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August 3, 2004

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

Re: California Independent System Operator Corporation
Docket No. ER04-____-000
Amendment No. 62 to the ISO Tariff

Dear Secretary Salas:

Pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Sections 35.11 and 35.13 of the regulations of the Federal Energy Regulatory Commission ("Commission"), 18 C.F.R. §§ 35.11, 35.13, the California Independent System Operator Corporation ("ISO")[1] respectfully submits for filing an original and six copies of an amendment to the ISO Tariff ("Amendment No. 62"). Amendment No. 62 modifies ISO Tariff provisions regarding the implementation of a Real-Time Market Application ("RTMA") and application of Uninstructed Deviation Penalties ("UDP") previously approved by the Commission. The ISO Governing Board has approved the principles of Amendment No. 62.

I. EXECUTIVE SUMMARY

In the instant filing, the ISO seeks to:

(1) Provide reasonable compensation for generating units during start-up and shut-down by (a) changing the definition of "Start-Up Costs" to

[1] Capitalized terms not otherwise defined herein are defined in the Master Definitions Supplement, Appendix A to the ISO Tariff, as filed August 15, 1997, and subsequently revised.

allow a generating unit owner to bill the ISO for all costs incurred from the times boiler fires are lit through the time the generating unit reaches its minimum operating level, and (b) providing Generating Units with conditional exemptions from UDP during certain portions of their start-up and shut-down sequences. Specifically, the ISO proposes to exempt Generating Units from UDP during start-up between (a) the time when Generating Units are synchronized and (b) when they reach their minimum operating levels. The ISO proposes to exempt Generating Units from UDP during shut-down for the two settlement intervals (*i.e.*, for 20 minutes) following the time the generating unit is (a) expected to shut down (*i.e.*, after its last bilateral hourly schedule) or (b) directed by the ISO to shut down. This will provide market revenues for Energy produced (but not scheduled) during these operating periods that otherwise would be subject to UDP;

(2) Suspend any financial settlement of uninstructed deviation penalties until the first day of the month that begins two months after the RTMA and UDP are put into service. During this time, the ISO will provide advisory data specifying the Energy on which UDP would have been assessed, but will not charge UDP. This will allow Market Participants to see how their units react to the new RTMA and UDP using "live" data and take appropriate action before they are financially liable for any UDP;

(3) Specify that the ISO shall use the maximum ramp rate specified for a unit in the ISO's Master File for a generating unit when a Scheduling Coordinator fails to submit an operational ramp rate function for that generating unit. This will prevent small placeholder or default Master File values from skewing Imbalance Energy requirements and provide for more efficient and reliable Imbalance Energy dispatch; and

(4) Change the number of ramp rate segments that can be specified in the operational ramp rate function from ten to nine to recognize that the RTMA application uses one of these segments itself.

These modifications will (1) provide greater clarity for Market Participants, (2) provide more equitable compensation when a generating unit is starting up or shutting down, (3) provide more reliable Imbalance Energy dispatch for the ISO and (4) reduce the possibility of error or dispute. The ISO respectfully requests that the Commission approve these proposed modifications and allow them to be put into effect coincident with implementation of the previously-approved Phase 1-B Tariff modifications.

II. BACKGROUND

On May 1, 2002, the ISO filed a proposal to implement UDP and a new real-time economic dispatch system. The Commission accepted the ISO's proposal in an order issued July 17, 2002. *California Independent System Operator Corporation*, 100 FERC ¶ 61,060 (2002). The Commission conditioned the implementation of UDP on the ISO implementing a system to allow for real-time reporting of outages and de-rates; and accommodating multiple ramp rates. *Id.* at P 141.

On July 8, 2003, the ISO submitted Amendment No. 54 to the ISO Tariff ("Amendment No. 54"). Amendment No. 54 was intended to provide details for the implementation of certain of the market redesign elements initially proposed in the May 1, 2002 filing (the Phase 1-B redesigns). More specifically, Amendment No. 54 provided detail on:

(1) the new real-time security-constrained economic dispatch system, including how some operating constraints would be accounted for;

(2) the application of UDP, including how UDP would be calculated, what exemptions would apply, and how UDP revenue would be allocated back to Market Participants;

(3) the determination of the Market Clearing Price, including how constrained output generating units are eligible to set the market clearing price; and

(4) the treatment of Minimum Load Costs.

On October 22, 2003, the Commission issued an order accepting much of Amendment No. 54 and directing the ISO to file complying Tariff language within 30 days. *California Independent System Operator Corporation,* 105 FERC ¶ 61,091 (2003). The ISO submitted its compliance filing on November 21, 2003.

On March 2, 2004, the ISO submitted Amendment No. 58 to the ISO Tariff. Amendment No. 58 was intended (1) to clarify how the Tolerance Band will be applied to condition bid cost recovery and the application of UDP within and outside of a Waiver Denial Period; (2) to clearly define constrained output generation; (3) to clarify how UDP will be applied to dynamically scheduled System Resources; and (4) to ensure that the same data is used to represent a unit's operating characteristic for both market and Reliability Must-Run ("RMR") dispatch and settlements.

On March 11, 2004, the ISO submitted a compliance filing in Docket No. ER03-1046 to remove obsolete terms and address inconsistent terms. In an answer submitted on April 16, 2004, the ISO addressed the sole protest submitted by a party concerning the March 11 filing.

On June 10, 2004, Jamie Simler, Director of Tariff and Market Development – West, issued a letter order directing the ISO to provide additional information regarding (1) the ISO's proposed use of *ex post* pricing; (2) black-lined modifications the Commission believed were missing from the ISO's March 11, 2004 compliance filing in Docket ER03-1046; and (3) the definition of Constrained Output Generation. On June 17, 2004, the ISO submitted the information as directed in the letter order.

On July 28, 2004, following the Commission meeting that day, the Commission issued the draft version of an "Order on Rehearing and Compliance On Proposed Tariff Amendment No. 54" in Docket No. ER03-1046 ("Draft A-54 Order") and the draft version of an "Order on Tariff Amendment No. 58" in Docket No. ER04-609 ("Draft A-58 Order").

The instant filing contains proposed modifications to further clarify details of the implementation of the Phase 1-B elements. The modifications have been discussed with stakeholders in a series of conference calls beginning in May 2004. A draft of this proposed amendment was posted on the ISO Home Page for stakeholder review on July 27, 2004. Apart from the comments received following the issuance of the orders indicated above, and discussed in Section III.A below, the only comments provided on the draft were minor editorial corrections.

III. PROPOSED TARIFF MODIFICATIONS

The ISO proposes to amend its Tariff as described below.

A. Provide Compensation to Generating Units During Start-Up and Shut-Down

In an order issued June 19, 2001, the Commission directed the ISO to pay the fuel costs a unit incurs during start-up.[2] In response to that order, the ISO defined Start-Up Fuel Costs[3] in Appendix A to the ISO Tariff as:

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[2] *San Diego Gas & Electric Company*, 95 FERC 61,417, at 62,563 (2001).

[3] The term "Start-Up Fuel Costs" was later changed to "Start-Up Costs" (deleting the word "Fuel") when the Commission approved the ISO's proposal to include auxiliary power costs in Amendment No. 60 to the ISO Tariff in an order issued July 8, 2004. *California Independent System Operator Corporation*, 108 FERC ¶ 61,022, at P 81 (2004).

> The cost of the fuel consumed by a particular generating unit from the time of first fire, the time of receipt of an ISO Dispatch Instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the generating unit is synchronized or re-synchronized to the grid and producing Energy.

