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November 21, 2003

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

Re: California Independent System Operator Corporation
Compliance Filing
Docket No. ER03-1046-___

Dear Secretary Salas:

The California Independent System Operator Corporation ("ISO")[1] respectfully submits six copies of this filing in compliance with the Commission's "Order on Proposed Tariff Amendment No. 54," issued in the captioned docket on October 22, 2003, 105 FERC ¶ 61,091 ("Amendment No. 54 Order"). As described below, the ISO proposes changes to the ISO Tariff to comply with the Amendment No. 54 Order.

I. INTRODUCTION

In Amendment No. 42, filed in January 2002, the ISO proposed modifications to its Tariff to implement a single-price real-time economic dispatch system and uninstructed deviation penalties. The Commission rejected these aspects of Amendment No. 42 as premature anticipating the ISO's filing a comprehensive market redesign proposal in May 2002.

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[1] Capitalized terms not otherwise defined herein are used in the sense given in the Master Definitions Supplement, Appendix A to the ISO Tariff.

On May 1, 2002, the ISO filed a comprehensive market redesign proposal ("May 1 MD02 Proposal"), which, among other things, included proposed Tariff language to implement a single-price real-time economic dispatch system and uninstructed deviation penalties. The Commission approved the real-time economic dispatch system and uninstructed deviation penalties subject to some modifications, including accommodating multiple ramp rates, in an order issued on July 17, 2002.[2]

In September 2002, the ISO began a stakeholder process to develop the details of the real-time economic dispatch system and the uninstructed deviation penalties.

The ISO implemented the Automatic Mitigation Procedures proposed in the May 1 MD02 Proposal on October 30, 2002.

After extensive stakeholder discussions, the ISO filed proposed Amendment No. 54 on July 8, 2003. Amendment No. 54 contained Tariff modifications to implement the details of the real-time economic dispatch system and the uninstructed deviation penalties.

On October 22, 2003, the Commission issued the Amendment No. 54 Order. The instant filing is intended to comply with the directives contained in the Amendment No. 54 Order.

II. TARIFF MODIFICATIONS

A. Default Ramp Rate

The Amendment No. 54 Order acknowledged the ISO's commitment, in the answer the ISO submitted in the captioned docket on August 27, 2003 ("Answer"), to use a Generating Unit's maximum ramp rate, rather than its minimum ramp rate, as its default ramp rate. The Amendment No. 54 Order also directed the ISO to submit Tariff changes that show the minimum ramp rate as the default ramp rate. Amendment No. 54 Order at P 23. The ISO submits proposed changes to Section 6.5 of the Schedules and Bids Protocol ("SBP") to comply with this directive.

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[2] *California Independent System Operator Corporation*, 100 FERC ¶ 61,060 ("July 17 Order").

B. UDP Aggregation Procedure

The Commission stated that it approved as reasonable the ISO's proposed rules for aggregation of resources for the purpose of netting deviations, but required the ISO to "include the final aggregation operating procedure in its Tariff" as part of this compliance filing. Amendment No. 54 Order at P 36. To comply, the ISO submits its proposed Uninstructed Deviation Penalty Aggregation Protocol. This Protocol sets forth the key concepts and processes related to aggregations, namely, the criteria and processes for reviewing, approving, modifying, restricting, and suspending aggregations, without providing unnecessary and immaterial detail related to internal ISO processes that may reasonably change from time to time.

C. Application of Uninstructed Deviation Penalties to Out-Of-Market Transactions and to System Resources

The Commission stated that it conditionally approved the ISO's proposal regarding exemptions from Uninstructed Deviation Penalties ("UDP"). However, the Commission required the ISO to "respond to the requests for clarification from SWP, Metropolitan, and FPLE regarding the proposed application of UDP to out-of-market transactions and System Resources." Amendment No. 54 Order at P 46. These parties requested: clarification of Section 11.2.4.1.2 of the Tariff to state whether the tolerances and other aspects of UDP apply equally to out-of-market transactions; (2) clarification of the definition of Tolerance Band, which refers specifically to Generating Units and System Units and includes no reference to System Resources; and (3) modification of the definition of Tolerance Band to remove references to characteristics that FPLE asserted have no relation to intertie transactions (such as Pmax). Amendment No. 54 Order at PP 41, 42.

To comply, the ISO submits modifications to Section 11.2.4.1.2(o) of the Tariff and the definition of "Tolerance Band." The ISO clarifies that the Tolerance Band does not apply to System Resources because (1) the concept of a maximum unit output, or Pmax, does not apply to System Resources, and (2) transactions from System Resources, as inter-control area interchange schedules, are deemed delivered.

UDP apply to a System Resource only when the System Resource has provided the ISO with a bid, the ISO calls upon (i.e., pre-dispatches) that bid at

least 40 minutes prior to the operating hour, and the System Resource declines to perform to that bid by failing to Schedule that transaction as an interchange schedule. System Resources are not subject to UDP if the transaction is not scheduled due to the actions of the control area operator. Similarly, out-of-market transactions from System Resources are subject to UDP only if the ISO and System Resource agree on the transaction and the System Resource then fails to Schedule the transaction. The System Resource is not subject to UDP if the transaction is not scheduled due to actions taken by the control area operator.

Out-of-market transactions from Generating Units and System Units, which have physical maximum operating limits, are subject to UDP in the same way that market transactions from those resources are. Those resources are subject to UDP if their output varies by more than the Tolerance Band from the Dispatch Operating Point in an interval.

