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June 17, 2004

The Honorable Magalie R. Salas
Federal Energy Regulatory Commission
Office of the Secretary
888 First Street, N.E.
Washington, D.C. 20426

Re: California Independent System Operator Corporation, Docket Nos. ER03-1046-001, ER03-1046-002, ER03-1046-003, ER04-609-000, and ER04-609-001 (Not Consolidated)

Dear Secretary Salas:

The California Independent System Operator Corporation ("ISO")[1] hereby responds to the letter order sent to the ISO in the above-captioned proceedings on June 10, 2004 by Jamie L. Simler, Director, Division of Tariffs and Market Development - West ("Letter Order"). The Letter Order requested that the ISO provide the additional information described below within seven days of the order's issuance, i.e., by June 17, 2004, and stated that "the information requested in this letter will constitute an amendment to your filings."[2] Two additional copies of this filing are enclosed to be date-stamped and returned to our messenger.

The ISO's Use of Ex Post Pricing

The Commission requested that the ISO further explain how the ISO's current use of ex post pricing will be affected by the following change, which was described in the transmittal letter accompanying the ISO's November 21, 2003 filing in the proceedings concerning Amendment No. 54 to the ISO Tariff

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1 Terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the ISO Tariff.

2 Letter Order at 1, 3.

("Amendment No. 54") to comply with the Commission's October 22, 2003 order on Amendment No. 54 ("Amendment No. 54 Order"):[3]

> The Commission's rejection of the proposed performance band means the ISO's real-time Imbalance Energy market will be using *ex ante* pricing, i.e., setting the market clearing price based on the bid price of the last unit dispatched in that interval. The ISO submits changes to Section 2.5.23.2.1.2 of the Tariff to comply with this directive.[4]

Prior to the changes proposed in Amendment No. 54, Section 2.5.22.11 of the ISO Tariff stated in relevant part:

> If a Generating Unit, Curtailable Demand or System Resource is unavailable or incapable of responding to a Dispatch instruction, or fails to respond to a Dispatch instruction in accordance with its terms, the Generating Unit, Curtailable Demand or System Resource:
>
> . . . .
>
> (b) cannot set the BEEP Interval Ex Post Price;

As the ISO described in the transmittal letter for Amendment No. 54:

> Presently, ISO Tariff Section 2.5.22.11 and Dispatch Protocol Section 9.5 provide that the BEEP Interval Ex Post price or Dispatch price, (i.e., the MCP [Market Clearing Price]) shall be set by the marginal resource that performs in response to an ISO Dispatch Instruction. On the other hand, ISO Tariff Sections 2.5.23.1 and 2.5.23.2.1 provide that the marginal Generating Unit accepted by the ISO for Dispatch shall set the MCP. The Commission has observed that the ISO sets the MCP in accordance with ISO Tariff Section 2.5.23.[5]

Consequently, the BEEP interval price is set by the last resource dispatched in merit order during an interval, regardless of whether that resource responded to

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3 *California Independent System Operator Corporation*, 105 FERC ¶ 61,091 (2003).

4 Letter Order at 1-2 (quoting Transmittal Letter for Compliance Filing, Docket No. ER03-1046-002 (Nov. 21, 2003), at 5).

5 Transmittal Letter for Amendment No. 54, Docket No. ER03-1046-000 (July 8, 2003), at 24 (citing *Pacific Gas and Electric Company, et al.*, 81 FERC ¶ 61,122, at 61,491 (1997)).

the instruction or not. The BEEP Interval Ex Post Price is an *ex post* price in that it is not determined until after the interval and after the ISO knows for certain which resource was the last resource dispatched in merit order in that interval.

