

Attachment O

Reference Level Change Requests

O Reference Level Change Requests

This attachment discusses Reference Levels and how market participants can request adjustments to these values. Reference Levels refer to a resource's Default Startup Bid, Default Minimum Load Bid, Default Transition Bid and Default Energy Bid. Commitment cost Reference Levels use either the Proxy Cost or Registered Cost methodology outlined in Attachment G of the BPM for Market Instruments. Default Energy Bids are calculated under various options outlined in Attachment D of the BPM for Market Instruments. Commitment cost Reference Levels are used to cap the commitment cost components of market participants' bids and Default Energy Bids (DEBs) are used by the market when the resource energy bid is mitigated under the Market Power Mitigation (MPM) process. The CAISO also uses Default Energy Bids when it must generate energy bids for resources.

The CAISO calculates Reference Levels using resource parameters registered in the Master File and fuel or fuel-equivalent cost inputs. In certain circumstances, market participants may find that their Reference Levels do not adequately reflect their actual or expected fuel costs. For example, the fuel cost input for gas-fired resources is based on published next-day trading indices, whereas the actual cost of gas encountered by a resource may be the same-day gas price. In such a case, a market participant may be able to request a Reference Level Change Request.

This Attachment O of the BPM for Market Instruments contains:

1. The process for Reference Level Change Requests.
2. The CAISO audit process to ensure supplier's Reference Level Change Request is based on verifiable increases in fuel or fuel-equivalent costs.
3. The after-market cost recovery process for resources that made Reference Level Change Requests that were not approved before the applicable market run.

O.1 Reference Level Change Requests

Scheduling Coordinators for resources that have or expect to have fuel or fuel-equivalent costs that are greater than the costs used by the CAISO to calculate Reference Levels may submit Reference Level Change Requests to update their Default Commitment Costs and DEBs. Although the CAISO has multiple methodologies for calculating Reference Levels, the Proxy Cost methodology for commitment costs and the Variable Cost Option DEB formula will be used for all Reference Level Change Requests. Scheduling Coordinators must submit the total Reference Level value including fuel or fuel-equivalent costs, the variable operations and maintenance cost adder, grid management charge adder, greenhouse gas compliance costs (if appropriate), frequently mitigated adders (if appropriate), negotiated major maintenance adders (if appropriate), and opportunity cost adders (if appropriate). Further, the resource characteristics used in these equations must be consistent with Master File registered values for the relevant trade date.

The Scheduling Coordinator must have contemporaneously available documentation at the time of making a Reference Level Change Request. The contemporaneously available documentation must justify an increase in expected fuel or fuel-equivalent costs compared to the costs used by the CAISO to calculate Reference Levels. The documents must show that the price of fuel is based on next-day procurement for the day-ahead market and same-day or next-day procurement for the real-time market and must reflect prudent procurement practices. This is to ensure that the current prevailing cost of fuel is the driver for a Reference Level Change Request, not higher prices suppliers incurred for a future operating day. For non-standard gas trading days, documents must show the price of fuel is for procurement no sooner than the most recent standard gas trading day.

Supporting documentation may include:

- Quotes from natural gas suppliers
- Gas purchase invoices
- Evidence of a bid price that was part of an unsuccessful good faith effort to purchase fuel
- Other appropriate documentation demonstrating fuel or fuel-equivalent costs

On days when the gas system is constrained, the local distribution company, interstate or intra-state gas pipeline operator may invoke an Operation Flow Order (OFO) or issue other instructions restricting use of gas imbalance services. The non-compliance charge associated with the specific level of flow order can be included in the fuel cost component of automated Reference Level Change Request submitted after the last standard gas nomination cycle for the remaining hours of the same day real-time market. The resource must retain evidence showing notice of fuel transport flow orders (e.g. OFO or Emergency Flow Order) and associated imbalance charges.

Scheduling Coordinators may submit Reference Level Change Requests either through an automated interface in SIBR or through a manual process via the CIDI system. Automated and manual Reference Level Change Requests are discussed in further detail in the sections below.

O.1.1 Automated Reference Level Change Requests

Automated Reference Level Change Requests can be made through the SIBR interface and need to be submitted prior to the close of the applicable day-ahead or real-time markets. All Reference Level Change Requests must use the Proxy Cost based Default Commitment Cost Bids and the variable-cost based Default Energy Bid formulas with adjustments made only to the fuel or fuel-equivalent cost values. No other parameters of the cost calculations may be modified. For

automated Reference Level Change Requests that are submitted prior to the close of the applicable markets, the CAISO systems will compare the requested Reference Level to a resource-specific Reasonableness Threshold value. Requested Reference Levels that are less than or equal to the Reasonableness Threshold will be accepted and used in the next applicable CAISO market run as soon as practicable. If the requested Reference Level is above the Reasonableness Threshold, the request will be not be approved but the resource's Reference Level will be automatically adjusted to the value of the Reasonableness Threshold. The details of the calculation and examples of the resource-specific Reasonableness Threshold are discussed below in Section O.1.2.

The Scheduling Coordinator must have contemporaneously available documentation at the time of making a Reference Level Change Request that justifies an increase in actual or expected fuel costs compared to the fuel costs used by CAISO to calculate Reference Levels. The Scheduling Coordinator need not submit the supporting documentation when submitting an automated Reference Level Change Request. However, all resources that submit an automated Reference Level Change Request may be audited and therefore must retain evidence that their fuel costs are higher than the fuel costs used in the CAISO calculation of Reference Levels. See Section O.2 for automated Reference Level Change Request audits.

In the SIBR interface, Scheduling Coordinators may select a resource for automated Reference Level Change Requests and must provide the following information:

Default Start-up Bid Request

- Start Date
- End Date
- Adjustment Values for hot, medium and cold starts separately
- Market Type (DA, RT)

Default Minimum Load Bid Request

- Start Date (hour granularity)
- End Date (hour granularity)
- Adjustment Values
- Market Type (DA, RT)

Default Energy Bid Request

- Start Date (hour granularity)
- End Date (hour granularity)
- Adjustment Values for each bid segment
- Market Type (DA, RT)

SIBR will validate the automated Reference Level Change Requests for the following items:

- Date verification
- Start time must be prior to End time

- Adjustment values must be non-negative
- Default Energy Bid adjustments must be monotonically increasing
- Default Energy Bid adjustments must not exceed the energy bid cap
- Default bid values will be subject to existing SIBR basic validations
- Adjustment value is less than or equal to the Reasonableness Threshold

Reference Level Change Requests must pass SIBR validations to be eligible for the after-market cost recovery process discussed in Section O.3.

O.1.2 Reasonableness Thresholds

O.1.2.1 Volatility Multipliers

The CAISO will calculate Reasonableness Thresholds with fuel or fuel-equivalent costs that are scaled by a volatility multiplier to provide a margin in Default Commitment Cost Bid caps and DEB calculations. This volatility multiplier is intended to reflect potential increases in costs compared to the fuel cost values used by the CAISO for the Reference Level calculation.