D. Exemption for Units Providing Regulation

The Amendment No. 54 Order directed the ISO to submit modifications to Section 11.2.4.1.2(g) of the Tariff to exempt units providing Regulation and under the control of the ISO's Automatic Generation Control system from UDP, as the ISO committed to do in its Answer. Amendment No. 54 Order at PP 45, 46. The ISO submits modifications to Section 11.2.4.1.2(g) to comply with this directive.

E. Exemption for Condition 2 Reliability Must-Run Units

The Amendment No. 54 Order directed the ISO to include new Section 11.2.4.1.2(u) of the Tariff to exempt RMR Condition 2 units from the UDP, as the ISO committed to do in its Answer. Amendment No. 54 Order at paragraphs 44, 46. The ISO submits new Section 11.2.4.1.2(u) to comply with this directive.

F. Self-provision of Transmission Losses

The Commission directed the ISO "to continue to permit all SCs [Scheduling Coordinators], including System Resources, the option of self-providing Transmission Losses." Amendment No. 54 Order at P 58. The ISO proposes changes to Section 7.4.1 of the Tariff to comply with this directive.

G. Elimination of the Performance Band

The Amendment No. 54 Order rejected the proposed requirement that a Generating Unit operate at a level that is between 90% and 110% of its instructed operating level before allowing that unit to set the market clearing price. The Commission stated that it found the ISO's proposal "to establish a new 10% performance requirement in order for a generator to be eligible to set the market clearing price unnecessary" because "an additional performance requirement is redundant to UDP and the CAISO has other mechanisms at its disposal to confront potential misconduct from Market Participants." Amendment No. 54 Order at P 79. 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.

H. Minimum Load Cost Compensation

The Commission stated that it rejected the ISO's proposal "not to compensate a Must-Offer Generator for either minimum load costs or bid costs for energy dispatched above minimum load when it generates outside of the Tolerance Band within a Settlement Interval." Amendment No. 54 Order at P 107. The ISO had intended to use the variable PERF_STAT as defined in Section 2.6.1 of Appendix D of the Settlements and Billing Protocol ("SABP") and used in Section 2.6 of Appendix D of the SABP to equal 1 when the unit produces a quantity of energy that was within the Tolerance Band of its instructed operating point and 0 otherwise. In that way, any interval in which the unit did not recover its bid costs would only be included in the daily revenue total if the unit operated near its expected level. Instead, the ISO will set PERF_STAT to 1 in every interval in which the unit could be producing instructed imbalance energy. The ISO submits changes to Section 2.6.1 of Appendix D of the SABP to comply with the Commission's directives.

The Commission expressly directed that minimum load payments and bid cost recovery payments for must-offer resources dispatched above minimum load are not to be subject to the Tolerance Band. The Commission did not propose to extend the same treatment to non-must-offer resources. The ISO reasonably expects such resources to operate within the Tolerance Band amount of the Dispatch Operating Point and proposes to eliminate bid cost recovery

payments for those intervals in which the non-must-offer resource does not operate within the Tolerance Band amount of the Dispatch Operating Point. The ISO submits modifications to Section 11.2.4.1.1.1 to distinguish the bid cost recovery for must-offer resources and non-must-offer resources. The ISO also submits changes to Section 5.11.6.1.1 to exempt the Must-Offer Generator from any Tolerance Band requirements for an interval when the ISO dispatches energy above minimum load, and submits changes to a related section, Section 2.9 of Appendix D of the SABP.

I. Error Regarding Time to Provide ISO with an Explanation After a Forced Outage

Section 11.2.4.1.2(p) of the Tariff, as submitted in Amendment No. 54, inadvertently created a conflict with existing approved Tariff language. Section 11.2.4.1.2(p) proposed that a Generating Unit must provide the ISO with information that verifies the reason the Generating Unit did not comply with the Dispatch Instruction within 72 hours of an event (such as a Forced Outage) that causes the Generating Unit to be unable to perform with the instruction. Existing Tariff Section 2.2.3.9.5 directs that the Generating Unit must provide such information within 48 hours, not 72 hours. The ISO submits revisions to Section 11.2.4.1.2(p) to eliminate this conflict. While the Amendment No. 54 Order did not direct the ISO to modify this language, the ISO respectfully asks the Commission to accept this proposed modification so as to avoid any problem that may arise from the conflicting language.

J. Errors Regarding Energy Formulae

The ISO has discovered two errors in formulae submitted in Amendment No. 54, and respectfully requests that the Commission allow the ISO to correct those errors as part of this compliance filing.

1. First Tier Uninstructed Imbalance Energy Correction

The ISO proposes to amend the first tier Uninstructed Imbalance Energy (UIE) formula located in Section 2.1.1 of Appendix D of the SABP to include the data term for self-provided transmission loss quantities (IIE_LOSS), and to reflect this change in the definition contained in Section 3.91 of Appendix D of the SABP. The modified formula achieves correct UIE settlement using the same resource-specific price that was used to settle the deemed-delivered expected

Energy quantities. This applies to specific conditions for any undelivered self-provided transmission loss quantities. Otherwise, the current submitted UIE formula results in a UIE settlement based on a different zonal price from the resource-specific price used to settle the deemed delivered Energy.

