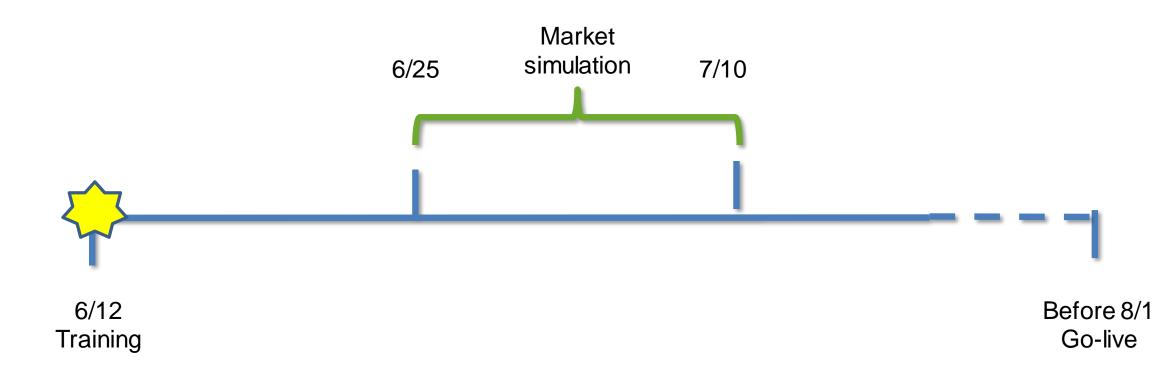- Could potentially impact bid cost recovery

Q&A

- Is this a new process?
  - No, this is an existing tariff requirement. The change is that the advisory period information will be sent to settlements.

- What happens if the unit's advisory instruction is dropped or reversed?
  - The shutdown variable that re-qualifies MLC for BCR will reset.

- Is this only for day-ahead market?
  - No, Can impact IFM, RUC or RTM MLC

- Will this change be retroactive?
  - No, it will start as of the effective date

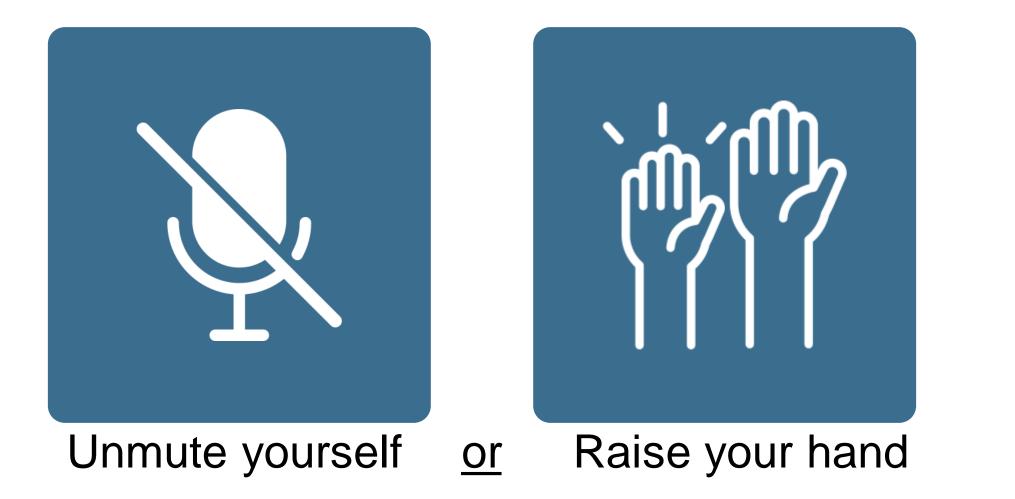| Acronyms |
| --- |
| MLC – Minimum Load Cost |
| BCR – Bid Cost Recovery |
| IFM – Integrated Forward Market |
| RUC – Residual Unit Commitment |
| RTM – Real-time Market |

Milestones

6/25

Market simulation

7/10

6/12
Training

Before 8/1
Go-live

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What Questions Do You Have?