A Generating Unit starting up produces Energy beginning at the moment the Generating Unit is synchronized to the grid, even though the unit typically is not available for Dispatch until it reaches its minimum operating level. The time between synchronization and when a Generating Unit reaches its stable minimum operating level can be several hours, and the Generating Unit can produce a significant amount of Energy during that time. The amount of Energy that is produced is a function of what engineering action must be taken to transition the Generating Unit to its stable minimum operating level and not a function of market prices. Thus, the Energy produced during this transition period is typically not scheduled, but instead is produced as Uninstructed Imbalance Energy. Prior to the implementation of UDP, a Generating Unit would be paid the Uninstructed Imbalance Energy price for this energy. While this price may not be sufficient for a Generating Unit to fully recover its costs during this period of operation, it does provide some payment for such Energy.

Even though it takes some time for a Generating Unit to move to its minimum operating level after synchronization, the RTMA software currently assumes that a Generating Unit makes an immediate step transition to its minimum operating level when the unit is synchronized. Again, RTMA does not calculate a dispatch trajectory from synchronization to the Generating Unit's minimum operating level because the Generating Unit has not yet achieved stable operations and is not "responsive" to Dispatch Instructions. Moreover, operations between synchronization and the Generating Unit's stable minimum operating level are often complex (equipment is being switched in during this phase of the start-up sequence and the Generating Unit "held" at various operating points to ensure the equipment is working as intended before proceeding to the next operating level) and somewhat unpredictable compared with operations after the unit has reached its stable minimum operating level. Furthermore, the ISO's Scheduling systems do not allow a Scheduling Coordinator to submit to submit a Schedule for a quantity of Energy that is less than a Generating Unit's minimum operating level as specified in the ISO's Master File. As a result, when UDP are implemented, either (1) the Generating Unit's Scheduling Coordinator will be charged UDP for any Energy produced during this period that is less than its minimum operating level minus the Tolerance Band[4] if the Generating Unit reaches its

[4] The Tolerance Band is equal to the greater of five MW or three percent of the unit's maximum operating level.

minimum operating level after an interval in which it has a Final Hour-Ahead Schedule, or (2) UDP will eliminate payment in excess of the Tolerance Band if the Generating Unit produces energy in an interval in which the Generating Unit has no Final Hour-Ahead Schedule. The UDP would apply as described in this paragraph regardless of whether the Generating Unit is started at the ISO's direction or starting to serve a bilateral contract.

Similarly, when a Generating Unit is shut down, RTMA expects that a Generating Unit produces no additional energy immediately after it reaches its minimum operating level after its last hourly bilateral schedule or the Generating Unit is directed to shut down by the ISO. In reality, the Generating Unit may produce some amount of residual energy during this phase of the shut-down sequence that would otherwise be subject to UDP.

After initial discussions with Market Participants, the ISO determined that it would modify the definition of "Start-Up Costs" to include costs incurred up to the time the Generating Unit reached its minimum operating level, not just to the time of synchronization. This will allow Generating Unit owners that starting their Generating Units as required by the ISO under the must-offer obligation to recover costs incurred between synchronization and the time the Generating Unit reached its minimum operating level. Subsequently, however, a Market Participant indicated that while this proposal addressed the problem in the situation in which a Generating Unit owner invoiced the ISO for an ISO-directed start-up, the proposal did not address the fact that applying UDP would eliminate the Imbalance Energy payment when an owner started up its Generating Unit not at the ISO's direction but to serve a bilateral contract.

The ISO then considered three options to deal with this problem:

1. Do nothing. Generating Unit owners serving bilateral contracts could either recover the cost of this uncompensated energy by renegotiating their contracts or by increasing the bid price for Energy.

2. Allow start-up Energy to be Scheduled by Generating Unit owners by reducing their minimum operating level and modifying their Minimum Load values dynamically through the SLIC[5] interface during this phase of start-up. By dynamically changing the unit's Minimum Load, Generating Unit owners could insulate themselves from UDP. Option 2 would require the ISO to monitor SLIC-submitted changes to Minimum Load to evaluate whether those

[5] SLIC stands for "Scheduling and Logging for ISO of California." SLIC is the ISO's real-time logging tool and the tool through which Market Participants dynamically communicate operating restrictions for their units to the ISO via a web interface.

changes were legitimately intended to deal with this start-up compensation issue.

3. In addition to modifying the definition of "Start-Up Costs" to include costs incurred by a Generating Unit that is required to start-up under the must-offer obligation from the time the Generating Units synchronizes to the grid to the time its reaches its minimum operating level, the ISO would modify the UDP application to effectively suspend all UDP during start-up and for the two Settlement Intervals after shutdown for all Generating Units that are operating at or below their minimum operating level. During start-up, the UDP would be effectively suspended from the time of synchronization (*i.e.*, the time the ISO's systems recognize that the unit is actually on-line and producing energy) until the earlier of (a) the first Settlement Interval after the time of synchronization plus an amount of time equal to the unit's maximum start-up time (as submitted by the generating unit owner and contained in the ISO's Master File), or (b) the Settlement Interval in which the unit produces a quantity of Energy that exceeds the Energy associated with the unit's minimum operating level as specified in the Master File integrated over the Settlement Interval. Condition (a) provides that the Generating Unit owner will transition the generating unit to its minimum operating level in a reasonable time frame. Condition (b) provides once that a unit has reached its stable minimum operating level, UDP will apply to deviations outside the Tolerance Band. During shutdown, UDP will be suspended in the two Settlement Intervals immediately after either (1) the last Settlement Interval in the Generating Unit's last hourly bilateral Schedule, or (2) the point in time at which the Generating Unit is instructed to reach its minimum operating level when directed to shut down by the ISO.

The ISO discussed these options with Market Participants during a July 9, 2004 conference call and asked Market Participants to indicate in writing which option they preferred. Of the eight Market Participants that responded, six (AES, Coral Power, Dynegy, Mirant, Reliant, and Williams) indicated they preferred option 3. Two Market Participants (Calpine and Southern California Edison ("SCE")) indicated they preferred option 2. SCE preferred option 2 but indicated it was not opposed to option 3 as long as the ISO is able to audit information on operating characteristics supplied by Generators. Attachment C contains the Market Participant responses.

The ISO also proposes to implement option 3 to modify the definition of "Start-Up Costs" and to suspend UDP during the start-up and shut-down sequences. The ISO proposes to subtract Imbalance Energy payments made for Energy produced from synchronization to the generating unit's minimum operating level from any invoiced received for that same start-up. This will

ensure that the unit owner is not paid twice for the same costs – once by invoicing the ISO for costs incurred from synchronization to the minimum operating level, and a second time by suspending UDP during the start-up sequence, thereby allowing payment for imbalance energy produced in excess of the Tolerance Band during this phase of start-up.

The ISO notes that in the Draft A-54 Order, the Commission directed the ISO to pay both Minimum Load Costs and the Uninstructed Imbalance Energy payment for the same Energy produced by a unit operating at its minimum operating level in accordance with the must-offer obligation. *See* Draft A-54 Order at PP 76-78. Prior to the issuance of this order, during the stakeholder discussions on the modifications proposed in the instant amendment, no Market Participant questioned the ISO's stated intention to subtract Imbalance Energy payments for Energy produced from synchronization to the minimum operating level from any invoices submitted for start-up costs to avoid double payment for the same amount of Energy. After the Draft A-54 Order was issued, however, several Market Participants asked if the ISO intended to modify the instant filing to reflect the principles of that order to both pay for Imbalance Energy produced by a Generating Unit during start-up between synchronization and reaching its minimum operating level and to allow a Generating Unit owner to separately invoice the ISO for the costs incurred to produce that same Energy during that start-up. Such changes were not discussed with stakeholders, nor discussed with or approved by the ISO Governing Board, and are not included in the instant filing.