2. Transmission Loss Obligation

The Transmission Loss Obligation formula, located in Section 2.7 of Appendix D of the SABP and as submitted in Amendment No. 54, calculates the obligation based on the difference between the metered and self-provided transmission loss quantities. Self-provided transmission losses, however, should not be included in this calculation. The corrected formula submitted in this compliance filing calculates the transmission loss obligation based only on metered energy quantities.

K. January 20, 2004 Compliance Filing

The Amendment No. 54 Order directed the ISO to correct inconsistencies and eliminate invalid references in its Tariff and Operating Protocols in a compliance filing due on January 20, 2004. *See* Amendment No. 54 Order at P 126. The ISO will provide such a filing as directed by the Commission.

III. 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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IV. ATTACHMENTS

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

Attachment A	Revised ISO Tariff sheets
Attachment B	Black-lined ISO Tariff sheets showing proposed modifications
Attachment C	A form 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. Feel free to contact the undersigned if you have any questions concerning this matter.

Respectfully submitted,

BRM

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Date: November 21, 2003

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. 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.

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.

5.11.6.1 Recovery of Minimum Load Costs By Must-Offer Generators

5.11.6.1.1 Eligibility

Units from Must-Offer Generators that incur Minimum Load Costs during Self-Commitment Periods or during hours for which the ISO has granted to them a waiver shall not be eligible to recover such costs for such hours. When a Must-Offer Generator is awarded Ancillary Services in the Hour-Ahead market or has a Final Hour-Ahead Schedule, the Must-Offer Generator shall not be eligible to recover Minimum Load Costs for any such hours within a Waiver Denial Period. When, on a 10-minute Settlement Interval basis, a Must-Offer Generator generating at Minimum Load in compliance with the Must-Offer Obligation, produces a quantity of Energy that varies by more than the Tolerance Band, the Must-Offer Generator shall not be eligible to recover Minimum Load Costs for any such Settlement Intervals during hours within a Waiver Denial Period. When, on a Settlement Interval basis, a Must-Offer Generator's resource produces a quantity of Energy above Minimum Load due to an ISO Dispatch Instruction, the Must-Offer Generator shall recover its Minimum Load Costs and its bid costs, as set forth in Section 11.2.4.1.1.1, for any such Settlement Intervals during hours within a Waiver Denial Period, irrespective of deviations outside of its Tolerance Band. Subject to the foregoing eligibility restrictions set forth in this section, the ISO shall guarantee recovery of the Minimum Load Costs of an otherwise eligible Must-Offer Generator for each Settlement Interval during hours within a Waiver Denial Period as follows: (1) First, ISO will pre-dispatch for Real-time the Minimum Load Energy from Must-Offer Generators that have been denied waivers for each hour within a Waiver Denial Period; (2) This Minimum Load Energy will be accounted as Instructed Imbalance Energy for each Settlement Interval within the relevant hour and be settled at the Resource-Specific Settlement Interval Ex Post price; (3) To the extent the Instructed Imbalance Energy payments are not sufficient to

redispatch cost will be recovered for each Settlement Period through the Grid Operations Charge, which shall be paid to the ISO by all Scheduling Coordinators in proportion to their metered Demands within the Zone with Intra-Zonal Congestion, and scheduled exports from the Zone with Intra-Zonal Congestion to a neighboring Control Area, provided that, with respect to Demands within an MSS in the Zone and scheduled exports from the MSS to a neighboring Control Area, a Scheduling Coordinator shall be required to pay Grid Operations Charges only with respect to Intra-Zonal Congestion, if any, that occurs on an interconnection between the MSS and the ISO Controlled Grid, and with respect to Intra-Zonal Congestion that occurs within the MSS, to the extent the Congestion is not relieved by the MSS Operator.

7.4 Transmission Losses.

7.4.1 Obligation to Provide for Transmission Losses.

Each Scheduling Coordinator shall ensure that it schedules sufficient Generation to meet both its Demand and Transmission Losses responsibilities as determined in accordance with this Section 7.4. Scheduling Coordinators for Generators, System Units and System Resources are responsible for their respective proportion of transmission losses as determined in accordance with Section 7.4.2. For each Final Hour-Ahead Schedule, each Scheduling Coordinator representing Generators or System Units shall elect through the flag described in SBP Section 2.1.1 to either: 1) generate sufficient additional energy to meet its respective transmission losses or 2) be financially responsible for its respective transmission loss obligation based on the Imbalance Energy procured on its behalf by the ISO. In the ISO Imbalance Energy Market, all Scheduling Coordinators for Generators, System Units, and System Resources must be financially responsible for all respective transmission losses associated with their respective Imbalance Energy Dispatch Instructions in Real Time, based on the Imbalance Energy procured on their behalf by the ISO. A Scheduling Coordinator for an MSS Operator that has elected