Unmute yourself   <u>or</u>   Raise your hand

Settlements

Section Focus
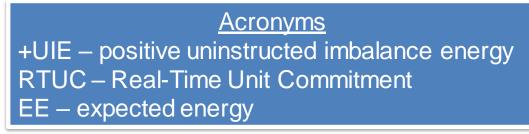- Introduction
- Shut-down state variable

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Problem Statement & Resolution

- ## Problem:
  - Missing input data value for existing bill determinant (BD), BA_5M_RSRC_ADVISORY_SHUTDOWN_FLAG, prevents CAISO from qualifying Minimum Load Cost even though the settlements formulations currently exist.

- ## Solution:
  - Ensure advisory shutdown instruction data is broadcasted so that advisory shutdown flag BD can be created
  - Use the input and reflect Minimum Load Cost qualification in Settlements

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What does the Shut-Down State Variable do?

- Keeps track of +UIE once there is an advisory shut-down instruction. Provides MWh cumulative over RTUC intervals when a resource follows their shut-down instruction.

- Begins to accumulate +UIE as soon as an advisory shutdown instruction exists w/in RTM dispatch horizon and continues to accumulate +UIE as long as (1) unit is On, and (2) Metered Energy less Regulation Energy less EE > Performance Metric Tolerance Band.

- Will be reset to zero when most recent RTUC run no longer has an advisory shutdown instruction w/in RTM dispatch horizon or when resource is Off.

Acronyms
+UIE – positive uninstructed imbalance energy
RTUC – Real-Time Unit Commitment
EE – expected energy

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Advisory Shut-Down Data

- Advisory shutdown (yellow) w/in each RTUC run horizon (row) moves from RTUC to RTUC until later binds (in orange)

Market Run's Interval Horizon →

Market Run ↓

	Payload name	RTPD binding interval	RTPD 1st advisory	RTPD 2nd advisory	RTPD 3rd advisory	RTPD 4th advisory
RTUC A	Payload 1	09:00-09:15	09:15-09:30	09:30-09:45	09:45-10:00	10:00-10:15
RTUC B	Payload 2	09:15-09:30	09:30-09:45	09:45-10:00	10:00-10:15	10:15-10:30
RTUC C	Payload 3	09:30-09:45	09:45-10:00	10:00-10:15	10:15-10:30	10:30-10:45
RTUC D	Payload 4	09:45-10:00	10:00-10:15	10:15-10:30	10:30-10:45	10:45-11:00
RTUC E	Payload 5	10:00-10:15	10:15-10:30	10:30-10:45	10:45-11:00	11:00-11:15

- Scenario above shows advisory shutdown was maintained and CAISO didn't change its instruction to have a shutdown. It is possible for CAISO to change its instruction depending on optimization results from each RTUC run.
- Each row or RTUC run above is at least 15-minutes earlier than the first column RTPD binding interval.

Settlement example

Assumptions
- Pmin = 20 MW
- MLC = $300 per 5-min interval

Interval (5-min)	97	98	99	100	101	102	103	104	105	106	107	108
MLC	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300
Meter	30	30	30	30	30	30	30	30	30	30	30	30
TEE	25	25	25	25	25	25	25	25	25	25	25	25
UIE	5	5	5	5	5	5	5	5	5	5	5	5
Pos UIE	5	5	5	5	5	5	5	5	5	5	5	5
Advisory Shutdown Flag	1	1	1	1	1	1	1	1	1	0	0	0
UIE Cumulative (pos UIEs only)	5	10	15	20	25	30	35	40	45	0	0	0
TEE- UIE Cumulative	20	15	10	5	0	-5	-10	-15	-20	25	25	25
AdvisoryShutdownUIEFlag	1	1	1	1	1	1	1	1	1	0	0	0
Qualified MLC ($)	0	0	0	0	0	0	0	0	0	300	300	300

Reminder:
If Dispatch Operating Point – Shut-Down State Variable ≤ Minimum Load, then Minimum Load Costs are disqualified from Bid Cost Recovery

Charge codes that could be impacted

CAISO BAA Charge Codes:

CC 6630 - IFM Bid Cost Recovery Settlement

CC 6636 - IFM Bid Cost Recovery Tier 1 Allocation

CC 6637 - IFM Bid Cost Recovery Tier 2 Allocation

CC 6806 - RUC Bid Cost Recovery Tier 1 Allocation

CC 6807 - RUC Bid Cost Recovery Tier 2 Allocation
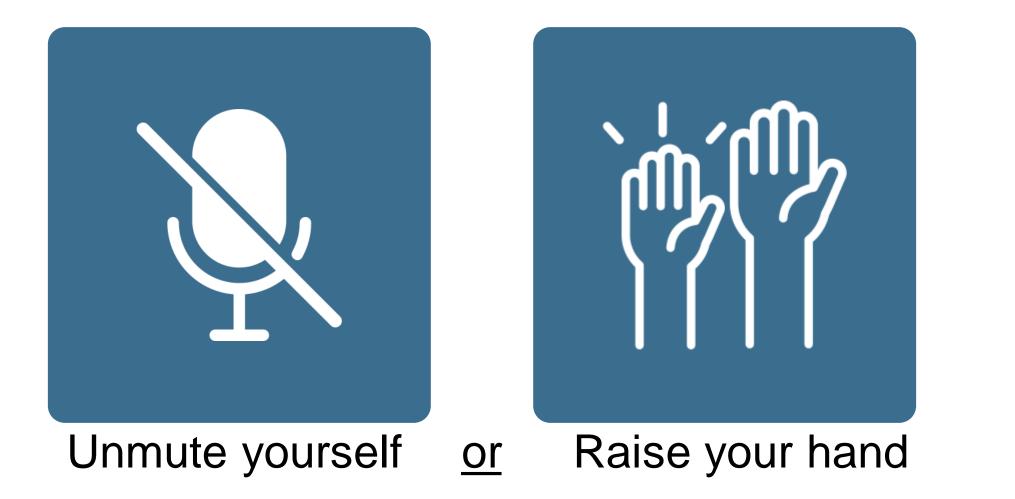
CC 6620 - Bid Cost Recovery Settlement

CC 6678 - Real Time Bid Cost Recovery Allocation

EIM Charge Codes:

CC 66200 - Bid Cost Recovery EIM Settlement

CC 66780 - Real Time Bid Cost Recovery EIM Allocation

What Questions Do You Have?

Unmute yourself   or   Raise your hand

Customer Market Results Interface - CMRI

Section Focus
- New CMRI Report

UI

API

CMRI Technical Specification Version 6.5.2 for Independent 2024

New version for an existing API. Includes:
- retrieveStartupShutdownInstructions_v2
- retrieveStartupShutdownInstructions_v2_DocAttach

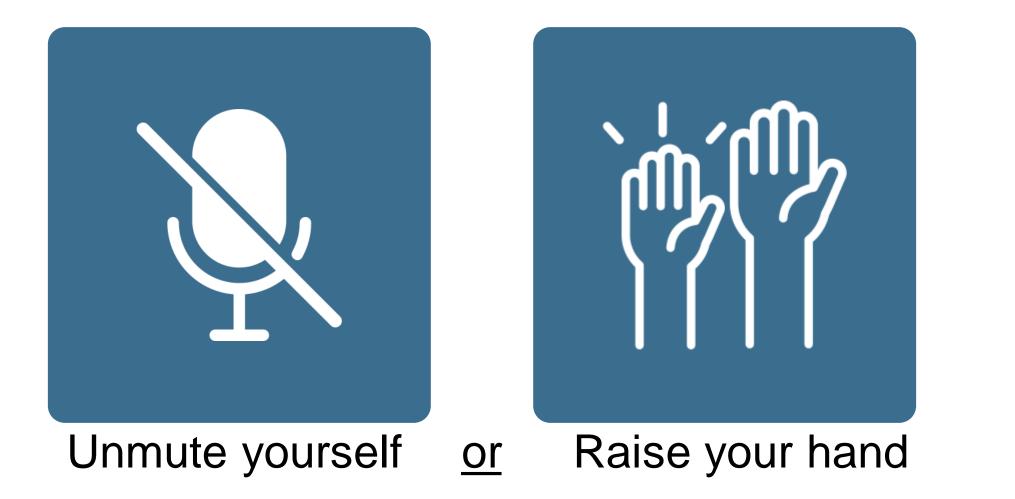California ISO

California ISO — Customer Market Results Interface

Day-Ahead **Real-Time** Post-Market Default Bids Convergence Bidding Forecast Reference LSE Energy Imbalance Market Phase Shifter Gas Burn Reliability Coordination