B. Suspending Financial Settlement of UDP for a Two Month Period Following Implementation

With Market Participants' assistance, the ISO has extensively tested the Phase 1-B modifications. Market Simulation testing began in November 2003 and is expected to conclude no later than September 17, 2004. During this time, Market Participants have been able to see how the Phase 1-B software performs using simulated data. This testing did not use "live" operating data. With a new real-time dispatch system (the RTMA) and UDP going into effect, Market Participants have asked the ISO to suspend applying UDP for some period of time to allow them to assess how their generating units and market systems perform with the new ISO systems before any financial consequences are imposed. Given the extensive scope of the changes the ISO will be implementing, the ISO has agreed to not charge UDP for a two-month period that will begin when the Phase 1-B systems are put into service. During this time, the ISO will provide to Market Participants, within two weeks of the operating day, information on what deviations outside the Tolerance Band would have been subject to UDP based on expected Energy and the actual performance of their resources by Settlement Interval.

The ISO expects that the Phase 1-B systems will be fully tested when they are put into service. This two-month hiatus on UDP is not a testing period to ensure the Phase 1-B software performs as designed and approved. The Phase 1-B systems should already be fully tested by this time. This additional two-month period is provided to allow Market Participants to review how their generating units and market software systems perform with the new ISO software in place and to make any necessary changes to their market software systems. Although the ISO does not expect to need to make any changes to the Phase 1-B software during this period, the ISO will immediately notify the Commission and Market Participants should any concerns arise and take appropriate action thereafter.

C. Using the Maximum Ramp Rate Specified in the Master File as the Default Ramp Rate if no Operational Ramp Rate is Submitted

When the ISO submitted Amendment No. 54 to implement the Phase 1-B modifications, it indicated it would use the generating unit's maximum ramp rate as submitted by the Generating Unit's owner or Scheduling Coordinator and specified in the ISO's Master File as the default ramp rate. See Transmittal Letter for Amendment No. 54, Docket No. ER03-1046-000 (July 8, 2003), at 10.

In response to Duke Energy's protest of the use of the maximum ramp rate as the default ramp rate, the ISO agreed to use the minimum ramp rate in an answer filed in the Amendment No. 54 proceeding on August 27, 2003.

However, a significant concern has arisen during operational testing of the Phase 1-B software. Many Generating Units specify a very small minimum ramp rate (often 0.1 MW) for various operating ranges for their units in the Master File. These ramp rates may not reflect the actual ramping capability of the Generating Unit for that operating range, but may only be arbitrary placeholder values (*i.e.*, specifies a value where one is required, but does not specify a value that reasonably reflects the actual capability of the Generating Unit). If a sufficient number of Scheduling Coordinators fail to submit reasonable ramp rate functions for a significant number of Generating Units with small default or placeholder ramp rate values, the ISO is concerned that the RTMA software will not be able to effectively respond to normal Imbalance Energy requirements because it will not have enough Generating Units with sufficient combined ramp rate to do so.

The ISO recognizes that using the Generating Unit's maximum ramp rate for an operating range may not accurately reflect the Generating Unit's actual ramping capability on a given day. However, the Generating Unit's owner or Scheduling Coordinator can always mitigate that risk by submitting a reasonable operational ramp rate that reflects the Generating Unit's true ramping capabilities across its operating range. Moreover, the Scheduling

Coordinator can always modify the operational ramp rate in real time by submitting changes to the ISO through the SLIC interface. In other words, the ability to avoid having the unit's maximum ramp rate used as the default value is within the control of the Scheduling Coordinator. The ISO strongly believes that because the Generating Unit's owner or Scheduling Coordinator can mitigate that risk, the dangers of the ISO ramping a Generating Unit according to its maximum rate when the Generating Unit cannot actually achieve that rate are less than the dangers of being unable to effectively respond to Imbalance Energy requirements due to small default ramp rates.

D. Changing the Operational Ramp Rate Function from Ten to Nine Segments

When the ISO filed Amendment No. 54 to specify the details of the Phase 1-B modifications, it indicated in Section 6.5 of the Schedules and Bids Protocol that Scheduling Coordinators could submit an operational ramp rate function consisting of ten segments. The ISO has since verified that the RTMA software uses one of those ramp rate segments to model the unit's transition from 0 MW output to its minimum operating level. Rather than modify the RTMA software, at the cost of additional time and expense, the ISO instead proposes to reduce the number of available ramp rate segments from ten to nine.

The ISO has evaluated generating unit ramp rate data submitted by Market Participants in the Resource Data template. Only eight Market Participants submitted generating unit ramp rate functions with more than nine segments. Of that number, six generating units had functions in which the ninth and tenth pairs indicated the same ramp rate. As a result, this proposed amendment affects only two generating units.

No Market Participant has objected to this change.

E. List of Proposed Tariff Modifications

By this Amendment No. 62, the ISO proposes to:

- Modify Tariff Section 2.5.23.3.7.7 to provide that the ISO will subtract payments for Imbalance Energy produced between synchronization and a unit's minimum operating level from Start-Up Cost Invoices (because those invoices now cover costs incurred up to the point the unit reaches its minimum operating level);

- Modify Tariff Section 11.2.4.1.2 to indicate that UDP will not be charged until the first of the month two months after the Phase 1-B modifications are put into effect;

- Add a new Tariff Section 11.2.4.1.2 (v) to indicate (1) that UDP will not be applied during the time from synchronization to the earlier of (a) the Settlement Interval in which the Generating Unit produces a quantity of Energy that represents a rate of delivery in excess of the Generating Unit's minimum operating level plus the applicable Tolerance Band, or (b) the time that is the start-up time as specified in the Master File after synchronization, or (2) during the two Settlement Intervals that immediately follow either (1) the last non-zero hourly bilateral energy schedule, or (2) an ISO instruction to shut down the resource;

- Modify the definition of Start-Up Cost in Appendix A to the ISO Tariff so that the ISO will pay costs incurred up to the time the unit reaches its minimum operating level;

- Modify Section 6.5 of the Schedules and Bids Protocol to indicate that Scheduling Coordinators may submit an operational ramp rate function consisting of nine, instead of ten, ramp rate segments;

- Modify Section 6.5 of the Schedules and Bids Protocol to indicate that the ISO will use the unit's maximum ramp rate as specified in the Master File for a particular operating range of the generating unit as the default ramp rate for that operating range should a Scheduling Coordinator fail to submit an operational ramp rate function to the ISO;

- Modify Section 2.6.8 of Appendix B to the Settlements and Billing Protocol, which sets forth how UDP are determined, to indicate that UDP will not be charged until the first of the month two months after the Phase 1-B modifications are put into effect.

IV. EFFECTIVE DATE

The ISO respectfully requests that the provisions of Amendment No. 62 be put into effect when the Phase 1-B modifications are put into service. The ISO will provide written notice to the market and to the Commission at least ten (10) days in advance of the implementation of the Phase 1-B modifications. The ISO will implement the Phase 1-B modifications, including the changes proposed herein, on the first day of a month so as to not be implemented in the middle of an invoicing cycle.

To put these provisions into effect when the Phase 1-B systems are put into service, as currently expected on October 1, 2004, the ISO respectfully requests a two-day waiver of the 60-day effective date requirement. October 1, 2004 is 59 days from the date of the instant filing, August 3, 2004, and under Commission policy, the provisions of Amendment

No. 62 would normally be put into effect on the 61st day after filing, which is October 3, 2004.