In the new Phase 1B real-time dispatch system proposed in Amendment No. 54, the ISO proposed to implement the requirement that a resource provide at least 90% but no more than 110% of the energy it was instructed to produce in an interval to be eligible to set the Dispatch Interval Ex Post Price (the Phase 1B successor to the BEEP Interval Ex Post Price). The Commission rejected this performance requirement, stating that:

> The Commission agrees with Duke that an additional performance requirement is redundant to UDP [Uninstructed Deviation Penalties] and the CAISO has other mechanisms at its disposal to confront potential misconduct from Market Participants. Therefore, the Commission finds the CAISO's proposal to establish a new 10% performance requirement in order for a generator to be eligible to set the market clearing price unnecessary.[6]

The ISO submitted the following modifications to Section 2.5.23.2.1.2 to comply with the Commission's directives in the Amendment No. 54 Order:

> **2.5.23.2.1.2 Eligibility.** A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for the maximum Energy deliverable based on its maximum applicable ramp rate cannot be marginal (*i.e.*, it cannot move in a particular direction) and thus is not eligible to set the Dispatch Interval Ex Post Price. System Resources are not eligible to set the Dispatch Interval Ex Post Price. A resource dispatched at its lower operating limit, if otherwise eligible, will be eligible to set the Dispatch Interval Ex Post Price if any portion of its Energy is necessary to serve Demand. ~~A Dispatched resource must perform within ten percent (10%) (*i.e.*, between 90% and 110%) of the relevant Dispatch Operating Point to be eligible to set the Dispatch Interval Ex Post Price except 1) in those Dispatch Intervals in which the ISO issues emergency Dispatch Instructions, or 2) where the unpreventable loss of telemetry prevents the ISO from assessing the resource's performance.~~

While the ISO accurately described that it would be now be setting the price based on the price of the bid of the last resource dispatched in an interval (regardless of whether that resource performed to its instruction or not), the ISO

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6 Amendment No. 54 Order at P 79.

referred to that type of pricing as "*ex ante*" pricing on page 5 of the transmittal letter for the November 21, 2003 compliance filing. Part of the confusion may stem from different understandings of what the terms *ex ante* pricing and *ex post* pricing mean. In the July 31, 2002 Notice of Proposed Rulemaking issued in Docket No. RM01-12-000, the Commission's proposal for a Standard Market Design ("SMD"), the Commission first referred to an *ex ante* price as a price announced in advance based on a real-time estimate of the amount of energy the Independent Transmission Provider expects to dispatch in the upcoming interval.[7] In the same paragraph, the Commission described an *ex post* price as a price based on the actual marginal unit clearing the market in real time.[8] The phrase "clearing the market" suggests that the *ex post* price is set by a resource that actually responds to a dispatch instruction and the energy it produces clears the market (i.e., meets the real time imbalance requirement). In the next paragraph, the Commission stated its support for the use of *ex post* pricing as a means to encourage suppliers to fully respond to their bids.[9] The Commission noted that *ex ante* pricing would pay the resource a higher price even if it did not respond as promised in its bid.[10]

Because the ISO issues dispatch instructions throughout the ten minute BEEP Interval today, how the ISO sets the MCP today lies somewhere between these definitions. The MCP is currently determined by the last unit dispatched in the interval, regardless of whether that unit responds to its dispatch instruction. The MCP is not published until several minutes after the interval, nor does it depend on whether a resource responds to the instruction, so the current MCP is neither an *ex post* nor an *ex ante* price. In Phase 1B, the ISO proposed to move to a paradigm in which the ISO would issue one set of dispatch instructions every five-minute interval. The ISO does not propose to publish the MCP based on those initial dispatch instructions. Moreover, because the ISO may issue intra-interval instructions (which would change the interval MCP), the Phase 1B MCP is not truly an *ex ante* price. When the Commission rejected the ISO's proposal to impose a performance requirement under Phase 1B, the ISO was uncomfortable referring to the MCP as an *ex post* price because, though the price was set during the interval (and not known until after the interval) based on the last resource dispatched in that interval, the MCP could be set by a resource that did not respond to its dispatch instruction. However, even though the Commission rejected the performance requirement, the ISO did not propose to remove the words "ex post" from the defined price terms in its compliance filing.