Figure O.1 Reasonableness Threshold



As described in Attachment C of the BPM for Market Instruments, the CAISO calculates two gas prices per fuel region for use in the next day's day-ahead and real-time markets. These gas prices are based on data from various natural gas publications. If for any reason, the CAISO does not receive at least one gas price publication, the gas price published on the prior day is used in fuel region price calculations. The Reasonableness Thresholds for days without a published gas index, e.g., days after holidays and weekends, will include a volatility multiplier of 125% to be applied to the gas commodity price. For days when the CAISO receives at least one current gas price index publication, the Reasonableness Thresholds will include a volatility multiplier of 110% on the gas commodity price. For non-gas resources, the average cost for the fuel or fuel-equivalent costs will include a volatility multiplier of 110% on all days.

As described in Attachment C of the BPM for Market Instruments, the daily fuel region price used in Default Commitment Cost Bids and DEBs is calculated as follows:

$$\text{Daily fuel region price} = \text{Commodity gas price index} + \text{Total transportation cost}$$

The fuel region price used Reasonableness Thresholds for Reference Levels for days without a newly published gas price index is calculated as follows:

$$\begin{aligned} &\textbf{Reasonableness Threshold fuel region price with 125\% volatility multiplier} \\ &= (1.25 \times \text{Commodity gas price index}) + \text{Total transportation cost} \end{aligned}$$

The fuel region price used Reasonableness Thresholds for Reference Levels for days where there was a published gas price index is calculated as follows:

$$\begin{aligned} &\textbf{Reasonableness Threshold fuel region price with 110\% volatility multiplier} \\ &= (1.10 \times \text{Commodity gas price index}) + \text{Total transportation cost} \end{aligned}$$

For non-gas resources under the Proxy Cost option and Variable cost-based DEB, the CAISO uses the fuel-equivalent costs registered in Master File to calculate Reference Levels. A volatility multiplier of 110% will be used for all days in the calculation of Reasonableness Threshold for non-gas resources.

O.1.2.2 Reasonableness Thresholds for Commitment Costs

Reasonableness Thresholds for Default Minimum Load Bids and Default Start-up Bids will be based on the Proxy Cost methodology described in Attachment G.2 and the volatility multipliers that are either 125% or 110% depending on the resource fuel type, and on whether the gas price indices are published on days with or without at least one published daily gas price index. Reasonableness Thresholds are not calculated for Default Transition Bids because Default Transition Bids will be based on the Default Start-Up Bids.

Example: Reasonableness Threshold for Minimum Load Bid for a gas-fired generator for days without a published gas price index

The following example will outline the calculations for Proxy Minimum Load Costs, Default Minimum Load Bids and Reasonableness Threshold for Default Minimum Load Bid for a gas-fired generator with GHG obligations and a run-hour opportunity cost adder. For this example, a new gas price index for next-day gas was not available for this gas-fired generator's fuel region so the volatility multiplier will be 125%.

Proxy Minimum Load Cost

The Proxy Minimum Load Cost is calculated as follows:

Proxy Minimum Load Cost = (Unit Conversion Factor x Minimum Load Heat Rate x Minimum Operating Level x Fuel Region Price) + (O&M x Minimum Operating Level) + (GMC adder x Minimum Operating Level) + (Minimum Operating Level x Unit Conversion Factor x Minimum Load Heat Rate x GHG Emission Rate x GHG Allowance Price) + Major Maintenance Adder

Table O.1 Example of Proxy Minimum Load Cost

Minimum Operating Level (MW)	Heat Rate at Pmin (Btu/kWh)	Fuel Region Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	GHG Allowance Cost ¹	MMA	Proxy Minimum Load Cost
40	14,000	\$3.85	2.8	\$0.40	\$333	\$680	\$3,454

Where Fuel Region Price = \$3.85/MMBtu is comprised of:

Commodity gas price index = \$3.00/MMBtu

Total transportation cost = \$0.85/MMBtu

Proxy Minimum Load Cost = (0.001 x 14,000Btu/kWh x 40MW x \$3.85/MMBtu) + (\$2.80/MWh x 40MW) + (\$0.40/MWh x 40MW) + (40 MW * 0.001 x 14,000Btu/kWh x 0.053165 mtCO₂e /MMBtu x \$16.45/mtCO₂e) + \$680

= \$3,454

In this example, the resource has a Proxy Minimum Load cost of \$3,454.

Default Minimum Load Bid

A resource can bid up to the Default Minimum Load Bid which includes a multiplier of 125% called a headroom scalar applied to the Proxy Cost, and an opportunity cost, if applicable. The Default Minimum Load Bid is calculated as follows:

Default Minimum Load Bid = 125% x Proxy Minimum Load Cost + 100% x Run-hour opportunity cost.

Assuming the resource in the example has a \$310 run-hour opportunity cost, the maximum amount this resource can submit for a Minimum Load Bid is \$4,627.50 calculated as:

¹ GHG Allowance Price = \$16.45/mtCO₂e and GHG Emission Rate = 0.053165 mtCO₂e /MMBtu

Table O.2 Example of Default Minimum Load Bid

Proxy Minimum Load Cost	Headroom Scalar	Run-hour Opportunity Cost	Default Minimum Load Bid
\$3,454	125%	\$310	\$4,627.50

Default Minimum Load Bid = 1.25 x Proxy Minimum Load Cost + 1.00 x Run-hour opportunity cost

$$= 1.25 \times \$3,454 + 1.00 \times \$310$$

$$= \$4,627.50$$

Reasonableness Threshold Default Minimum Load Bids

Continuing with the example above, the fuel region price was not updated because it is for a Monday trade date and the last publication for gas prices was on Friday. In this case, the volatility multiplier will be 125%.

The Reasonableness Threshold with a 125% volatility multiplier will be calculated as follows:

Reasonableness Threshold Default Minimum Load Bid = 1.25 x {(Unit Conversion Factor x Minimum Load Heat Rate x Minimum Operating Level x [(1.25 x Commodity gas price index) + Total transportation cost]) + (O&M x Minimum Operating Level) + (GMC adder x Minimum Operating Level) + (Minimum Operating Level x Unit Conversion Factor x Minimum Load Heat Rate x Emission Rate x GHG Allowance Price) + Major Maintenance Adder} + (1.00 x Run-hour opportunity cost).