V. COMMUNICATIONS

Communications regarding this filing should be addressed to the following individuals, whose names should be placed on the official service list established by the Secretary with respect to this submittal:

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VI. SERVICE

The ISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, the California Electricity Oversight Board, on all parties with effective Scheduling Coordinator Service Agreements under the ISO Tariff, and on all parties in the proceedings in Docket Nos. ER03-1046 (Amendment No. 54) and ER04-609 (Amendment No. 58). In addition, the ISO is posting this transmittal letter and all attachments on the ISO Home Page.

VII. ATTACHMENTS

The following documents, in addition to this letter, support this filing:

Attachment A	Revised ISO Tariff sheets
Attachment B	Black-lined ISO Tariff provisions
Attachment C	Market Participant responses regarding the options for dealing with start-up energy
Attachment D	Notice of this filing, suitable for publication in the Federal Register (also provided in electronic format).

Two extra copies of this filing are also enclosed. Please stamp these copies with the date and time filed and return them to the messenger. Please feel free to contact the undersigned if you have any questions concerning this matter.

Respectfully submitted,

Anthony J. Ivancovich BAM

Charles F. Robinson
Anthony J. Ivancovich
Counsel for The California Independent
System Operator Corporation

Enclosures

ATTACHMENT A

ISO may credit or debit, as appropriate, the account of a Scheduling Coordinator for any over- or under-assessment of Start-Up Cost Charges that the ISO determines occurred due to the error, omission, or miscalculation by the ISO or the Scheduling Coordinator.

2.5.23.3.7.6 Submission of Start-Up Cost Invoices

Scheduling Coordinators for Must-Offer Generators that incur Start-Up Costs as a direct result of an ISO Dispatch instruction or if the ISO revokes a waiver from compliance with the must-offer obligation while the unit is off-line in accordance with Section 5.11.6 of this ISO Tariff, and Scheduling Coordinators for Generation Units operating under Condition 2 of the relevant RMR Contract which are called out-of-market in accordance with Section 11.2.4.2 of this ISO Tariff or who are due an additional payment for a start-up under the RMR Contract in accordance with Section 11.2.4.2 of this ISO Tariff may submit to the ISO an invoice in the form specified on the ISO Home Page (the "Start-Up Cost Invoice") for the recovery of such Start-Up Costs. Such Start-Up *Costs shall not exceed the costs which would be incurred within the start-up time for a* unit specified in Schedule 1 of the Participating Generator Agreement. Start-Up Cost Invoices *shall use the applicable proxy figure for natural gas costs as determined* by Equation C1-8 (Gas) of the Schedules to the Reliability Must-Run Contract for the relevant Service Area (San Diego Gas & Electric Company, *Southern California Gas Company, or Pacific Gas and Electric Company), or, if* the Must-Offer Generator is not served from one of those three Service Areas, from the nearest of those three Service Areas. Start-Up Cost Invoices *shall specify the amount of auxiliary power used* during the start-up and the actual price paid for that power. Start-Up Cost Invoices shall not include any Start-Up Costs specified in an RMR Contract for a unit owned or controlled by a Must-Offer Generator.

2.5.23.3.7.7 Payment of Start-Up Cost Invoices

The ISO shall pay Scheduling Coordinators for all Start-Up Costs submitted in a Start-Up Cost Invoice and demonstrated to be a direct result of an ISO Dispatch instruction, except the ISO shall deduct from the amount to be paid all ISO payments for Energy produced between the time the unit

was synchronized and the time the unit reached its minimum operating level. The ISO shall pay such Start-Up Cost Invoices each month in accordance with the ISO Payments Calendar from the funds available in the Start-Up Cost Trust Account. To the extent there are insufficient funds available in the Start-Up Cost Trust Account in any month to pay all Start-Up Costs submitted in a Start-Up Cost Invoice and demonstrated to be a direct result of an ISO Dispatch instruction, the ISO shall make pro rata payment of such Start-Up Costs and shall adjust the rate at which the ISO will assess the Start-Up Cost Charge in accordance with Section 2.5.23.3.7.4. Any outstanding Start-Up Costs owed from previous months will be paid in the order of the month in which such costs were invoiced to

Resource recovers its Energy Bid costs for the quantity of Energy delivered. Payments for un-recovered bid costs for portions of Energy associated with bids above the Maximum Bid Level are subject to recall if such bids have not been adequately justified pursuant to Section 28.1.2.

11.2.4.1.2 Penalties for Uninstructed Imbalance Energy

Beginning on the first day of the month that is two months after the software that determines Uninstructed Deviation Penalties is put in service, the ISO shall charge Scheduling Coordinators Uninstructed Deviation Penalties for Uninstructed Imbalance Energy resulting from resource deviations outside a Tolerance Band from their Dispatch Operating Point, for dispatched resources, or their Final Hour-Ahead Schedule otherwise. The Dispatch Operating Point will take into account the expected Ramping of a resource as it moves to a new Hour-Ahead Schedule at the top of each hour and as it responds to Dispatch Instructions. The Uninstructed Deviation Penalty will be applied as follows:

a) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval. The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval in which the ISO has not declared a staged System Emergency;

t) Amounts collected as Uninstructed Deviation Penalties shall first be assigned to reduce the portion of above-MCP costs that would otherwise be assigned pro rata to all Scheduling Coordinators in that Settlement Interval pursuant to Section 11.2.4.2.2. Any remaining portion of amounts collected as Uninstructed Deviation Penalties after satisfying these sequential commitments shall be treated in accordance with SABP 6.5.2.

u) Condition 2 RMR Units shall be exempt from Uninstructed Deviation Penalties.

v) The Uninstructed Deviation Penalty shall not apply to positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's minimum operating level from the time the Generating Unit synchronizes to the grid to the earlier of (1) the Settlement Interval in which the Generating Unit produces a quantity of Energy that represents an average rate of delivery over such Settlement Interval in excess of the Generating Unit's minimum operating level plus the applicable Tolerance Band, or (2) the first Settlement Interval after the expiration of a period of time that begins at the end of the Settlement Interval in which the Generating Unit synchronizes to the grid and ends after the Generating Unit's maximum start-up time as specified in the Master File. The Uninstructed Deviation Penalty shall not apply to any positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's minimum operating level during the two Settlement Intervals following either (1) the last Settlement Interval of an hour in which the Generating Unit had a non-zero Final Hour-Ahead Schedule or (2) the Settlement Interval in which the Generating Unit is expected to reach its minimum operating level based on the applicable ramp rate when the ISO instructed the Generating Unit to shut down. The amount of Uninstructed Imbalance Energy exempted from the Uninstructed Deviation Penalty shall not exceed the amount of the Generating Unit's minimum operating level plus the applicable Tolerance Band.