relevant Resource-Specific Settlement Interval Ex Post Price and 2) the resource's Energy Bid cost for each Settlement Interval. Bid cost recovery payment will be based on Settlement Intervals in which the resource did not: 1) recover its Energy Bid costs, and 2) generated or consumed an amount of Energy equal to its schedule, any Dispatch Instructions and its applicable Tolerance Band. The Tolerance Band requirement will not apply to Must-Offer Generators that produce a quantity of Energy above minimum load due to an ISO Dispatch Instruction. These Settlement Intervals will be netted against all Settlement Intervals in which the Instructed Imbalance Energy payments to the resource exceeded its Energy Bid costs. The resulting total bid cost recovery payment is then divided equally amongst the same Settlement Intervals to yield a per-Settlement Interval bid cost recovery payment. For non-must offer resources, this per-Settlement Interval bid cost recovery payment shall then be paid to each Settlement Interval in which the resource generated or consumed an amount of Energy equal to its schedule, any Dispatch Instructions and its applicable Tolerance Band. For must-offer resources, this per-Settlement Interval bid cost recovery payment shall be made in each interval the unit was instructed by the ISO to operate above its minimum load, or returning to its minimum load from a prior ISO instruction. Payments for un-recovered bid costs for portions of Energy associated with bids above the Maximum Bid Level will not be netted with other surpluses or deficits and are subject to recall if the such bids above have not been adequately justified pursuant to Section 28.1.2. Energy Bid cost recovery associated with Residual Energy as provided for in Section 2.5.22.6.4 shall be based on the Energy Bids for the previous or next operating hour, whichever the case may be, upon which the Dispatch Instruction was based.

11.2.4.1.1.2 Bid Cost Recovery for System Resources

The ISO shall determine, for each Settlement Period, for each System Resource submitting bids in the Real-Time Market pursuant to Section 2.5.22, whether there exists a surplus or deficit in that resource's recovery of its Energy Bid costs. This determination of market revenue surplus or deficit shall be calculated as the difference between: 1) the Instructed Imbalance Energy payment as based on the simple average of the relevant Dispatch Interval Ex Post Prices for each Settlement Period and 2) the resource's Energy Bid cost for each Settlement Period. An uplift payment will be made as necessary for each Settlement Period to assure that the System 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

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;

that has not elected to follow the MSS Load, the Uninstructed Deviation Penalties in this Section 11.2.4.1.2 will apply;

g) The Uninstructed Deviation Penalty will apply to Generating Units providing Regulation and dynamically scheduled System Resources providing Regulation to the extent that Uninstructed Deviations from such resources exceed each resource's actual Regulation range plus the applicable Tolerance Band. Resources providing Regulation and generating within their relevant Regulating range (or outside their relevant Regulating range as a direct result of ISO control or instruction) will be deemed to have zero deviations for purposes of the Uninstructed Deviation Penalty.

h) The Uninstructed Deviation Penalty will be calculated and assessed for each resource individually, except that as specified in this Section, Uninstructed Deviations from individual resources may be aggregated. Uninstructed Deviations can be aggravated for resources that: 1) are represented by the same Scheduling Coordinator, 2) are connected to the same ISO Controlled Grid bus and voltage level, and 3) are not Reliability Must Run Condition 2 resources. The ISO will consider, on a case-by-case basis, requests to aggregate Uninstructed Deviations amongst resources represented by the same Scheduling Coordinator based on an ISO review of impact on the ISO Controlled Grid. The ISO may temporarily suspend any aggregation as needed to ensure reliability. The applicable Pmax of aggregated groups of resources will exclude units that are not operating;

i) [Not Used]

j) [Not Used]

k) The Uninstructed Deviation Penalty will not apply when the Zonal Settlement Interval Ex Post Price is negative or zero;

l) The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to 100% of the corresponding Zonal Settlement Interval Ex Post Price. The net effect of the Uninstructed Deviation Penalty and the Settlement for positive Uninstructed Imbalance Energy beyond the Tolerance Band will be that the ISO will not pay for such Energy;

m) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to 50% of the corresponding Zonal Settlement Interval Ex Post Price;

n) The Uninstructed Deviation Penalty will not apply to deviations from Energy delivered as part of a scheduled test so long as the test has been scheduled by the Scheduling Coordinator with the ISO or the ISO has initiated the test for the purposes of validating unit performance;

o) The Uninstructed Deviation Penalty shall apply to any excess Energy delivered from or any shortfall of Energy not delivered from an Out of Market (OOM) transaction involving a Generating Unit or a System Unit once the ISO and the supplier have agreed upon the time of, duration of, and the amount of Energy to be delivered in the OOM transaction. The Uninstructed Deviation Penalty shall apply to firm OOM transactions with System Resources to the extent the System Resource fails to deliver the agreed-to Energy or over-delivers the agreed-to Energy if that over- or under-delivery was due to action taken by or not taken by the System Resource and not the result of action taken by a control area operator due to a curtailment of firm transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the Pre-Dispatch Instruction;

p) Generating Units with Uninstructed Imbalance Energy will be exempted from the Uninstructed Deviation Penalty if the Generating Unit was physically incapable of delivering the expected Energy, provided that the Generating Unit had notified the ISO within 30 minutes of the onset of an event that prevents the resource from performing its obligations. A Generating Unit must notify ISO operations staff of its reasons for failing to deliver the expected Energy in accordance with Section 2.3.3.9.2 and must provide information to the ISO that verifies the reason the resource failed to comply with the Dispatch instruction within 48 hours of the operating hour in which the instruction is issued;

q) Adjustments to any Generating Unit, Curtailable Demand and System Resource Final Hour-Ahead Schedules made in accordance with the terms of Existing Transmission Contracts shall not be subject to Uninstructed Deviation Penalties.

r) Any changes made to Schedules prior to the ISO issuing Final Hour-Ahead Schedules shall not be subject to Uninstructed Deviation Penalties.

s) Uninstructed Deviation Penalties shall not be charged to any deviation from a Dispatch Instruction that does not comply with the requirements set forth in the Dispatch Protocol.