Table O.3 Example of Reasonableness Threshold Default Minimum Load Bid

Min Op Level (MW)	Heat Rate at Pmin (Btu/ KWh)	Reasonableness Threshold Fuel Region Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	GHG Allowance Cost	MMA	Run-hour Opportunity Cost	Reasonableness Threshold Default Minimum Load Bid
40	14,000	\$4.60	2.8	\$0.40	\$333	\$680	\$310	\$5,152.20

Where the Reasonableness Threshold Fuel region price = (1.25 x Commodity gas price index) + Total transportation cost

$$= (1.25 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}$$

$$= \$3.75/\text{MMBtu} + \$0.85/\text{MMBtu}$$

$$= \$4.60/\text{MMBtu}$$

Reasonableness Threshold Default Minimum Load Bid = $1.25 \times \{(0.001 \times 14,000\text{Btu/kWh} \times 40\text{MW} \times [(1.25 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}]) + (\$2.80/\text{MWh} \times 40\text{MW}) + (\$0.40/\text{MWh} \times 40\text{MW}) + (40\text{MW} \times 0.001 \times 14,000\text{Btu/kWh} \times 0.053165 \text{ mtCO}_2\text{e /MMBtu} \times \$16.45/\text{mtCO}_2\text{e}) + \$680\} + (1.00 \times \$310)$

= \$5,152.20

If a Scheduling Coordinator has evidence that the actual or expected fuel cost for a resource is higher than the CAISO calculated fuel cost (\$3.00/MMBtu in example above), the Scheduling Coordinator can submit an automated Reference Level Change Request with the revised Reference Levels calculated using the updated fuel cost. The CAISO system will automatically validate the requested Reference Level against the Reasonableness Threshold. If the requested Reference Level is below the Reasonableness Threshold, then the submission will be accepted and used in CAISO market systems. If the requested Reference Level is above the Reasonableness Threshold, the submission will be capped at the Reasonableness Threshold value and the capped amount will be used in CAISO market systems. These two scenarios have been illustrated below with numerical example for Default Minimum Load Cost calculations.

Scenario 1: Resource's revised Reference Level below the Reasonableness Threshold

CAISO calculated commodity gas price index = \$3.00/MMBtu

CAISO calculated fuel region price = \$3.85/MMBtu

Resource's actual or expected commodity gas price = \$3.50/MMBtu

Resource's revised fuel region price = \$4.35/MMBtu²

SC-Submitted Default Minimum Load Bid = \$4,977.195

Reasonableness Threshold Default Minimum Load Bid (from Table O.3) = \$5,152.20

Value used in CAISO market systems = \$4,977.195

Scenario 2: Resource's revised Reference Level greater than the Reasonableness Threshold

CAISO calculated commodity gas price index = \$3.00/MMBtu

² This fuel region price is \$3.50/MMBtu for the gas commodity index plus \$0.85/MMBtu in total transportation costs

CAISO calculated fuel region price = \$3.85/MMBtu

Resource's actual or expected commodity gas price = \$5.00/MMBtu

Resource's revised fuel region price = \$5.85/MMBtu³

SC-Submitted Default Minimum Load Bid = \$6,027.195

Reasonableness Threshold Default Minimum Load Bid (from Table O.3) = \$5,152.20

Value used in CAISO market systems = \$5,152.20

The resource may be eligible for after-market cost recovery if actual costs are above \$5,152.20 (see Section O.3)

Example: Reasonableness Threshold for Default Minimum Load Bid for a gas-fired generator for days with a published index

The following example will outline Reasonableness Threshold for Default Minimum Load Bid for a gas-fired generator with GHG obligations and a run-hour opportunity cost adder. For this example, a new gas price index for next-day gas was available for this gas-fired generator's fuel region, so the volatility multiplier will be 110%.

The Reasonableness Threshold with a 110% volatility multiplier will be calculated as follows:

Reasonableness Threshold Default Minimum Load Bid = 1.25 x {(Unit Conversion Factor x Minimum Load Heat Rate x Minimum Operating Level x [(1.10 x Commodity gas price index) + Total transportation cost]} + (O&M x Minimum Operating Level) + (GMC adder x Minimum Operating Level) + (Minimum Operating Level x Unit Conversion Factor x Minimum Load Heat Rate x GHG Emission Rate x GHG Allowance Price) + Major Maintenance Adder} + 1.00 x Run-hour opportunity cost.

Table O.4 Example of Reasonableness Threshold Default Minimum Load Bid

Min Op Level (MW)	Heat Rate at Pmin (Btu/ KWh)	Reasonableness Threshold Fuel Region Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	GHG Allowance Cost	MMA	Run-hour Opportunity Cost	Reasonableness Threshold Default Minimum Load Bid
40	14,000	\$4.15	2.8	\$0.40	\$333	\$680	\$310	\$4,837.20

³ This fuel region price is \$5.00/MMBtu for the gas commodity index plus \$0.85/MMBtu in total transportation costs

Where the Reasonableness Threshold Fuel region price = (1.10 x Commodity gas price index) + Total transportation cost

$$= (1.10 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}$$

$$= \$3.75/\text{MMBtu} + \$0.85/\text{MMBtu}$$

$$= \$4.15/\text{MMBtu}$$

Reasonableness Threshold Default Minimum Load Bid = $1.25 \times \{(0.001 \times 14,000\text{Btu/kWh} \times 40\text{MW} \times [(1.10 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}]) + (\$2.80/\text{MWh} \times 40\text{MW}) + (\$0.40/\text{MWh} \times 40\text{MW}) + (40\text{MW} \times 0.001 \times 14,000\text{Btu/kWh} \times 0.053165 \text{ mtCO}_2\text{e} / \text{MMBtu} \times \$16.45/\text{mtCO}_2\text{e}) + \$680\} + (1.00 \times \$310)$

$$= \$4,837.20$$

In summary,

The Default Minimum Load Bid is \$4,627.50

The Reasonableness Threshold Default Minimum Load Bid is \$4,837.20

The resource can submit an automated Reference Level Change Request for a Default Minimum Load Bid that exceeds \$4,627.50. If the requested amount is greater than the Reasonableness Threshold, the value will be capped at \$4,837.20. Resources that submit an automated Reference Level Change Request may be audited and must retain documented evidence of fuel cost increases. See Section O.2 for automated Reference Level Change Request audits.

Example: Reasonableness Threshold for Minimum Load Bid for a non-gas generator

Non-gas generators register fuel or fuel equivalent costs in the Master File in \$ per MWh. The volatility multiplier for the Reasonableness Threshold for non-gas generators is 110% on all days. For non-gas generators, the Reasonableness Threshold Minimum Load Bid with a 110% volatility multiplier is calculated as follows:

$$\text{Reasonableness Threshold Default Minimum Load Bid} = 1.25 \times \{(\text{Minimum Operating Level} \times \mathbf{1.10} \times \text{Fuel or fuel equivalent costs}) + (\text{O\&M} \times \text{Minimum Operating Level}) + (\text{GMC adder} \times \text{Minimum Operating Level}) + (\text{Minimum Operating Level} \times \text{Unit Conversion Factor} \times \text{Minimum Load Heat Rate} \times \text{GHG Emission Rate} \times \text{GHG Allowance Price}) + \text{Major Maintenance Adder}\} + (1.00 \times \text{Run-hour opportunity cost}).$$

Table O.5 Example of Reasonableness Threshold Default Minimum Load Bid for a non-gas resource

Min Op Level (MW)	Average Cost (\$/MWh)	Reasonableness Threshold Fuel-equivalent Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	MMA	Run-hour Opportunity Cost	Reasonableness Threshold Default Minimum Load Bid
10	\$50	\$55	\$2.50	\$0.40	\$320	\$410	\$1,533.75

Reasonableness Threshold Default Minimum Load Bid for a non-gas resource = $1.25 * \{ [10\text{MW} \times (1.10 * \$50/\text{MWh})] + (\$2.50/\text{MWh} \times 10\text{MW}) + (\$0.40/\text{MWh} \times 10\text{MW}) + \$320 \} + (1.00 \times \$410)$.