11.2.4.2 Payment Options for ISO Dispatch Orders

With respect to all resources which have not bid into the Imbalance Energy or Ancillary Services markets but which have been dispatched by the ISO to avoid an intervention in market operations, to prevent or relieve a System Emergency, or to satisfy a locational requirement, the ISO shall calculate, account for and, if applicable, settle deviations from the Final Schedule submitted on behalf of each such resource, with the relevant

Start-Up Cost Charge	The charge determined in accordance with Section 2.5.23.3.7.
Start-Up Cost Demand	The level of Demand specified in Section 2.5.23.3.7.3.
Start-Up Cost Invoice	The invoice submitted to the ISO in accordance with Section 2.5.23.3.7.6.
Start-Up Cost Trust Account	The trust account established in accordance with Section 2.5.23.3.7.2.
Start-Up Costs	The cost incurred by a particular Generating Unit from the time of first fire, the time of receipt of an ISO Dispatch instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the generating unit reaches its minimum operating level. Start-Up Costs are determined as the sum of (1) the cost of auxiliary power used during the start-up and (2) the number that is determined multiplying the actual amount of fuel consumed by the proxy gas price as determined by Equation C1-8 (Gas) of the Schedules to the Reliability Must-Run Contract for the relevant Service Area (San Diego Gas & Electric Company, Southern California Gas Company, or Pacific Gas and Electric Company), or, if the Must-Offer Generator is not served from one of those three Service Areas, from the nearest of those three Service Areas.

entire MW range as provided for in SBP Section 6.5. SCs must comply with the ISO Data Templates and Validation Rules document, which contains the format for submission of Energy Bids.

SBP 6.3 Timing of Submission of Energy Bids

For specific timeline requirements for the submission of Energy Bids see the Dispatch Protocol.

SBP 6.4 Validation of Energy Bids

The ISO will check whether Energy Bids comply with the format requirements and will notify a SC if its bid does not so comply. A SC can check whether its Energy Bids will pass the ISO's validation by manually initiating validation of its Energy Bids at any time prior to the deadline for submission of Energy Bids. It is the SC's responsibility to perform such checks. SCs must comply with the ISO Data Templates and Validation Rules document, which contains the validation criteria for Energy Bids.

SBP 6.5 Format and Validation of Operational Ramp Rates

The submitted operational ramp rate expressed in megawatts per minute (MW/min) as a function of the operating level, expressed in megawatts (MW), must be a staircase function with up to nine segments defined by a set of 1 to 10 pairs, e.g., (50,1),(100,3),(200,2), (300,2). There is no monotonicity requirement for the operational ramp rate. The submitted operational ramp rate shall be validated as follows:

- The range of the submitted operational ramp rate must cover the entire capacity of the resource, from the minimum to the maximum operating capacity, as registered in the Master File for the relevant resource.
- The operating level entries must match exactly (in number, sequence, and value) the corresponding minimum and maximum operational ramp rate breakpoints, as registered in the Master File for the relevant resource.
- If a Scheduling Coordinator does not submit an operational ramp rate for a generating unit for a day, the ISO shall use the maximum ramp rate for each operating range set forth in the Master File as the ramp rate for that unit for that same operating range for that day.
- The last ramp rate entry shall be equal to the previous ramp rate entry and represent the maximum operating capacity of the resource as registered in the Master File. The resulting operational ramp rate segments must lie between the minimum and maximum operational ramp rates, as registered in the Master File.
- The submitted operational ramp rate must be the same for each hour of the Trading Day, i.e., the operational ramp rate submitted for a given hour must be the same with the one(s) submitted earlier for previous hours in the same Trading Day.

$TL_{i,h,o}$ =

$$\sum_{1}^{k}\sum_{1}^{v} REAL\_TIME\_FLOW_{i,h,o,k,v} * (1 - GMMa_h)$$

The transmission loss charge will be calculated based on the following formulation:

$TLC_{i,h,o}$ =

$$-\sum_{1}^{k} IIE\_LOSS_{i,h,o,k} * STLMT\_PRICE_{i,h,o} + TL_{i,h,o} * STLMT\_PRICE_{i,h,o}$$

D 2.8 Uninstructed Deviation Penalty Charges

The ISO will calculate but not assess charges for UDP according to this Section 2.8 until the first day of the month two months after the software that calculates UDP is put into service.

For negative Uninstructed Deviation Penalty billable quantities where $UDP\_BQ_{h,o} < 0$ and $ZONAL\_EX\_POST\_PRICE_{j,h,o} > 0$,
$UDP\_NEG\_Amt_i\ AMT_{i\,h,o}$ =
$-1 * UDP\_BQ_{i,h,o} * ZONAL\_EX\_POST\_PRICE_{j,h,o} * .5$

For positive UDP billable quantities where $UDP\_BQ_{i,h,o} > 0$ and $ZONAL\_EX\_POST\_PRICE_{j,h,o} > 0$, then
$UDP\_POS\_AMT_{i,h,o} = UDP\_BQ_{i,o,h} * ZONAL\_EX\_POST\_PRICE_{j,h,o}$

where,

$UDP\_BQ_{i,o,h}$ is the Uninstructed Deviation Penalty (UDP) billable quantity in MWh for a resource, or aggregated resource, denoted by i for Settlement Interval *o* of hour *h.*

$UDP\_POS\_AMT_{i,o,h}$ or $UDP\_NEG\_AMT_{i,o,h}$ are the penalty amounts in Dollars for either an aggregated or individual resource *i* for Settlement Interval *o* of hour *h.*

The ISO will not calculate UDP settlement amounts for Settlement Intervals when the corresponding Zonal Settlement Interval Ex Post Price is negative or zero.

For an MSS that has elected to follow its own Load, the Scheduling Coordinator for the MSS Operator will be assessed the Uninstructed Deviation Penalty charges based on the Deviation Band and Deviation Price in Section 23.12.2 of the ISO Tariff.

D 3 Meaning of terms in the formulae

D 3.1 [Not Used]

ATTACHMENT B

ATTACHMENT B
(BLACK-LINE EDITS)

2.5.23.3.7.7 Payment of Start-Up Cost Invoices

The ISO shall pay Scheduling Coordinators for all Start-Up Costs submitted in a Start-Up Cost Invoice and demonstrated to be a direct result of an ISO Dispatch instruction, except the ISO shall deduct from the amount to be paid all ISO payments for Energy produced between the time the unit was synchronized and the time the unit reached its minimum operating level. The ISO shall pay such Start-Up Cost Invoices each month in accordance with the ISO Payments Calendar from the funds available in the Start-Up Cost Trust Account. To the extent there are insufficient funds available in the Start-Up Cost Trust Account in any month to pay all Start-Up Costs submitted in a Start-Up Cost Invoice and demonstrated to be a direct result of an ISO Dispatch instruction, the ISO shall make pro rata payment of such Start-Up Costs and shall adjust the rate at which the ISO will assess the Start-Up Cost Charge in accordance with Section 2.5.23.3.7.4. Any outstanding Start-Up Costs owed from previous months will be paid in the order of the month in which such costs were invoiced to the ISO. The ISO's obligation to pay Start-Up Costs is limited to the obligation to pay Start-Up Cost Charges received. All disputes concerning payment of Start-Up Cost Invoices shall be subject to ISO ADR Procedures, in accordance with Section 13 of this ISO Tariff.