Trade Date: 05/21/2024 Entity: [ ] Resource: 1 item(s)   Apply

Real-Time Advisory Shutdown Instructions

1 - 11 of ???   GO

Trade Date	SC ID	Resource	Resource Type	Instruction Source	Instruction Type	Binding Instruction	Interval Start Time	Instruction Start Time
05/21/2024			Generator	RTUC	SHUTDOWN	N		
05/21/2024			Generator	RTUC	SHUTDOWN	N		
05/21/2024			Generator	RTUC	SHUTDOWN	N		

What Questions Do You Have?

Unmute yourself   <u>or</u>   Raise your hand

Market Simulation Scenario Walkthrough

Section Focus
- Current scenarios
- Recommendations for participation

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Market Simulation

Scenario 1

Scenario Number	Guided unstructured scenario	
1	Description	Verify advisory shutdown instructions for generating resources in the new CMRI report.
	ISO Actions	Run IFM and RTM markets for the simulation trade date.
	WEIM Market Participant Actions	1) SC submits RTM bids for its portfolio of generator resources 2) SC receives the advisory shutdown instruction in real-time through the new CMRI report (instead of through ADS) 3) After the simulated trade date is over, the simulation will provide a settlement statement to show the BD BA_5M_RSRC_ADVISORY_SHUTDOWN_ FLAG is correctly aligned with the CMRI report.
	ISO Market Participant Actions	1) SC submits IFM and RTM bids for its portfolio of generator resources 2) SC receives the advisory shutdown instruction in real-time through the new CMRI report (instead of through ADS) 3) After the simulated trade date is over, the simulation will provide a settlement statement to show the BD BA_5M_RSRC_ADVISORY_SHUTDOWN_ FLAG is correctly aligned with the CMRI report.
	Expected Outcome	Verify CMRI report for advisory shutdown flag and compare with settlements report CMRI report: Real-Time ==> Real-Time Advisory Shutdown Instructions
	Anticipated Settlement Outcome	Verify Settlements report BD BA_5M_RSRC_ADVISORY_SHUTDOWN_ FLAG is correctly aligned with the CMRI report.
	Expected Settlement Outcome	N/A

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Market Simulation

Scenario 2

Scenario Number	Structured scenario	
2	Description	Verify BCR minimum load cost is assessed for resources with advisory shutdown
	ISO Actions	ISO will trigger BCR for generating resources with advisory shutdown. ISO will submit dummy meter data for the resource.
	WEIM Market Participant Actions	N/A
	ISO Market Participant Actions	N/A
	Expected Outcome	Verify settlements statements for the BCR assessed charge codes.
	Anticipated Settlement Outcome	BCR minimum load cost is assessed and seen as part of SUC_MLC pre-calc.
	Expected Settlement Outcome	SUC_MLC pre- calc, 6630, 6620, 66200

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Participate in Market Simulation

Register to participate in the simulation at MarketSim@caiso.com mailbox by June 14, 2024

Attend Market Simulation Forum calls to stay informed on timing of activities for this and other release
- Monday and Thursday 2pm PPT

Submit questions and additional scenario requests to the ISO via the CIDI application

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What Questions Do You Have?

Unmute yourself   or   Raise your hand

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Wrap Up

Summary, Q&A
- What's happening next.

What do you need to do?