= \$1,533.75

The resource can submit an automated Reference Level Change Request for a Default Minimum Load Bid. If the requested amount is greater than the Reasonableness Threshold, the value will be capped at \$1,533.75. Resources that submit an automated Reference Level Change Request may be audited and must retain documented evidence of fuel cost increases. See Section O.2 for automated Reference Level Change Request audits.

Reasonableness Threshold for Start-up Bid for a gas generator

Start-up Bids also include a component for gas prices and Reference Level Change Request are available for Start-up Bids.

Reasonableness Threshold Default Start-Up Bid for a gas-fired generator with 125% volatility multiplier = $1.25 \times \{ ((\text{Start-Up Fuel} \times [(1.25 \times \text{Commodity gas price index}) + \text{Total transportation cost}]) + (\text{Start-Up Energy} \times \text{Electricity Price}) + (\text{Minimum Operating Level} \times \text{Start-Up Time Period in min} / 60 \text{ min/hour} \times \text{GMC adder} / 2) + (\text{Start-Up Fuel} \times \text{GHG Emission Rate} \times \text{GHG Allowance Price}) + \text{Major Maintenance Adder} \} + (1.00 \times \text{Start-Up Opportunity Cost})$

Reasonableness Threshold Default Start-Up Bid for a gas-fired generator with 110% volatility multiplier = $1.25 \times \{ (\text{Start-Up Fuel} \times [(1.10 \times \text{Commodity gas price index}) + \text{Total transportation cost}]) + (\text{Start-Up Energy} \times \text{Electricity Price}) + (\text{Minimum Operating Level} \times \text{Start-Up Time Period in min} / 60 \text{ min/hour} \times \text{GMC adder} / 2) + (\text{Start-Up Fuel} \times \text{GHG Emission Rate} \times \text{GHG Allowance Price}) + \text{Major Maintenance Adder} \} + 1.00 \times \text{Start-Up Opportunity Cost}$

Reference Level Change Requests do not need to be submitted for Default Transition Bids. If a Reference Level Change Request is accepted for the Default Start-up Bid on an MSG resource, the applicable Default Transition Bid will also be adjusted so that the Scheduling Coordinator can submit the higher Default Transition Bid into SIBR.

O.1.2.3 Reasonableness Thresholds for Default Energy Bids

Resources can bid incremental energy up to the energy bid cap (*i.e.*, maximum price for Energy Bid). However, when non-competitive conditions are detected through the Local Market Power Mitigation process in the day-ahead or real-time market, generators are mitigated to the resource's DEB. Reference Level Change Requests for DEBs are permitted through SIBR for resources with evidence that their fuel or fuel-equivalent costs have changed. The Reasonableness Threshold for DEBs is based on the variable-cost DEB formula described in Attachment D.5 of the BPM for Market Instruments for all resources regardless of their first preference rank for DEBs in the Master File.

Variable Cost Option Based Default Energy Bid for a gas-fired generator

In the following example, a Variable Cost Based DEB is calculated first for a gas-fired generator that has selected Variable cost as their first preference for the DEB calculation. The resource also has a GHG obligation and an energy opportunity cost adder.

Table O.6 Example of DEB for a gas resource

Segment	Incremental Heat Rate at (Btu/ KWh)	Fuel Region Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	GHG Allowance Cost (\$/MWh)	Variable-energy Opportunity Cost (\$/MWh)	Variable-Cost DEB (\$/MWh)
40 MW - 50 MW	9,000	\$3.85	2.8	\$0.40	\$7.87	\$21	\$71.30

Variable Cost Option DEB for gas-fired generator = $\{1.10 \times ([\text{Unit Conversion Factor} \times \text{Incremental Heat Rate} \times \text{Fuel Region Price}] + \text{O\&M} + \text{GMC} + [\text{Unit Conversion Factor} \times \text{Incremental Heat Rate} \times \text{GHG Emission Rate} \times \text{GHG Allowance Price}])\} + \text{FMU adder} + \text{Variable Energy Opportunity Cost}$

= \$71.30 from 40 MW to 50 MW

The CAISO will calculate a Variable Cost Option DEB for this resource for the segment 40 MW to 50 MW at a price of \$71.30 per MWh.

Reasonableness Threshold DEB for a gas-fired generator

Continuing with the example above, the fuel region price was not updated because it is for a Monday trade date and the last publication for gas prices was on Friday. In this case, the Reasonableness Threshold DEB will use a volatility multiplier of 125%.

The Reasonableness Threshold DEB will be calculated as follows:

Reasonableness Threshold DEB for a gas-fired generator with 125% volatility multiplier = $\{1.10 \times ([\text{Unit Conversion Factor} \times \text{Incremental Heat Rate} \times ((1.25 \times \text{Commodity gas price index}) + \text{Total transportation cost})] + \text{O\&M} + \text{GMC} + [\text{Incremental Heat Rate} \times \text{GHG Emission Rate} \times \text{GHG Allowance Price}])\} + \text{FMU adder} + \text{Variable Energy Opportunity Cost}$

Table O.7 Example of Reasonableness Threshold DEB for a gas resource

Segment	Incremental Heat Rate at (Btu/ kWh)	Reasonableness Threshold Fuel Region Price	O&M Cost (\$/MWh)	GMC Adder (\$/MWh)	GHG Allowance Cost (\$/MWh)	Variable-energy Opportunity Cost (\$/MWh)	Reasonableness Threshold DEB (\$/MWh)
40 MW - 50 MW	8,000	\$4.60	2.8	\$0.40	\$7.87	\$21	\$78.72

Where the Reasonableness Threshold Fuel region price = $(1.25 \times \text{Commodity gas price index}) + \text{Total transportation cost}$

$$= (1.25 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}$$

$$= \$3.75/\text{MMBtu} + \$0.85/\text{MMBtu}$$

$$= \$4.60/\text{MMBtu}$$

$$= \{1.10 \times ([0.001 \times 9,000\text{Btu}/\text{kWh} \times ((1.25 \times \$3.00/\text{MMBtu}) + \$0.85/\text{MMBtu}))\} + \$2.80 + \$0.40 + [0.001 \times 9,000\text{Btu}/\text{kWh} \times 0.053165 \times \$16.45] + \$0 + \$21.00$$

$$= \$78.72$$

In summary,

The DEB is \$71.30 per MWh from 40 MW to 50 MW

The Reasonableness Threshold DEB is \$78.72 per MWh from 40 MW to 50 MW

The resource can submit an automated Reference Level Change Request for a DEB that exceeds \$71.30 per MWh. If the requested amount is greater than the Reasonableness Threshold, the value will be capped at \$78.72 per MWh. Reference Level Change Requests for DEBs must contain all bid segment values for the resource from Pmin to Pmax. Resources that submit an automated Reference Level Change Request may be audited and must retain documented evidence of fuel cost increases. See Section O.2 for automated Reference Level Change Request audits.