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.

(3%) of the relevant Generating Unit's or System Unit's maximum output (Pmax), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period.

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Participating Loads for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the applicable Final Hour-Ahead Schedule or ISO Dispatch amount divided by number of Settlement Intervals per Settlement Period.

The Tolerance Band shall not be applied to System Resources.

Trading Day The twenty-four hour period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 daily, except where there is a change to and from daylight savings time.

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 10 segments defined by a set of 1 to 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 ramp rate set forth in the Master File as the ramp rate for that unit 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

Imbalance Energy is calculated as follows:

Generator Calculation for ISO Metered Entities:

$$IE_{i,h,o} = ME_{i,h,o} - SE_{i,h,o}$$

Load Calculation:

$$IE_{i,h,o} = SE_{i,h,o} - ME_{i,h,o}$$

System Resource Calculation:

$$IE_{i,h,o} = \sum_{1}^{k}\sum_{1}^{v} REAL\_TIME\_FLOW_{i,h,o,k,v} - SE_{i,h,o}$$

where,

$$SE_{i,h,o} = \frac{HAfin_{i,h}}{6}$$

$ME_{i,h,o}$ actual meter data for each resource *i* of each Settlement Interval *o* for each hour *h*.

Uninstructed Imbalance Energy is calculated as follows:

$$UIE_{i,h,o} = E_{i,h,o} - IIE\_REG_{i,h,o}$$

where:

$$E_{i,h,o} = IE_{i,h,o} - \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} - \sum_{1}^{k} IIE\_ML_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} - \sum_{1}^{k} RE\_STANDARD_{i,h,o,k} - \sum_{1}^{k} RED_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} - \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} - \sum_{1}^{k} IIE\_RERATE_{i,h,o,k}$$

$IIE\_REG_{i,h,o}$ is the Regulating Energy for resource *i* during Settlement Interval *o* in hour *h*

$$UIE\_1_{i,h,o} = \begin{cases} \min\left(UIE_{i,h,o}, -\min\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} \right.\right. \\ \quad + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} \quad \therefore UIE_{i,h,o} \geq 0 \\ \left.\left. \quad + \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k} \right)\right) \\ \max\left(UIE_{i,h,o}, -\max\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} \right.\right. \\ \quad + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L+} + \sum_{1}^{k} RED_{i,h,o,k} \quad \therefore UIE_{i,h,o} < 0 \\ \left.\left. \quad + \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k} \right)\right) \end{cases}$$

$$UIE\_2_{i,h,o} = UIE_{i,h,o} - UIE\_1_{i,h,o}$$

$$UIEC_{i,h,o} = \left(-1 * UIE\_1_{i,h,o} * STLMT\_PRICE_{i,h,o}\right) + \left(-1 * UIE\_2_{i,h,o} * ZONAL\_EX\_POST\_PRICE_{j,h,o}\right)$$

A resource shall have met its performance requirement if its $UIE_{i,h,o}$ is within its relevant Tolerance Band. A resource meeting its performance requirement in Settlement Interval o will have a $PERF\_STAT_{i,h,o} = 1$. A resource that has not met its performance requirement in Settlement Interval *o* will have a $PERF\_STAT_{i,h,o} = 0$.

Must offer resources that produce a quantity of Energy above Minimum Load due to an ISO Dispatch Instruction are not subject to the Tolerance Band requirement for purposes of receiving either Minimum Load Cost Compensation, as defined in section 5.11.6.1.1, or Bid Cost Recovery, as set forth in section 11.2.4.1.1.1. Accordingly, the $PERF\_STAT_{i,h,o}$ for eligible must offer resources, as defined in section 5.11.6.1.1, shall be set to 1, irrespective of deviations outside of the Tolerance Band.

System Resources do not have a Tolerance Band. Non- Participating Load Agreement (PLA) load resources are not subject to the performance requirement.

D 2.6.2 Unrecovered Costs Neutrality Allocation

For each Settlement Interval *o*, the total Unrecovered Costs for Trade Day *d* shall be allocated pro-rata to each Scheduling Coordinator *g* based on its Metered Demand, calculated as follows:

$URC\_ALLOC_{g,h,o} = M_{g,h,o} * Per\ Unit\ Price$

where,

$M_{g,h,o}$ = the Metered Demand in the ISO control area for Scheduling Coordinator *g* in Settlement Interval *o* for hour *h*;

$$Per\ Unit\ Price = \frac{-1 * \sum_{1}^{i} COST\_RECOVERY_{i,h,o}}{\sum_{1}^{g} M_{g,h,o}}$$

D 2.6.3 Calculation of Unrecovered Cost Payment for System Resources

As set forward in Section 11.2.4.1.1.2, System Resources that are dispatched and deliver hourly-predispatched Instructed Imbalance Energy will be paid the higher of the simple average of the twelve Dispatch Interval Ex Post prices for the hour or their Energy bid costs for the quantity of Energy delivered in each hour. The determination of the hourly uplift payment shall be determined as follows: (1) Market deficits or surpluses are calculated as the difference between the resource-specific price and the resource's (hourly) bid cost; (2) An hourly uplift payment will be determined for any amount less than zero; (3) This hourly amount will then be divided evenly by the relevant number of *n*-Settlement Intervals and paid this portion for each Settlement Interval of the hour.