* * *

11.2.4.1.2 *Penalties for Uninstructed Imbalance Energy*

Beginning on the first day of the month that is two months after the software that determines Uninstructed Deviation Penalties is put in service, tThe ISO shall charge Scheduling Coordinators Uninstructed Deviation Penalties for Uninstructed Imbalance Energy resulting from resource deviations outside a Tolerance Band from their Dispatch Operating Point, for dispatched resources, or their final Hour-Ahead Schedule otherwise. The Dispatch Operating Point will take into account the expected ramping of a resource as it moves to a new Hour-Ahead Schedule at the top of each hour and as it responds to Dispatch Instructions. The Uninstructed Deviation Penalty will be applied as follows:

* * *

11.2.4.1.2

(v) The Uninstructed Deviation Penalty shall not apply to positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's minimum operating level from the time the Generating Unit synchronizes to the grid to the

earlier of (1) the Settlement Interval in which the Generating Unit produces a quantity of Energy that represents an average rate of delivery over such Settlement Interval in excess of the Generating Unit's minimum operating level plus the applicable Tolerance Band, or (2) the first Settlement Interval after the expiration of a period of time that begins at the end of the Settlement Interval in which the Generating Unit synchronizes to the grid and ends after the Generating Unit's maximum start-up time as specified in the Master File. The Uninstructed Deviation Penalty shall not apply to any positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's minimum operating level during the two Settlement Intervals following either (1) the last Settlement Interval of an hour in which the Generating Unit had a non-zero Final Hour-Ahead Schedule or (2) the Settlement Interval in which the Generating Unit is expected to reach its minimum operating level based on the applicable ramp rate when the ISO instructed the Generating Unit to shut down. The amount of Uninstructed Imbalance Energy exempted from the Uninstructed Deviation Penalty shall not exceed the amount of the Generating Unit's minimum operating level plus the applicable Tolerance Band.

* * *

Start-Up Costs

The cost incurred by a particular Generating Unit from the time of first fire, the time of receipt of an ISO Dispatch instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the generating unit reaches its minimum operating level.~~is synchronized or re-synchronized to the grid and producing Energy.~~ Start-Up Costs are determined as the sum of (1) the cost of auxiliary power used during the start-up and (2) the number that is determined multiplying the actual amount of fuel consumed by the proxy gas price as determined by Equation C1-8 (Gas) of the Schedules to the Reliability Must-Run Contract for the relevant Service Area (San Diego Gas & Electric Company, Southern California Gas Company, or Pacific Gas and Electric Company), or, if the Must-Offer Generator is not served from one of those three Service Areas, from the nearest of those three Service Areas.

***

SBP 6.5 Format and Validation of Operational Ramp Rates

The submitted operational ramp rate expressed in megawatts per minute (MW/min) as a function of the operating level, expressed in megawatts (MW), must be a staircase function with up to nine~~10~~ segments defined by a set of 1 to 10~~11~~ pairs, e.g., (50,1),(100,3),(200,2),(300,2). There is no monotonicity requirement for the operational ramp rate. The submitted operational ramp rate shall be validated as follows:

- The range of the submitted operational ramp rate must cover the entire capacity of the resource, from the minimum to the maximum operating capacity, as registered in the Master File for the relevant resource.
- The operating level entries must match exactly (in number, sequence, and value) the corresponding minimum and maximum operational ramp rate breakpoints, as registered in the Master File for the relevant resource.
- If a Scheduling Coordinator does not submit an operational ramp rate for a generating unit for a day, the ISO shall use the ~~minimum~~maximum ramp rate for each operating range set forth in the Master File as the ramp rate for that unit for that same operating range for that day.
- The last ramp rate entry shall be equal to the previous ramp rate entry and represent the maximum operating capacity of the resource as registered in the Master File. The resulting operational ramp rate segments must lie between the minimum and maximum operational ramp rates, as registered in the Master File.
- The submitted operational ramp rate must be the same for each hour of the Trading Day, i.e., the operational ramp rate submitted for a given hour must be the same with the one(s) submitted earlier for previous hours in the same Trading Day.
- Outages that affect the submitted operational ramp rate must be due to physical constraints, reported in SLIC and are subject to ISO approval. All approved changes to the submitted operational ramp rate will be used in determination of Dispatch Instructions for the shorter period of the balance of the Trading Day or duration of reported Outage.
- For all ISO Dispatch Instructions of Reliability Must Run resources the operational ramp rate will be the ramp rate declared in the Reliability Must Run Contract Schedule A.

* * *

* * *

D 2.8 Uninstructed Deviation Penalty Charges

The ISO will calculate but not assess charges for UDP according to this Section 2.8 until the first day of the month two months after the software that calculates UDP is put into service.

For negative Uninstructed Deviation Penalty billable quantities where

$UDP\_BQ_{h,o} < 0$ and $ZONAL\_EX\_POST\_PRICE_{j,h,o} > 0$,
$UDP\_NEG\_Amt_i\ AMT_{i\,h,o} =$
$-1 * UDP\_BQ_{i,h,o} * ZONAL\_EX\_POST\_PRICE_{j,h,o} * .5$

For positive UDP billable quantities where $UDP\_BQ_{i,h,o} > 0$ and $ZONAL\_EX\_POST\_PRICE_{j,h,o} > 0$, then
$UDP\_POS\_AMT_{i,h,o} = UDP\_BQ_{i,o,h} * ZONAL\_EX\_POST\_PRICE_{j,h,o}$

where,

$UDP\_BQ_{i,o,h}$ is the Uninstructed Deviation Penalty (UDP) billable quantity in MWh for a resource, or aggregated resource, denoted by i for Settlement Interval *o* of hour *h*.

$UDP\_POS\_AMT_{i,o,h}$ or $UDP\_NEG\_AMT_{i,o,h}$ are the penalty amounts in Dollars for either an aggregated or individual resource *i* for Settlement Interval *o* of hour *h*.

The ISO will not calculate UDP settlement amounts for Settlement Intervals when the corresponding Zonal Settlement Interval Ex Post price is negative or zero.

For an MSS that has elected to follow its own Load, the Scheduling Coordinator for the MSS Operator will be assessed the Uninstructed Deviation Penalty charges based on the Deviation Band and Deviation Price in Section 23.12.2 of the ISO Tariff.

ATTACHMENT C

ATTACHMENT C (Market Participant Comments on Start-Up Energy Options)

On Start-Up Energy and UDP For Phase 1-B

Participant	Option 1:	Option 2	Option 3
AES			X
Calpine		X	Note: supported option 3 on phone call
Coral			X
Dynegy			X
Mirant			X
Reliant			X
SCE		X	OK
Williams			X

Detailed Comments:

1. **AES supported option 3 on phone call.**

2. **Calpine: Although Calpine argued for option 3 on the conference call, their *written comments indicate that they support option 2. Comments below from* e-mail from Alan Padget from Calpine:**

In response to the conference call on Friday, I would like to state my position on the three given options. Although there are advantages and disadvantages to Options 2 & 3, the advantages to option 2 outweigh option 3.
Therefore, I would prefer option 2 - to have the option to adjust Pmin during start-up.

In response to the conference call on Friday, I would like to state
Calpine's position on the three given options.

Calpine would prefer Option 2 - the ability to adjust PMin during start-up.

Regards.

3. **Coral: Supported option 3.**

The following are the comments of West Coast Power (WCP) and Coral Energy Trading (Coral and, collectively with WCP, WCP/Coral). Both WCP and Coral at times self-schedule physical resources interconnected within the CAISO control area and are thus impacted by the application of Uninstructed Deviation Penalties (UDPs) to start up energy production. WCP/Coral appreciates the opportunity to comment per the market notices dated July 8and 12, 2004. WCP/Coral respectfully requests that these comments and others submitted be posted by CAISO on its MD02 Phase 1-B website.