Reasonableness Threshold DEB for a non-gas generator

Non-gas generators register fuel or fuel equivalent costs in the Master File in \$ per MWh. The volatility multiplier for the reasonableness threshold for non-gas generators is 110% on all days.

Reasonableness Threshold DEB for a non-gas generator = {1.10 x (Incremental fuel or fuel equivalent cost x **1.10**) + O&M + GMC + (Incremental Heat Rate* GHG Emission Rate x GHG Allowance Price) } + FMU adder + Variable Energy Opportunity Cost

O.1.2.4 Updates to Reasonableness Thresholds

O.1.2.4.1 Same-day Gas Price Updates

At times, the published natural gas price indices the CAISO uses in the real-time market may not capture a generator's actual costs because the indices are based on next-day gas trading which occurs on the day before the real-time market runs. However, a supplier's actual marginal costs may be based on same-day gas, which they purchased on the day of the real-time market run, and could be priced higher than the previous day's gas. For example, for the real-time market on a Thursday, the CAISO market uses a gas price based on Wednesday's next-day gas trading, *i.e.*, gas purchased on Wednesday for delivery on Thursday. However, suppliers may purchase same-day gas on Thursday for Thursday's real-time market.

When the CAISO detects that same-day gas prices trading on ICE between 8:00 am and 9:00 am Pacific Time are 10% greater than the gas price index the CAISO used at 22:00 the evening before to calculate the Reasonableness Threshold for the real-time market, the CAISO will recalculate Reasonableness Thresholds using the same-day gas price index. The revised Reasonableness Thresholds will stay in effect through the remainder of the real-time market trade date.

For example, on Wednesday evening the CAISO receives published next-day gas prices for Gas Index A of \$3.50 for Thursday delivery. On Thursday morning between 8:00 am and 9:00 am, ICE same-day prices for Gas Index A for Thursday delivery are now trading at \$3.90. The CAISO will update the Reasonableness Thresholds for commitment costs and DEBs for all resources mapped to a fuel region associated to Gas Index A to \$3.90 per MMBtu. Resources that submit Reference Level Change Requests related to the fuel increase of \$3.90 per MMBtu must have documented evidence of this fuel cost increase.

Hydro DEBs that are registered to fuel regions impacted by same-day updates will be automatically recalculated for the remaining hours of the trade date and do not need to submit a Reference Level Change Request to update the DEB. For more information on Hydro DEBs, see Appendix D.8 of the BPM for Market Instruments.

O.1.2.4.2 Multiple manual Reference Level Change Requests Updates

Section O.1.3 describes manual Reference Level Change Requests. If the CAISO has verified three or more manual Reference Level Change Requests for the same fuel region, the CAISO will use the volume-weighted average of the verified manual Reference Level Change Requests to update the Reasonableness Thresholds for all resources mapped to the fuel region.

Continuing with the example in Sections O.1.2.4.1 where Gas Index A is \$3.50 per MMBtu for next-day gas, if on Thursday morning the CAISO receives three manual Reference Level Change Requests for resources mapped to a fuel region associated to Gas Index A and the CAISO verifies the following manual Reference Level Change Requests:

Resource 1: Gas Index A cost = \$4.15 per MMBtu for 1,000 MMBtu

Resource 2: Gas Index A cost = \$3.75 per MMBtu for 2,500 MMBtu

Resource 3: Gas Index A cost = \$4.05 per MMBtu for 3,000 MMBtu

Then the volume-weighted average of all relevant verified manual Reference Level Change Requests for Gas Index A =

$$\frac{[(\$4.15 \times 1000 \text{ MMBtu}) + (\$3.75 \times 2500 \text{ MMBtu}) + (\$4.05 \times 3000 \text{ MMBtu})]}{(1000 \text{ MMBtu} + 2500 \text{ MMBtu} + 3000 \text{ MMBtu})}$$

= \$3.95 per MMBtu

The CAISO will update all fuel regions related to Gas Index A to have a gas index of \$3.95 per MMBtu plus relevant transportation costs and will use the updated fuel regions in the calculation of Reasonableness Thresholds for resources mapped to the fuel region.

O.1.2.4.3 Same-day Gas Price and Multiple manual Reference Level Change Requests Updates

In instances where there is same-day trading on ICE and/or there are there are 3 or more verified manual Reference Level Change Requests, the CAISO will use the higher price to update the Reasonableness Thresholds.

Reasonableness Threshold gas price index = maximum (ICE same-day volume-weighted average gas price index, Volume-weighted average of all relevant verified manual Reference Level Change Requests)

Continuing with the example in Sections O.1.2.4.1 and O.1.1.4.2, with a same-day ICE price of \$3.90 per MMBtu for Gas Index A and a volume-weighted manual Reference Level Change Request price of \$3.95 per MMBtu calculated by the CAISO, the CAISO will update the Reasonableness Thresholds for fuel regions related to Gas Index A to \$3.95 on Thursday for the

remaining hours of the real-time market on Thursday. Resources that submit Reference Level Change Requests related to the fuel increase of \$3.95 per MMBtu must have documented evidence of this actual or expected fuel cost increase.

The update to real-time Reasonableness Thresholds will be implemented in the next practically available real-time market interval. For example purposes only, if the CAISO determines at 8:35 am that the same-day price for a particular hub on ICE is 10% higher than the price used starting in HE 1 of the real-time market on that trade date, the CAISO systems will use the updated gas price in its systems to update Reasonableness Thresholds in SIBR. If the data transfer occurs in the CAISO systems before 9:45 am then it will be in place for the HE 12 market close that occurs at 9:45 am. Resources that are purchasing fuel at the same-day gas prices and have evidence of such can submit Reference Level Change Requests to reflect these costs in their commitment costs and DEBs starting in HE 12. In this case, the resource will have one set of commitment costs and DEBs from HE 1 to HE 11 that are based on the next-day gas price update that occurred on the prior day and another set of commitment costs and DEBs from HE 12 through HE 24 that are based on the same-time gas price update. Resources that submit an automated Reference Level Change Request are subject to audit and must retain evidence of actual or expected fuel cost increases, which may consist of documentation described in Section O.1. See Section O.2 for automated Reference Level Change Request audits.