The hourly-predispatched uplift payment is calculated as follows:

$$PREDISPATCH\_UPLIFT_{i,h} = \min\left(0, \sum_{1}^{o}\left(\left(\sum_{k=1}^{2}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m}\right) * STMLT\_PRICE_{i,h,o} - \left(\sum_{k=1}^{2}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} * IIE\_PRICE_{i,h,o,k,m}\right)\right)\right)$$

$$PREDISPATCH\_PMT_{i,h,o} = PREDISPATCH\_UPLIFT_{i,h} / n$$

where,
n is the relevant number of Settlement Intervals *o* in the relevant hour *h* for resource *i.*

for the portion of incremental energy bid segments with $IIE\_PRICE_{i,h,o,k,m}$ less than or equal to the Maximum Bid Level and all decremental energy bid segments with $IIE\_PRICE_{i,h,o,k,m}$ greater than or equal to the Bid Floor.

D 2.6.4 Allocation of Unrecovered Cost Payments for Hourly Pre-dispatched System Resources

For each Settlement Interval *o*, the total uplift payments ($PREDISPATCH\_PMT_{i,h,o}$) for all hourly pre-dispatched System Resources will be included in the Excess Cost Payments to be allocated to a Scheduling Coordinator's Net Negative Deviation through allocation of excess costs and/or ISO metered Demand through excess cost neutrality allocation.

D 2.6.5 Excess Cost Payments for Instructed Incremental Energy Bids above the Maximum Bid Level

Incremental Instructed Imbalance Energy above the Maximum Bid Level will receive an additional Excess Cost Payment subject to operating within a resource's Tolerance Band.

Excess cost payments are calculated as follows:

$$EXCESS\_COST_{i,h,o} = \left[\left(\sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m}\right) * STLMT\_PRICE_{i,h,o} - BID\_COST_{i,h,o} - BID\_COST\_RIE_{i,h,o}\right] * PERF\_STAT_{i,h,o}$$

for the portion of energy bid segments with $IIE\_PRICE_{i,h,o,k,m}$ and $RIE\_PRICE_{i,h,o,k,m}$ greater than the Maximum Bid Level.

D 2.7 Transmission Loss Obligation

The transmission loss obligation charge shall be determined as follows:
For Generators:

$TL_{i,h,o} = ME_{i,h,o} * (1 - GMMa_h)$

For System Resources, the transmission loss obligation shall be determined as follows:

$TL_{i,h,o}$ =

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

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

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 2.9 Minimum Load Cost Compensation

The ISO shall calculate a Must-Offer Generator's Minimum Load Cost Compensation (MLCC), pursuant to section 5.11.6.1.1 of the ISO Tariff, as the market revenue deficit below its Minimum Load Cost as follows:

$$MLCC_{i,h,o} = PERF\_STAT_{i,h,o} * [\ min\ (0,\ MR\_ML_{i,h,o} - MLC_{i,h,o})]$$

where:

The market revenue from Minimum Load Energy is indicated as

$$MR\_ML_{i,h,o} = \sum_{l}^{k} IIE\_ML_{i,h,o,k} * STLMT\_PRICE_{i,h,o}$$

$MLC_{i,h,o}$ is the Minimum Load Cost for each resource *i* during Settlement Interval *o* of hour *h,* as defined in section 5.11.6.1.2 of the ISO Tariff.

The ISO will calculate the Tolerance Band $PERF\_STAT_{i,h,o}$ for each resource *i* as defined in Section 2.6.1 of this Appendix D of SABP.

D 3 Meaning of terms in the formulae

D 3.1 [Not Used]

D 3.81 **$MR\_DIFF_{i,h,o}$**

is the market revenue surplus or deficit for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.82 **$MR\_DEFICIT_{i,h,o}$ – $**

The market revenue deficit for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.83 **$MR\_SURPLUS_{i,h,o}$ – $**

The market revenue surplus for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.84 **$PERF\_STAT_{i,h,o}$ – True/False**

The performance status of resource *i* for Settlement Interval *o* of Settlement Period *h*. The performance status is equal to 1 (compliant) or 0 (non-compliant).

D 3.85 **$BID\_COST_{i,h,o}$ – $**

The bid costs for IIE, except OOS Energy and RIE, for resource *i* in Settlement Period *h* for Settlement interval *o*.

D 3.86 **$BID\_COST\_RIE_{i,h,o}$ – $**

The bid costs for RIE for resource *i* in Settlement Period *h* for Settlement interval *o*.

D 3.87 **$PREDISPATCH\_PMT_{i,h,o}$ – $**

The unrecovered bid cost payment for an Settlement Periodly pre-dispatched System Resource *i* in Settlement Interval *o* for Settlement Period *h*.

D 3.88 **$EXCESS\_COST_{i,h,o}$ – $**

The excess cost payment for resource *i* in Settlement Interval *o* for Settlement Period *h*.

D 3.89 **$TL_{i,h,o}$ – MWh**

The Transmission Loss Obligation for resource *i* during Settlement Interval *o* of Settlement Period *h*.

D 3.90 **$EXCESS\_COST\_ALLOC_{g,h,o}$ – $**

The excess cost allocation for Scheduling Coordinator *g* in Settlement Period *h* for Settlement Interval *o*.