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7 Notice of Proposed Rulemaking, 67 Fed. Reg. 55452, FERC Stats. & Regs. ¶ 32,563 (July 31, 2002), at P 313.

8 *Id.*

9 *Id.* at P 314.

10 *Id.*

In summary, the ISO's current MCP and the Phase 1B MCP do not quite meet either the definition of *ex ante* prices or the definition of *ex post* prices as set forth in the SMD NOPR. The MCPs are first calculated based on the set of dispatch instructions issued at the beginning of the interval (though these initial MCPs are not published), may be modified based on intra-interval instructions, and are finally determined and published after the interval, but are not based on a resource's compliance with its dispatch instruction.

The Black-Lined Modifications Contained in the ISO's March 11, 2004 Compliance Filing in the Amendment No. 54 Proceeding

The Commission requested that the ISO provide further information with regard to the ISO's March 11, 2004 compliance filing submitted in the Amendment No. 54 proceeding. The Commission noted that Attachment C to the compliance filing "provided black-lined tariff sheets showing proposed changes as well as a black-lined Index."[11] The Commission stated that "[s]everal tariff sheets indicated as black-lined in the Index [i.e., the table of contents for the ISO Tariff] are not included in Attachment C, which includes clean versions of the revised tariff changes. Attachment C to the compliance filing should incorporate clean versions of all tariff sheets which the CAISO has proposed to revise."[12] The Commission then listed a number of clean tariff sheets that it believed the ISO still needed to provide.[13]

The ISO has examined the March 11, 2004 compliance filing and has determined that in that filing the ISO provided clean versions of all tariff sheets which the ISO proposed to revise in the filing. The sheets that the Commission listed in the Letter Order are all ones on which the ISO proposed no changes in the compliance filing; the ISO merely referred to those sheets in an updated black-lined Index to the ISO Tariff. The ISO needed to update the Index to reflect changes from prior ISO Tariff amendments and to ensure that the Index accurately reflected the sheet numbers and the section headings listed on the sheets. Because the ISO did not propose any changes to the sheets themselves, the ISO submits that there is no need to provide the clean tariff sheets the Commission listed in the Letter Order.

Definition of Constrained Output Generation

The Commission noted that in the transmittal letter for Amendment No. 58 to the ISO Tariff ("Amendment No. 58"), the ISO explained that it proposed to

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11 Letter Order at 2.

12 *Id.*

13 *Id.*

adopt, as its definition of "Constrained Output Generation," the following definition provided by the Commission in the Amendment No. 54 Order: "generating resources that cannot easily or economically change load levels and are typically restricted to generating at their full capacity for their unit-specific minimum run time."[14] The Commission explained that this definition was subsequently included in the Master Definitions Supplement, Appendix A to the ISO Tariff. The Commission then noted that Section 2.5.23.2.1.2 discusses the eligibility of a resource to set the Dispatch Interval Ex Post Price as follows:

> A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for the maximum Energy deliverable based on its maximum applicable ramp rate cannot be marginal (*i.e.*, it cannot move in a particular direction) and thus is not eligible to set the Dispatch Interval Ex Post Price. System Resources are not eligible to set the Dispatch Interval Ex Post Price. A resource dispatched at its lower operating limit, if otherwise eligible, will be eligible to set the Dispatch Interval Ex Post Price if any portion of its Energy is necessary to serve Demand.[15]

The Commission stated that "[t]his language appears to define constrained output resources more restrictively than the definition included in the Master Definitions Supplement. Please reconcile the differences in these two provisions."[16]

As the ISO explained in the transmittal letter for Amendment No. 58, the definition of Constrained Output Generation submitted in that amendment was the same as the Commission's description of "lumpy" generating resources (i.e., resources that typically are either off or are operating at their maximum operating level) contained in the Amendment No. 54 Order.[17] The ISO proposed to define Constrained Output Generation not because this type of resource would not ever be allowed to set the MCP, but because, as envisioned in Amendment No. 54, this type of resource would be permitted to set the MCP under certain conditions.