O.1.2.5 Adjustments for Persistent Conditions

If the CAISO detects in the after-market cost recovery process that a resource's actual fuel or fuel-equivalent costs are systematically greater than the gas price indices used by the CAISO in calculating the resource's corresponding Reference Levels, the CAISO may adjust the particular resource's Reasonableness Thresholds by applying an additional resource-specific multiplier on the commodity gas price used in the resource's Reasonableness Threshold.

$$\text{Reasonableness Threshold fuel region price with volatility multiplier and additional resource-specific multiplier} = (\text{volatility multiplier} \times \text{resource-specific multiplier} \times \text{Commodity gas price index}) + \text{Total transportation cost}$$

The CAISO will set the additional resource-specific multiplier a specific period of time that reflects the conditions the CAISO observes in the after-market cost recovery process that warrant such adjustments and will reassess the need for the multiplier at the end of the specified period. Resources that submit Reference Level Change Requests that will be subject to Reasonableness Thresholds that include the volatility multiplier and additional resource-specific multiplier are still subject to the same requirements specified above, including the requirement that they have contemporaneously available evidence that the resource actually encountered these actual or expected fuel cost increases.

O.1.3 Manual Reference Level Change Requests

A manual Reference Level Change Request process is available when a resource's fuel or fuel-equivalent cost expectation are greater than the fuel cost used by the CAISO to calculate the resource's Reference Levels. Preferably, the manual process should be used when the resource's Reference Level costs are not accepted through the automated Reference Level change process.

For natural-gas fired resources, requests may be submitted for the recalculation of the variable cost-based DEB, Default Start-up Bid, and Default Minimum Load Bid, if the gas commodity price exceeds the CAISO calculated gas price by the greater of 10% or \$0.50/MMBtu. For non-gas-fired resources, requests may be submitted for recalculation of the variable cost-based DEB the fuel-equivalent costs are at least 10% higher than the fuel-equivalent cost previously used by the CAISO to calculate Reference Levels. Reference Level Change Requests to Default Start-up Bid and Default Minimum Load Bid for non-gas-fired resources can only be made through the automated Reference Level Change Request process outlined in Section O.1.1.

Manual Reference Level Change Requests must be submitted via CIDI by 8:00 AM Pacific Time on the business day the applicable CAISO market is executed. Requests submitted after 8:00 AM for the current trade date will not be processed. The Scheduling Coordinator submitting the CIDI ticket must enable the checkbox titled "Manual Reference Level Request" to ensure the timely processing of the request. The CIDI ticket must include the following information:

1. Trade Date
2. Market (RTM/IFM)
3. Resource ID
4. Requested fuel or fuel-equivalent cost (gas prices in \$/MMBtu and prices for non-gas resource fuel or fuel-equivalent costs in \$/MWh)
5. Natural gas pricing location (*i.e.*, gas trading hub) to which the resource assigned in Master File (*e.g.*, Socal-Citygate), if applicable
6. Contemporaneously available documents supporting the increase to the fuel or fuel equivalent costs based on next-day fuel procurement for the Day-Ahead market and same-day fuel procurement for the real-time market supporting documentation may include:
 - Quotes from natural gas suppliers:
 - Quotes should include the MMBtu amount and price.

- A screen shot of messages regarding a gas purchase is acceptable documentation if it includes the MMBtu amount and price
 - Quotes for gas must be for the same-day or next-day strip with gas to be delivered no sooner than the most recent standard gas trading day.
 - Gas purchase invoices
 - Gas purchase invoice must be for the same-day or next-day strip with gas to be delivered on the trading day of the manual Reference Level Change Requests
 - Gas purchase invoice cannot be for gas procurements that was arranged in prior months for future delivery.
 - Evidence of a bid price that was part of an unsuccessful good faith effort to purchase fuel
 - Evidence can include some type of communication (email, text message, screen shot) that include an MMBtu quantity and price that was listed for a time but no counterparty accepted the offer.
7. Other appropriate documentation demonstrating fuel or fuel-equivalent costs. This documentation should include quantity and price.
8. Calculations for cost components incorporating the adjusted fuel or fuel-equivalent costs

Upon receipt of a manual Reference Level Change Request, the CAISO will validate the submitted documents along with other current cost information available including trading on ICE, gas system conditions, and other requests received to determine if an increase in fuel or fuel-equivalent cost is justified. The submissions will be reviewed in the order they were received, and the requests verified prior to the day-ahead market will be used in the CAISO day-ahead market processes. For the real-time market, the verified costs will be applied from the real-time market trading hour for which it is practicable for the CAISO to apply the changes through the last hour of the same trading day. If the CAISO cannot validate the information because of insufficient time to validate the submissions or if the information submitted does not support the request, the CAISO will reject the manual Reference Level Change Request and will make no changes to the resource's Reference Levels. However, suppliers may request after-market cost recovery for any amounts of their fuel costs not recovered through the automated or manual Reference Level Change Requests made prior to the execution of the applicable market run.

A resource may be exposed to multiple prices for the quantity of fuel the resource expects to utilize for a trade date. For example, if a resource expects it will need 2,000 MMBtu to operate

and procures three quotes: \$5.00 per MMBtu for 750 MMBtu, \$4.50 for 750 MMBtu and \$5.25 for 500 MMBtu, then the resource may use the highest price required to meet the fuel needs of \$5.25 per MMBtu as this is consistent with a marginal pricing methodology.

O.1.4 RMR Resource Reference Level Change Requests

RMR resources can only bid and recover actual costs. RMR resources that submit automated or manual Reference Level Change Requests must submit commitment costs and DEBs that do not include the multipliers for commitment costs per Tariff Section 30.4.4.1 or the multipliers for DEBs per Tariff Section 39.7.1.1.

O.2 Audit of Reference Level Change Requests

The CAISO will audit automated Reference Level Change Requests. The use of the automated Reference Level Change Request is not intended to be a safe harbor for requests within the Reasonableness Thresholds. Upon initiation of an audit, the CAISO will request the Scheduling Coordinator provide Documentation of Contemporaneously Available Information (hereby referred to as documentation) to support the fuel or fuel-equivalent costs that were the basis of the automated Reference Level Change Request. If the submitted documentation does not support the fuel cost portion of the Scheduling Coordinator's Reference Level Change Request, the Scheduling Coordinator will be placed on an ineligibility list that limits their ability to make automated Reference Level Change Requests for a defined amount of time specified in Section O.2.1.

The CAISO will send the audit request for documentation through the CIDI system and will include the Resource ID, trade date, market type (DAM/RTM), and the due date for submitting the documentation. The CIDI ticket will be assigned to the Scheduling Coordinator with the "Awaiting Client Response" status. In response to a CAISO audit request, the Scheduling Coordinator must submit its cost calculations and documentation within 5 business days of the CAISO request and attach all documentation to the CIDI ticket. Failure to respond to the CIDI ticket within 5 business days of the CAISO audit request will result in the Scheduling Coordinator failing the audit. Repercussions of failing an audit are discussed in further detail below in Section O.2.1

The documentation provided to the CAISO should show the basis of the Scheduling Coordinator's actual or reasonable expectation of fuel or fuel-equivalent costs that would result in costs higher than the Reference Level and should reflect prudent procurement practices. These documents should have existed when the Reference Level Change Request was submitted and show that the price of fuel is based on next-day procurement for the day-ahead market, and for the Real-Time Market is based on same-day or next-day procurement. For non-standard gas trading days, the documents must show the price of fuel is for procurement no sooner than the most recent standard gas trading day.