WCP/Coral supports a modified version of Option 3 that allows for a limited exemption from UDP during both start up and shut down. With regards to Option 3, WCP/Coral fully supports the comments of Reliant Energy (Reliant) submitted to CAISO on July 13, 2004. Rather than reiterate Reliant's arguments, WCP/Coral makes the following supplemental comments:

1. When CAISO applied for a UDP, CAISO's primary rationale was that generators were excessively deviating from final hour-ahead schedules causing "serious reliability problems as the CAISO must undertake significant compensatory actions in real time." (CAISO, Amendment 44 Transmittal Letter: Public Version, May 1, 2002, p. 35.) CAISO was careful to

not make the UDP a blunt instrument but to target it at the behaviors to which it specifically sought to control: "The ISO carefully has designed the [UDP] penalties so they are not only fair, but are targeted to the specific type of behavior the ISO is attempting to discourage." (Id., p.36.) Nowhere has CAISO claimed that energy produced during startup (or shutdown) was a cause of the reliability concerns that motivated UDP in the first place. FERC's approval of UDP was based on CAISO's rationale. Further, FERC has always conditioned UDP on "developing software improvements to receive and incorporate communications on outages, derates, and operating problems in real-time." (FERC, July 17, 2002 Order, p. 49. Accordingly, FERC conditioned UDP's approval on implementation of those software changes. For this reason, WCP/Coral views the application of UDP on the production of energy during startup to be inconsistent with the original intent of UDP and inconsistent with FERC's approval of UDP.

2. The real-time price of power should reflect the current marginal opportunity cost of production on the CAISO system. Thus, an exemption from UDP during startup does not create a subsidy "uplift"? CAISO will simply compensate for the power at its opportunity cost. Paying nothing for the energy when there is no "bad" behavior to penalize (as could be argued is the case when a generator is operating at Pmin and fails to follow a instruction from the CAISO) is confiscatory because there is no reliability or operational benefit from the application of the penalty.

3. CAISO has a legitimate concern that an exemption from UDP should not provide an avenue for unlimited production of uninstructed energy. WCP/Coral suggest that the tolerance band can simply be widened so that its upper boundary equals Pmin during the hours between synchronization and the first hourly schedule. The number of hours that the tolerance band could be widened can be limited to the startup time for each resource as reflected in the resource data template (RDT). WCP/Coral is aware of no significant software design problems created by this additional specification on the setting of the tolerance band. Currently, the tolerance band is a function of the amount of capacity that is online, so it already computed dynamically for each resource. Should CAISO maintain that software and systems are an issue, CAISO should estimate the software and system changes necessary to accommodate Option 3 and make them known to market participants. As noted by Reliant, Option 3 is superior to Option 2 because it would not require frequent changes to Pmin. In fact, under Option 3, changes to Pmin should be infrequent and if there are frequent changes, it could be investigated by CAISO's Compliance Department or Department of Market Analysis.

4. As noted above, WCP/Coral sees no principled reason to not extend Option 3's limited UDP exemption to the shut down period for units as well. There can be limited uncontrollable energy produced subsequent to the final hour-ahead schedule and de-synchronization of the resource from the system. Within reasonable bounds, the tolerance band should be widened during that period as well.

4. Coral: Submitted letter to Board of Governors supporting Option 3.

5. Dynegy: Written support for Option 3 by Alan Comnes

The following are the comments of West Coast Power (WCP) and Coral Energy Trading (Coral and, collectively with WCP, WCP/Coral). Both WCP and Coral at times self-schedule physical resources interconnected within the CAISO control area and are thus impacted by the application of Uninstructed Deviation Penalties (UDPs) to start up energy production. WCP/Coral appreciates the opportunity to comment per the market notices dated July 8and 12, 2004. WCP/Coral respectfully requests that these comments and others submitted be posted by CAISO on its MD02 Phase 1-B website.

WCP/Coral supports a modified version of Option 3 that allows for a limited exemption from UDP during both start up and shut down. With regards to Option 3, WCP/Coral fully supports the comments of Reliant Energy (Reliant) submitted to CAISO on July 13, 2004. Rather than reiterate Reliant's arguments, WCP/Coral makes the following supplemental comments:

1. When CAISO applied for a UDP, CAISO's primary rationale was that generators were excessively deviating from final hour-ahead schedules causing "serious reliability problems as the CAISO must undertake significant compensatory actions in real time." (CAISO, Amendment 44 Transmittal Letter: Public Version, May 1, 2002, p. 35.) CAISO was careful to not make the UDP a blunt instrument but to target it at the behaviors to which it specifically sought to control: "The ISO carefully has designed the [UDP] penalties so they are not only fair, but are targeted to the specific type of behavior the ISO is attempting to discourage." (Id., p.36.) Nowhere has CAISO claimed that energy produced during startup (or shutdown) was a cause of the reliability concerns that motivated UDP in the first place. FERC's approval of UDP was based on CAISO's rationale. Further, FERC has always conditioned UDP on "developing software improvements to receive and incorporate communications on outages, derates, and operating problems in real-time." (FERC, July 17, 2002 Order, p. 49. Accordingly, FERC conditioned UDP's approval on implementation of those software changes. For this reason, WCP/Coral views the application of UDP on the production of energy during startup to be inconsistent with the original intent of UDP and inconsistent with FERC's approval of UDP.

2. The real-time price of power should reflect the current marginal opportunity cost of production on the CAISO system. Thus, an exemption from UDP during startup does not create a subsidy "uplift"? CAISO will simply compensate for the power at its opportunity cost. Paying nothing for the energy when there is no "bad" behavior to penalize (as could be argued is the case when a generator is operating at Pmin and fails to follow a instruction from the CAISO) is confiscatory because there is no reliability or operational benefit from the application of the penalty.

3. CAISO has a legitimate concern that an exemption from UDP should not provide an avenue for unlimited production of uninstructed energy.
WCP/Coral suggest that the tolerance band can simply be widened so that its upper boundary equals Pmin during the hours between synchronization and the first hourly schedule. The number of hours that the tolerance band could be widened can be limited to the startup time for each resource as reflected in the resource data template (RDT). WCP/Coral is aware of no significant software design problems created by this additional specification on the setting of the tolerance band. Currently, the tolerance band is a function of the amount of capacity that is online, so it already computed dynamically for each resource. Should CAISO maintain that software and systems are an issue, CAISO should estimate the software and system changes necessary to accommodate Option 3 and make them known to market participants. As noted by Reliant, Option 3 is superior to Option 2 because it would not require frequent changes to Pmin. In fact, under Option 3, changes to Pmin should be infrequent and if there are frequent changes, it could be investigated by CAISO's Compliance Department or Department of Market Analysis.

4. As noted above, WCP/Coral sees no principled reason to not extend Option 3's limited UDP exemption to the shut down period for units as well. There can be limited uncontrollable energy produced subsequent to the final hour ahead schedule and de-synchronization of the resource from the system. Within reasonable bounds, the tolerance band should be widened during that period as well.

6. **Mirant: Support for Option 3 on phone.**

7. **Reliant: Written support for Option 3 by Trent Carlson**

Reliant Energy appreciates the opportunity to again comment on the CAISO's plans to redefine Start-Up Costs and to selectively apply Uninstructed Deviation Penalties ("UDP") during the start-up of generating units. Specifically, Reliant Energy's concerns relate to the possible application of UDP to self-committed generating units, between the time of synchronization and reaching the Master File value of Pmin. The CAISO has set out three Options in its updated "Discussion Paper #2" to address the concerns of Reliant and others. However, two of the options (Options 1 and 2) cannot be supported. For the reasons given below, we support the implementation of Option 3.

The CAISO's Option 1 doesn't work for the reasons given in our letter to the Board (attached). As well, and as described in so many words in the CAISO's May 2004 memorandum to the Board (at pages 2 and 3, not attached, available on CAISO website), Option 1 would penalize self-committed Generating Units in the bilateral market and use the penalty proceeds to subsidize the CAISO's Start-Up Costs that it incurs in denying waiver requests of other generating units.