The first sentence in Section 2.5.23.2.1.2 sets forth conditions under which a resource cannot set the interval price. A resource may not set the price under those conditions because the resource is not "marginal." Under those

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[14] *Id.* (quoting Transmittal Letter for Amendment No. 58, Docket No. ER04-609-000 (Mar. 2, 2004), at 4).

[15] Letter Order at 2 (quoting Section 2.5.23.2.1.2 of the ISO Tariff).

[16] Letter Order at 2.

[17] Transmittal Letter for Amendment No. 58 at 4 (citing Amendment No. 54 Order at P 70).

conditions, the resource cannot incrementally respond to a further dispatch instruction. A "lumpy" generating unit is similarly not "marginal" in that it cannot respond incrementally (i.e., cannot respond to exactly meet the incremental requirement) when dispatched. It must either produce its full output or remain off-line. Under those circumstances, a "lumpy" generating unit would never be allowed to set the price according to Section 2.5.23.2.1.2. The ISO intended, however, that a "lumpy" generating unit would be able to set the price if any part of its output was needed to meet Demand (though the unit could not operate at anything less than its full output). A "lumpy" generating unit would not be eligible to set the MCP, however, if its output was not needed to meet Demand but the unit remained in operation to satisfy a run-time constraint. Under those circumstances, the "lumpy" generating unit would be paid its bid price but could not set the MCP.

The ISO therefore proposes the following changes to the definition of Constrained Output Generation to make clear that the type of resource the ISO intends to allow to set the real-time price when any part of its output is needed to meet Demand is one that has only two possible states – off-line or operating at its maximum output:

Constrained Output Generation	Generating resources ~~that cannot easily or economically change load levels and are typically restricted to generating at their full capacity for their unit specific minimum run time~~ **<u>with only two viable operating states: (a) off-line or (b) operating at their maximum output level</u>**.

To make clear that this type of resource can set the price if any part of its output is needed to serve Demand, the ISO proposes the following changes to Section 2.5.23.2.1.2:

> **2.5.23.2.1.2 Eligibility.** A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for the maximum Energy deliverable based on its maximum applicable ramp rate cannot be marginal (*i.e.*, it cannot move in a particular direction) and thus is not eligible to set the Dispatch Interval Ex Post Price. System Resources are not eligible to set the Dispatch Interval Ex Post Price. ~~A resource dispatched~~

> ~~at its lower operating limit, if otherwise eligible,~~**Constrained Output Generation that has the ability to be committed or shut off within the two-hour time horizon of the Real Time Market** will be eligible to set the Dispatch Interval Ex Post Price if any portion of its Energy is necessary to serve Demand.

Conclusion

As directed in the Letter Order, the ISO has provided a copy of the present response to all parties that have requested intervention in the proceedings concerning Amendment Nos. 54 and 58 and has provided a copy to Colin Mount, Division of Tariffs and Market Development – West.[18] Attachment A to the present filing contains revised ISO Tariff sheets that reflect the new proposed changes described above. Attachment B to this filing contains those same changes in black-line format. In addition, in accordance with the Commission's direction,[19] Attachment C to this filing contains a form notice of filing suitable for publication in the Federal Register; the ISO also provides the notice in electronic format. If there are any questions concerning this filing, please contact the undersigned.

Respectfully submitted,

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Counsel for the California Independent System Operator Corporation

cc: Jamie L. Simler, Director, Division of Tariffs and Market Development - West
Colin Mount – Director of Tariffs and Market Development - West
Intervenors in the proceedings concerning Amendment Nos. 54 and 58

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18 *See* Letter Order at 3.

19 *See id.*

to the ISO Tariff

ATTACHMENT A

will determine separate Dispatch Interval Ex Post Prices for each Zone or groups of Zones on either side of the Congested interface.