D 3.91 **$REAL\_TIME\_FLOW_{i,h,o,k,v}$ – MW*h***

The real-time actual flow for intertie resource *i* during Dispatch Interval *k* during Settlement Interval *o* of Settlement Period *h* for Real Time Flow Type index v. Real Time Flow Type index *v* must be one of the following Energy types: FIRM NFIRM, SUPP, WHEEL, DYN, ESPN, ENSPN, OOM, ERPLC.

D 3.92 **$RE\_STANDARD_{i,h,o,k}$ – MWh**

UDP AGGREGATION PROTOCOL

UDP AGGREGATION PROTOCOL

Table of Contents

UAP 1 . OBJECTIVE, DEFINITIONS, AND SCOPE

UAP 1.1 Objective

The UDP will be calculated and assessed for each resource individually, except that as specified in this Protocol, resources may be aggregated.

The objective of this protocol is to describe and standardize the process for reviewing and approving or denying aggregations used in calculating the UDP. It also describes the process for making changes to, temporarily restricting, or permanently suspending an existing UDP Aggregation.

UAP 1.2 Definitions

UAP 1.2.1 Master Definitions Supplement

Any word or expression defined in the Master Definition Supplement to the ISO Tariff shall have the same meaning where used in this Protocol. A reference to a Section or Appendix is to a Section or an Appendix of the ISO Tariff. References to UAP are to this Protocol or to the stated paragraph of this Protocol.

UAP 1.2.2 Special Definitions for this Protocol

In this Protocol, the following words and expressions shall have the following meanings:

"UDP" shall mean the penalty established in Section 11.2.4.1 of the ISO Tariff.

"UDP Aggregation" shall mean two or more units scheduled by the same Scheduling Coordinator with the same resource identification that are to be considered interchangeable for calculating the UDP.

"Uninstructed Deviation" shall mean a deviation from the resources' Dispatch Operating Point.

UAP 1.3 Scope

There are two types of UDP Aggregation Classifications:

(1) Basic UDP Aggregations: composed of Generating Units connected at the same substation and stepping up to the same voltage level bus bar, or

(2) Custom UDP Aggregations: composed of Generating Units connected at different substations and/or different voltage levels, particularly where the Generating Units to be aggregated are separated by ISO Controlled Grid facilities. Examples of a proposed Custom UDP Aggregation include

hydroelectric units operating on a common watershed (but having multiple different interconnection points), or geothermal units fed from a common geothermal steam supply.

UAP 2 SUBMITTAL OF A REQUEST FOR UDP AGGREGATION

Requests for UDP Aggregation are submitted to the ISO and must include the following documentation:

(1) A completed UDP Aggregation Request form, which is available for downloading on the ISO website;

(2) A simplified electrical one-line diagram, which illustrates each resource, the connection of the resources to each other and to the ISO Control Area Grid;

(3) For Custom UDP Aggregations, a detailed description that explains physical operating interrelationships between the units, or, if there are no interrelationships, how the units are compatible and why an aggregation of these units for the purpose of calculating uninstructed deviation penalties is reasonable.

UAP 3 ISO REVIEW OF A UDP AGGREGATION REQUEST

Upon receipt of a completed request form and accompanying attachments, the ISO shall review the request according to the criteria outlined herein. For Basic UDP Aggregations, the ISO shall undertake its best efforts to review and approve or reject it within three weeks of receipt. Review of a request for a Custom UDP Aggregation may take longer in some cases, depending on the complexity of the proposed aggregation. If the ISO anticipates that it will take more than three weeks to process a request, the ISO shall inform the entity requesting the UDP Aggregation of the estimated processing time for the request.

UAP 3.1 Criteria for Reviewing a Request

UAP 3.1.1 Scheduling Coordinator and Interconnection Point

Uninstructed Deviations may be aggregated for resources that are:

(1) Represented by the same Scheduling Coordinator and

(2) Connected to the same ISO Controlled Grid bus and voltage level.

The ISO will consider, on a case-by-case basis, requests to aggregate Uninstructed Deviations among resources represented by the same Scheduling Coordinator but not sharing a common ISO Controlled Grid bus and voltage level. In particular, the ISO will consider whether the request concerns resources

related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; whether the Energy production from one resource necessarily causes Energy production from other resource(s); and whether the operational arrangement of resources determines the overall physical efficiency of the combined output of all of the resources.

UAP 3.1.2 Additional Criteria

Additional eligibility criteria for a UDP Aggregation are as follows:

(1) Only Generating Units shall be eligible for UDP Aggregation. As a general rule, pump-generating Units (or a Physical Scheduling Plant [PSP] containing a pump-generating Unit) cannot be part of a UDP Aggregation. However, it is possible that generating Units could form a UDP Aggregation comprised entirely of pump-generating Units whose operation is uniform, that is, Units all operating in either Generation mode or all in pump mode, but never mixed.

(2) UDP Aggregations cannot include any of the following:

(a) Load;
(b) Condition 2 Reliability Must Run (RMR) Units;
(c) Participating Intermittent Resources;
(d) Generating Units less than 5 MW; or
(e) Generating Units that span active or inactive congestion zones.

(3) The resources must have ISO direct telemetry and must be fully compliant with the ISO's direct telemetry standards.