Market Simulation
- Sign up to participate in the market simulation by June 14, 2024
- Are there other scenarios that you would like to see? Let us know!
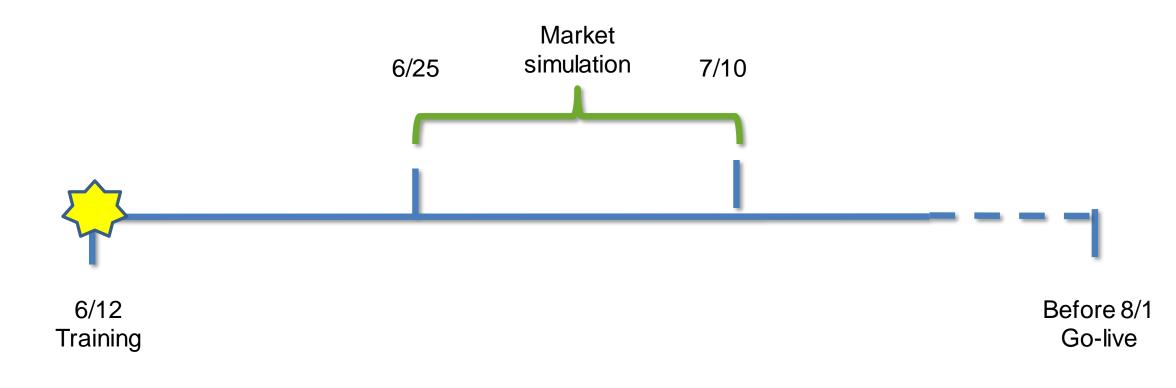
Production
- Schedulers – if a resource is in an advisory shut-down period that minimum load cost may not be eligible for bid cost recovery

- Settlements staff – If minimum load costs are not being considered for bid cost recovery, check to see if the interval was an advisory shut-down period
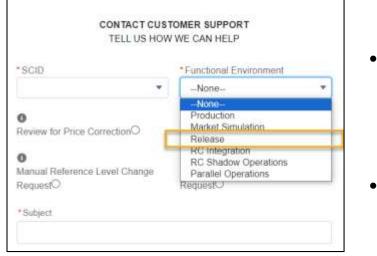
Submit questions and disputes through CIDI as necessary

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Milestones

Market simulation

6/25 — 7/10

6/12 Training

Before 8/1 Go-live

Functional Environment Options for CIDI Cases

- Inquiries are not directly related to Market Simulation issues & when there is no environment impact
  - Ex. Business Requirements Specifications (BRS) comments, implementation questions, feedback, etc.
- Contact: release@caiso.com

- Inquires that are related to the MAP-Stage Environments (non-production)
  - Ex. Connectivity, unanticipated simulation results, etc.
- Contact: MarketSim@caiso.com

Tell us how we did

Takes 3-5 minutes to complete

Helps us improve future training

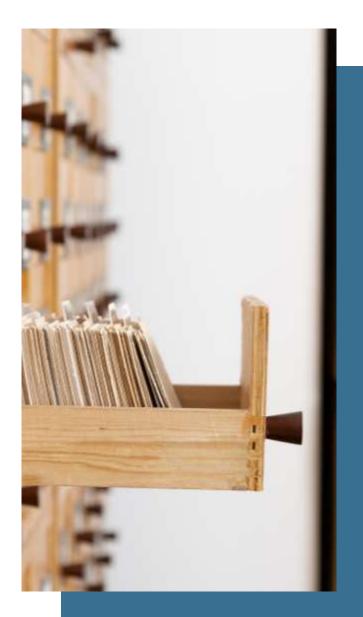Link: https://www.surveymonkey.com/r/caisocoursesurvey

Name: Cynthia Hinman

Training: Advisory Shut-Down Bid Cost Recovery Training

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Thank you for your participation!

For clarification on anything presented in this training, send an email to:
CustomerReadiness@caiso.com

For any other questions or stakeholder specific questions or concerns, please submit a CIDI ticket.

Reference Links

Tariff Section 11.17.2.1:
https://www.caiso.com/Documents/Section11-CaliforniaISOSettlements-and-Billing-asof-Jan1-2024.pdf

PRR 1571 for the Advisory Shutdown Flag (Settlements):
https://bpmcm.caiso.com/Pages/ViewPRR.aspx?PRRID=1571&IsDlg=0

PRR 1574 for Advisory Shut-down Report (Market Instruments):
https://bpmcm.caiso.com/Pages/ViewPRR.aspx?PRRID=1574&IsDlg=0

BPM for Market Instruments, Section 10.1, CMRI reports:
https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Market%20Instruments

Updated CMRI Technical Specification:
https://developer.caiso.com/Artifacts/CMRI%20Interface%20Specification%20v6.5.2.pdf

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