The CAISO's Option 2 doesn't work as it assumes that unit-specific Master File data can be supplemented with another "pmin" value (that would be associated with the start-up timeframe prior to a generating unit reaching its official Master File PMin value) so as to "manage" against the application of UDP to self-committed generating units. Not only is this an unnecessary complication, but it doesn't recognize the fact that some generating units may have to sit, i.e., "soak", at several different intermediate values of "pmin" between the time of synchronization and the release to full operation at the official Master File PMin value. For some steam generating units this could be the better part of half a day or more. Further, under the CAISO's Option 2, counterparties to a bilateral transaction would have to somehow "schedule" the start-up energy at the several different intermediate values of "pmin" prior to having the generating unit released for full operation at the official Master File PMin value. Reliant appreciates the CAISO's attempt to develop alternate solutions, but Option 2 simply doesn't work. Additionally, the Option 2 complexities would be borne by generators and their counterparties for the sole purpose of attempting to avoid a CAISO penalty that has no useful purpose served by its application.

There is simply no useful or justifiable purpose served in the CAISO penalizing generators for self-committing their generating units under bilateral arrangements. Moreover, there is no justification, nor should there be authority, for the CAISO to require bilateral contracting parties to suffer the complexities of managing against the inappropriately applied UDP. Quite to the contrary, Reliant and others believe that Tariff provisions should, instead, encourage the self-commitment of generating units. As well, Reliant and others are not asking for the total costs to be reimbursed, rather we are asking to receive the market price for the energy provided to the system (i.e., the ex post imbalance energy price). The CAISO's Options 1 and 2 aim in the opposite direction and should not be supported.

During the Friday, July 9, 2004, Phase1-B conference call, there was a question as to the possibility of games that could be played under Option 3.

- First, the normal operating procedures for synchronizing any and all generating units to the grid require four (4) phone calls from the Scheduling Coordinator's ("SC") generation desk to the CAISO Generation Desk. These events are noted and recorded in SLIC, and are as follows: (1) When the unit commences start-up procedures; (2) When the unit has fires in the boiler ("Fires In"); (3) When the unit synchronizes on-line ("Breaker closed"); and (4) When the unit has ceased start-up and is now on-line ("On-line and released for full load" - able to fully respond to dispatches and is capable of following schedules). The energy that the SC's are requesting to be exempt from UDP under Option 3 is all energy produced between "Breaker Closed" and "Online Released".

- Second, there are CAISO systems and procedures already in place for the CAISO to monitor these conditions and to insure the safe and reliable operation of the system; that is, the CAISO already stores, in the SCs' required Resource Data Template ("RDT"), the start-up profiles for each generating unit. In the RDT, SCs provide the start-up time expected from start-up notification to "Online Released". Therefore, the CAISO will know, based on RTD values and forward scheduling of the generating units, the expected end time of UDP exemption.

- Third, and from a financial perspective, an SC would prefer to be "Online Released" where it can follow schedules and participate in the Supplemental Energy and Ancillary Service capacity markets. Simply put, the benefit of not being subject to UDP does not compensate enough for the penalty of not being able to participate in the market.

Therefore, there are no adverse incentives associated with Option 3.

Also during the Friday July 09, 2004 Phase1-B meeting, there appeared to be unanimous support for Option 3. However, the CAISO indicated that there might be CAISO software modifications required to implement Option 3. We're not sure what software modifications might be required on the part of the CAISO to implement Option 3 that would be anymore difficult than that required to implement Option 2 with multiple "pmins", "ramp rates", "heat rates", etc. Option 3 does not require Master File modification, or new software to retrieve additional data from the Master File, for the purpose of avoiding the inappropriate application of UDP to self-committed generating units during start-up. Nor does Option 3 require burdensome SLIC entries to avoid the inappropriate application of UDP to self-committed generating units during start-up. As we understand the implementation of Option 2 it will likely require both of these changes.

In summary, Option 3 maintains the most accurate unit characteristics in the CAISO Master File (RDT) and will not require numerous SLIC entries or modifications to the Master File as required under Option 2. It is the most comparable to NERC standards. And it does not create disincentives for bilateral contracting. As well, Option 3 does not result in penalty proceeds being collected from self-committed generating units that are then used to pay down the CAISO's Start-Up Costs associated with its Must-Offer Waiver Denial process as in Option 1.

With these comments, Reliant Energy renews its support for the CAISO's Option 3. Please let me know if you have any questions regarding these comments or if you need additional information. I can be reached at 713-828-8022.

Thanks, and best regards,
Trent.

8. SCE: Written comments in support of Option 2 but ok with Option 3 by Alexander Cabrera

SCE prefers Option 2 (allow modification of PMin with no change in recommendation regarding UDP or Start-Up Cost Compensation). If for some reason Option 2 is not possible to implement, we would accept Option 3 (limited UDP exemption for Start-Up). We also suggest that the CAISO include the following clarifications:

The CAISO should clarify that the issue of concern is not due to bilateral transactions. Rather, the issue is that the CAISO's scheduling and settlement processes do not provide a way for SCs to reflect the fact energy will be delivered after a unit is synchronized to the grid but before the resource is operating at least at its minimum operating level. Without the ability to reflect these operational characteristics, SCs would be inappropriately penalized

because suppliers would not be compensated for some energy their resources produce prior to reaching minimum load.

The CAISO should also ensure any differences between Pmin and the power output at synchronization reflect the physical constraints of the generator. As a condition to implementing Option 3, the CAISO should have the ability to review or audit information provided by the generators regarding these operating characteristics.

Regards
Alex Cabrera

Alexander Cabrera
Federal Regulation & Contracts
Transmission & Distribution Business Unit
Southern California Edison
Tel: (626) 302-9629 Fax: (626) 302-1152
Alexander.Cabrera@sce.com

9. Williams: Written support of Option 3 by Brent Davis

In response to the CAISO's Phase 1-B Energy Compensation During Start-Up Discussion Paper #2, Williams Power Company would like to 1) state that it does have the same concerns expressed by Reliant in regards to starts supporting bilateral transactions and 2) support option #3 that exempts the unit from UDP during start-up.

Thank you,
Brent Davis
Williams Power Company
(918) 573-9670
Brent.j.davis@williams.com

ATTACHMENT D

NOTICE OF FILING SUITABLE FOR PUBLICATION IN THE FEDERAL REGISTER

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	)	**Docket No. ER04 -____-000**

Notice of Filing

[ ]

Take notice that on August 3, 2004, the California Independent System Operator Corporation (ISO) tendered for filing an amendment to the ISO Tariff, Amendment No. 62, for acceptance by the Commission. The ISO states that the purpose of Amendment No. 62 is to (1) provide compensation to generating units during certain portions of the generating unit's start-up and shut-down sequences by (a) modifying the definition of the term "Start-Up Costs" and (b) by not applying Uninstructed Deviation Penalties during start-up and immediately after shut-down; (2) suspend all Uninstructed Deviation Penalties for two months beginning when the Phase 1-B modifications are put into service; and (3) use the unit's maximum ramp rate as specified in the ISO Master File for a given operating range as the default ramp rate for that range if no operational ramp rate function is submitted to the ISO; and (4) reduce the number of available segments that can be used to describe a generating unit's ramping capabilities across its operational range from ten to nine.

The ISO states that this filing has been served upon the Public Utilities Commission, the California Energy Commission, the California Electricity Oversight Board, all parties in Docket Nos. ER03-1046 and ER04-609, and all parties with effective Scheduling Coordinator Agreements under the ISO Tariff.

The ISO is requesting the amendment to be made effective when the Phase 1-B modifications are put into service.

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: _____