2.5.23.2.1.2 Eligibility. A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for the maximum Energy deliverable based on its maximum applicable ramp rate cannot be marginal (*i.e.*, it cannot move in a particular direction) and thus is not eligible to set the Dispatch Interval Ex Post Price. System Resources are not eligible to set the Dispatch Interval Ex Post Price. Constrained Output Generation that has the ability to be committed or shut off within the two-hour time horizon of the Real Time Market will be eligible to set the Dispatch Interval Ex Post Price if any portion of its Energy is necessary to serve Demand.

2.5.23.2.2 Hourly Ex Post Price. The Hourly Ex Post Price in a Settlement Period in each Zone will equal the absolute-value Energy-weighted average of the Dispatch Interval Ex Post Prices in each Zone, where the weights are the system total Instructed Imbalance Energy, except Regulation Energy, for the Dispatch Interval.

Connected Entity	A Participating TO or any party that owns or operates facilities that are electrically interconnected with the ISO Controlled Grid.
Constrained Output Generation	Generating resources with only two viable operating states: (a) off-line or (b) operating at their maximum output level.
Constraints	Physical and operational limitations on the transfer of electrical power through transmission facilities.
Contingency	Disconnection or separation, planned or forced, of one or more components from an electrical system.
Control Area	An electric power system (or combination of electric power systems) to which a common AGC scheme is applied in order to: i) match, at all times, the power output of the Generating Units within the electric power system(s), plus the Energy purchased from entities outside the electric power system(s), minus Energy sold to entities outside the electric power system, with the Demand within the electric power system(s); ii) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice; iii) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice; and iv) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.
Control Area Gross Load	For the purpose of calculating and billing Minimum Load Costs, Emission Costs Charge and Start-Up Fuel Costs Charge, Control Area Gross Load is all Demand for Energy within the ISO Control Area. Control Area Gross Load shall not include Energy consumed by:

ATTACHMENT B

2.5.23.2.1.2 Eligibility. A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for the maximum Energy deliverable based on its maximum applicable ramp rate cannot be marginal (*i.e.*, it cannot move in a particular direction) and thus is not eligible to set the Dispatch Interval Ex Post Price. System Resources are not eligible to set the Dispatch Interval Ex Post Price. ~~A resource dispatched at its lower operating limit, if otherwise eligible,~~Constrained Output Generation that has the ability to be committed or shut off within the two-hour time horizon of the Real Time Market will be eligible to set the Dispatch Interval Ex Post Price if any portion of its Energy is necessary to serve Demand.

* * *

Constrained Output Generation	Generating resources ~~that cannot easily or economically change load levels and are typically restricted to generating at their full capacity for their unit-specific minimum run time~~ with only two viable operating states: (a) off-line or (b) operating at their maximum output level.

ATTACHMENT C

NOTICE SUITABLE FOR PUBLICATION
IN THE FEDERAL REGISTER

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	))))	**Docket Nos. ER03-1046- 001, ER03-1046-002, and ER03-1046-003**
California Independent System Operator Corporation	))))	**Docket Nos. ER04-609-000 and ER04-609-001**
		(Not Consolidated)

Notice of Filing

[ ]

Take notice that on June 17, 2004 the California Independent System Operator Corporation (ISO) submitted a filing in response to the letter order sent to the ISO in the captioned dockets on June 10, 2004 by Jamie L. Simler, Director, Division of Tariffs and Market Development – West.

The ISO states that it has served copies of this response, and all attachments, upon all parties on the official service lists for the captioned dockets. In addition, the ISO is posting this response and all attachments on the ISO Home Page.

Any person desiring to intervene or to protest this filing should file with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. All such motions or protests should be filed on or before the comment date, and, to the extent applicable, must be served on the applicant and on any other person designated on the official service list. This filing is available for review at the Commission or may be viewed on the Commission's web site at http://www.ferc.gov, using the eLibrary (FERRIS) link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at

(866)208-3676, or for TTY, contact (202)502-8659. Protests and interventions may be filed electronically via the Internet in lieu of paper; see 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site under the "e-Filing" link. The Commission strongly encourages electronic filings.

Comment Date: ___________