Documentation to support the audit request may include, but are not limited to:

1. Quotes from natural gas suppliers
 - Quotes should include the MMBtu amount and price.
 - A screen shot of messages regarding a gas purchase is acceptable documentation if it includes the MMBtu amount and price
 - Quotes for gas must be for the same-day or next-day strip with gas to be delivered no sooner than the most recent standard gas trading day.
2. Gas purchase invoices
 - Gas purchase invoice must be for the same-day or next-day strip with gas to be delivered on the trading day of the manual Reference Level Change Requests
 - Gas purchase invoice cannot be for gas procurements that was arranged in prior months for future delivery.
3. Evidence of a bid price that was part of an unsuccessful good faith effort to purchase fuel
 - Evidence can include some type of communication (email, text message, screen shot) that include an MMBtu quantity and price that was listed for a time but no counterparty accepted the offer.
4. Other appropriate documentation demonstrating fuel or fuel-equivalent costs. This documentation should include quantity and price.
5. A cost calculation of how the Scheduling Coordinator arrived at the final cost component (e.g. DEB, Default Minimum Load Bid, Default Startup Bid) value. If the cost component requested is a DEB, the Scheduling Coordinator should provide a calculation for each bid segment.

For automated Reference Level Change Requests made submitted after the last standard gas nomination cycle and that include Operational Flow Order charges, evidence of fuel transport flow orders (e.g. OFO or Emergency Flow Order) and associated imbalance charges. Once received, the CAISO will evaluate the submitted information within 10 business days of receipt and determine whether it supports the Scheduling Coordinator's automated Reference Level Change Request. The CAISO's responses, communicated via CIDI, will state one of the following:

- 1) The submitted documentation is sufficient, and supports their fuel cost increase,

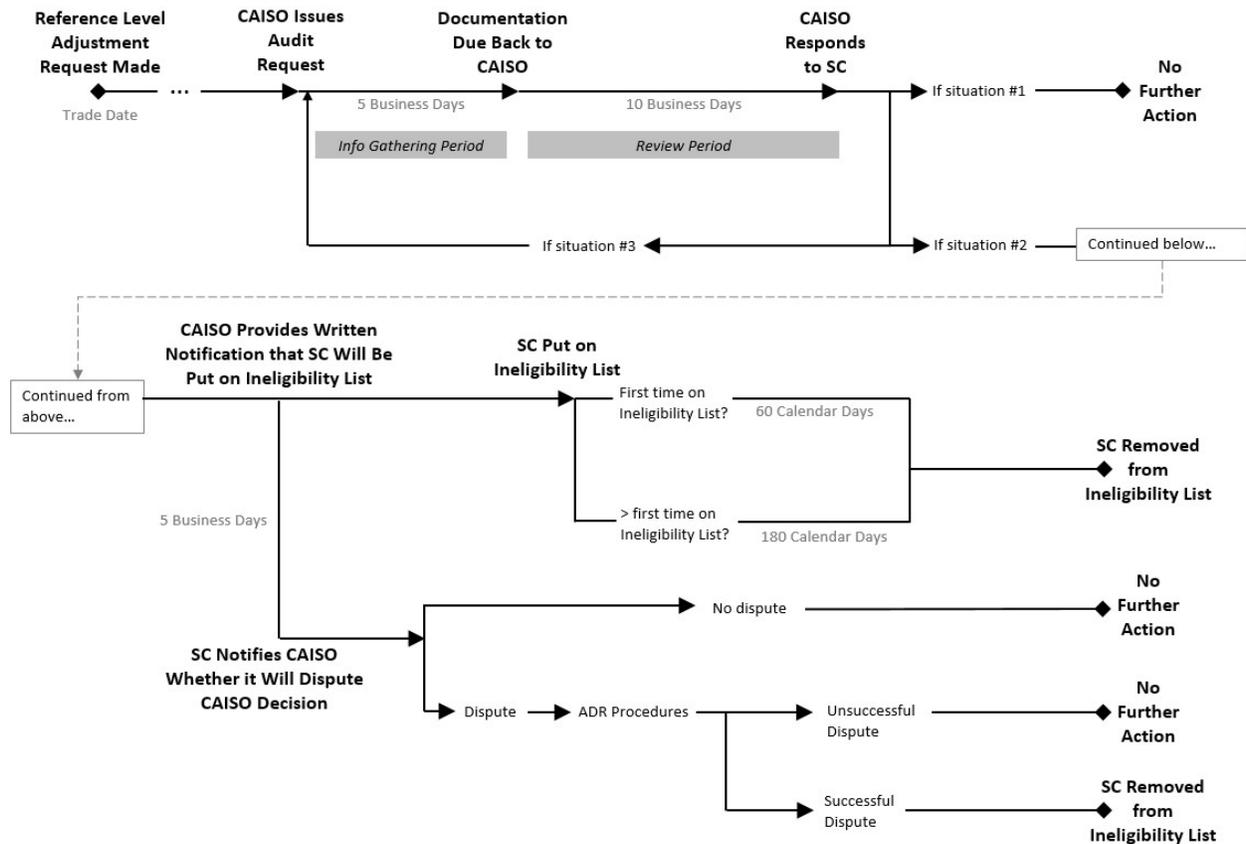
- 2) Submitted documentation does not support their fuel cost increase, or
- 3) More information is needed from the Scheduling Coordinator.

In the event of #1, the CAISO will close the CIDI ticket and notify the Scheduling Coordinator that they have passed the audit.

In the event of #2, the CAISO will inform the Scheduling Coordinator that they have failed the audit and will be put on the ineligibility list for a defined amount of time. This is discussed further in Section O.2.1.

In the event of #3, communications may take place to clarify the discrepancy. During the discussions about the need for further information, the review period for the audit will stop while more information is obtained. Once the additional documentation is received by the CAISO, a new 10 business day review period will start.

The following chart outlines the timeline for Reference Level Change Request Audits



O.2.1 Audit Failure and Ineligibility List

If the CAISO determines that the information submitted by the Scheduling Coordinator does not support the Reference Level Change Request, the procedure described below will follow:

1. The CAISO will provide written notification to the SC that they have failed the audit
2. The CAISO will place the SC on an ineligibility list in the Master File for a defined period of time. The SC will be unable to make automated Reference Level Change Request for the trade dates in the ineligibility time period. The start effective date of the ineligibility period will be communicated to the SC when the CAISO has provided written notification.

If this the first instance of audit failure for the Scheduling Coordinator, they will be placed on the ineligibility list as follows: (1) for sixty (60) days from the time the CAISO informs the Scheduling Coordinator that it did not submit Documentation of Contemporaneously Available Information that supports the Scheduling Coordinator's automated Reference Level Change Request; (2) for one hundred and eighty (180) days from the CAISO informs the Scheduling coordinator of any subsequent determination that the Scheduling Coordinator did not submit Documentation of Contemporaneously Available Information that supports its automated Reference Level Change Request.

3. If the Scheduling Coordinator does not agree with the audit findings, the Scheduling Coordinator may request CAISO ADR Procedures as specified in Section 13 of the CAISO Tariff within 5 business days of the CAISO's response. If the Scheduling Coordinator requests CAISO Automatic Dispute Resolution (ADR) Procedures, the Scheduling Coordinator will stay on the ineligibility list until the resolution of the CAISO ADR. If the CAISO ADR Procedures confirm that the submitted documentation did support the Scheduling Coordinator's Reference Level Change Request, the CAISO will communicate the date that Scheduling Coordinator will be removed from the ineligibility list once the CAISO ADR Procedures decision is finalized.

If a Scheduling Coordinator is subject to multiple audits at the same time and fails more than one audit, the amount of time on the ineligibility list will not be compounded.

For example, SC ABC makes automated Reference Level Change Requests for the real time market for all trade dates in the week of Sep 2-8, 2019 – i.e., 7 requests for the real time market.

Upon review of the Reference Level Change Requests on Sep 9, 2019, the CAISO requests the SC to submit evidence supporting the fuel cost increase.

The SC provides supporting documentation to the CAISO on Sep 11, 2019.

The CAISO reviews the supporting documentation and finds that the documentation only supports fuel cost increases for Sep 2 and Sep 3, 2019. For subsequent days of the review period (Sep 4-8, 2019) the SC does not have evidence to support the Reference Level Change Request. In effect, the CAISO has found that for the period under review, the SC has failed the audit for five trade dates.

On Sep 16, 2019 the CAISO provides written notification to the SC stating that the SC has failed the audit and will be placed on the ineligibility list starting Sep 18, 2019. This is first instance of CAISO determining that the SC has failed the audit, so the SC will be placed on the ineligibility list for 60 days from the start effective date, i.e., until November 15, 2019. Even though the SC failed the audit for five trade dates, the amount of time on the ineligibility list will not be compounded since all the dates fell within the same review period of the CAISO audit.

The CAISO maintains the right to determine that the failure to follow the guidelines represents a pattern of strategic bidding behavior or false or misleading information. If such a determination is made, the CAISO may refer such behavior to the FERC.

O.3 After-Market Cost Recovery Process

Resources that submitted a Reference Level Change Request, and was capped at the Reasonableness Threshold value either because they made an automated Reference Level Change Request above the Reasonableness Threshold, or because the CAISO was unable to verify their manual Reference level Change Request due to insufficient time or insufficient supporting documentation, are eligible to apply for the CAISO's after-market cost recovery. The submission for after-market cost recovery must be within 30 business days after the operating day on which the resource incurred the unrecovered costs.

The following conditions must be met to be eligible for after-market cost recovery:

1. The Scheduling Coordinator must have made a manual or automated Reference Level Change Request and the commitment cost and/or DEB was capped at the Reasonableness Threshold.
2. The unrecovered costs must be based on *actual* fuel costs, and *not* expected costs. When the Scheduling Coordinator is submitting their calculation of Minimum Load Costs, Start-Up Costs, Transition Costs and Default Energy Bids using the actual fuel or fuel-equivalent cost that is supported by documentation, the Scheduling Coordinator should not include the headroom scalar or the volatility scalar in the cost calculation⁴. Also, the fuel cost used

⁴ For commitment costs, the cost calculations should follow the Proxy Cost formula plus any CAISO-calculated opportunity costs with no volatility scalar on the fuel component. For Default Energy Bids, the cost calculation should not include the 10% headroom scalar or the volatility scalar on the fuel component.

for after-market cost recovery must not include gas imbalance penalties related to Operational or Emergency Flow Orders.

3. The Scheduling Coordinator must provide the CAISO with documentation supporting these actual fuel or fuel-equivalent costs
4. The submission for after-market cost recovery is within 30 business days after the operating day on which the resource incurred the unrecovered costs

O.3.1 After-Market Cost Recovery Request

Scheduling Coordinators can submit a request for after-market cost recovery through a CIDI ticket submittal with the subject "After-Market Cost Recovery". The following items are required in the CIDI ticket submittal:

- Resource ID
- Trade Date
- Market Type
- Resource fuel or fuel-equivalent cost with evidence of purchase for the applicable trade date. If there were multiple procurements for a quantity of fuel, the Scheduling Coordinator may use the price that was the highest price actually paid for fuel as this represents the marginal cost of fuel.
- Requested cost components: DEB, Minimum Load, Start-up and/or Transition costs
- Data and calculations supporting the Scheduling Coordinator's claim to the unrecovered costs it seeks, including invoices for the unrecovered costs
- An explanation of why after-market cost recovery of the costs is justified

The CAISO will review the following to determine if the resource is eligible for after-market cost recovery:

- Ensure that each of the eligibility conditions in Section O.3 are met.
- The submitted documentation to show procured daily fuel or fuel-equivalent costs for a given trade date exceeds the fuel costs or fuel-equivalent costs the CAISO used to calculate the resource's Reference Levels. These costs must be reasonable and reflect prudent procurement practices.
- The cost calculations submitted are mathematically accurate.

- For gas resources, the CAISO will review the submission to determine if the request required immediate fuel procurement due to constrained conditions. The CAISO will verify whether gas rules would have allowed additional time for procurement. If immediate procurement was required then the CAISO would verify the costs. The CAISO will not support cost recovery for non-compliance charges incurred in response to a market dispatch because it has no method of identifying authorized or unauthorized gas.

Within 60 business days after the trade date for the after-market cost recovery request, the CAISO will respond to the CIDI ticket:

- a) The Scheduling Coordinator is eligible for after-market cost recovery or
- b) The Scheduling Coordinator is ineligible for after-market cost recovery. The CAISO will provide a written explanation as to the conditions that were not met to receive after-market cost recovery.

For costs that are eligible for after-market cost recovery, the CAISO will modify the commitment costs, energy and/or DEB cost components using the revised fuel or fuel-equivalent costs in its post-processing systems to the verified amount. The revised cost amounts will be incorporated into settlement calculations on the next possible settlement statement within the normal Recalculation Settlement Statements timelines. To ensure the timely processing of the request, the CAISO recommends the requests be submitted as soon as possible after the trade date with complete information.

If the CAISO is unable to verify within the 60 business day period that the costs are eligible for cost recovery, the CAISO will provide the SC with an extension of 30 business days to submit a filing to FERC to recover costs. Additionally if the CAISO determines the resource is ineligible to recover its fuel related costs, the Scheduling Coordinator may file for fuel cost recovery through a FERC Fuel Cost Recovery Filing.