(4) The Generating Units must exhibit the same effectiveness factors (factors within +/-10%) for managing inter- and -intra-zonal constraints, under "normal/all elements in service" conditions, as well as during most local transmission outages.

(5) Custom UDP Aggregations involving units not directly connecting to the ISO Controlled Grid must recognize the transfer limits and status of the intermediate local facilities.

UAP 3.1.3 Approval of a Request

If a UDP Aggregation request is approved, the ISO shall create a new unique Resource ID, which reflects the identity or location of the units and stipulates the UDP Aggregation, but which cannot be used for scheduling purposes. The ISO shall inform the Scheduling Coordinator of the approval and ask the Scheduling Coordinator to confirm the desired start date of the UDP Aggregation. When that

confirmation has been received, the new aggregation will be entered into the ISO systems. Unless otherwise agreed to by the Scheduling Coordinator and the ISO, the UDP Aggregation will become effective on the first day of the month following approval. The Units in an approved UDP Aggregation are obligated to follow their individual schedules and instructions at all times.

UAP 3.1.4 Rejection of a Request

If the ISO determines that the proposed UDP Aggregation is likely to impact grid reliability or the reliability of transmission systems or equipment of intermediate entities between the relevant resources and the ISO grid, the request will be rejected. If the ISO rejects a request, the ISO shall inform the Scheduling Coordinator, and forward to it the reason for the rejection. The ISO may suggest alternative solutions if it has adequate time and data. The Scheduling Coordinator may choose to resubmit based on the ISO's recommendations, or to close the request.

UAP 4 MODIFICATIONS TO AN EXISTING UDP AGGREGATION

UAP.4.1 Temporary Restriction by the ISO

An approved UDP Aggregation shall be considered active until otherwise requested by the Scheduling Coordinator. However, the ISO may temporarily restrict the schedules of aggregated Units based upon changes in system conditions, operating constraints, and other relevant factors as needed to ensure ISO Controlled Grid reliability.

UAP 4.2 Permanent Suspension by the ISO

The ISO may permanently suspend previously approved UDP Aggregations based upon permanent or long-term changes in the ISO grid or other relevant factors that alter the effect of the UDP Aggregation upon the ISO Controlled Grid and/or transmission systems or equipment of intermediate entities.

The ISO shall write a report that explains the reason for the suspension and that specifies the effective date and time. The ISO will forward the report to the Scheduling Coordinator and take steps to have the aggregation removed from the ISO systems.

In the event that a resource in a UDP Aggregation changes from one Scheduling Coordinator to another, the UDP Aggregation will be suspended. In order to reinstate the aggregation, the new Scheduling Coordinator must submit a new request reflecting the change.

UAP 4.3 Request for Modification by a Scheduling Coordinator

A Scheduling Coordinator may request a modification to an existing aggregation up to once per calendar month. A request for modification will follow the same procedures as a new request.

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, 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.~~

5.11.6.1.1 Eligibility

Units from Must-Offer Generators that incur Minimum Load Costs during Self-Commitment Periods or during hours for which the ISO has granted to them a waiver shall not be eligible to recover such costs for such hours. When a Must-Offer Generator is awarded Ancillary Services in the Hour-Ahead market or has a Final Hour-Ahead Schedule, the Must-Offer Generator shall not be eligible to recover Minimum Load Costs for any such hours within a Waiver Denial Period. When, on a 10-minute Settlement Interval basis, a Must-Offer Generator generating at Minimum Load in compliance with the Must-Offer Obligation, produces a quantity of Energy that varies by more than the Tolerance Band, the Must-Offer Generator shall not be eligible to recover Minimum Load Costs for any such Settlement Intervals during hours within a Waiver Denial Period. When, on a Settlement Interval basis, a Must-Offer Generator's resource ~~generating~~ produces a quantity of Energy ~~at~~ above Minimum Load due to ~~in compliance with~~ an ISO Dispatch Instruction, ~~produces a quantity of Energy that varies from the total expected Energy output by more than the Tolerance Band,~~ the Must-Offer Generator shall ~~not be eligible to~~ recover ~~either of~~ its Minimum Load Costs ~~or~~ and its bid costs, as set forth in Section 11.2.4.1.1.1, for any such Settlement Intervals during hours within a Waiver Denial Period, irrespective of deviations outside of its Tolerance Band. Subject to the foregoing eligibility restrictions set forth in this section, the ISO shall guarantee recovery of the Minimum Load Costs of an otherwise eligible Must-Offer Generator for each Settlement Interval during hours within a Waiver Denial Period as follows: (1) First, ISO will pre-dispatch for Real-time the Minimum Load Energy from Must-Offer Generators that have been denied waivers for each hour within a Waiver Denial Period; (2) This Minimum Load Energy will be accounted as Instructed Imbalance Energy for each Settlement Interval within the relevant hour and be settled at the Resource-Specific Settlement Interval Ex Post price; (3) To the extent the Instructed Imbalance Energy payments are not sufficient to cover the generator's Minimum Load Cost for the hour as defined in Section 5.11.6.1.2 of this Tariff, the generator will also receive an uplift payment for its Minimum Load Cost Compensation for the relevant eligible Settlement Intervals of hours during the Waiver Denial Period that the generating unit runs at Minimum Load in compliance with the Must-Offer Obligation; and (4) To the extent the Generator is dispatched for Real-time Imbalance Energy above its minimum load for any Dispatch Interval within an hour during the Waiver Denial Period, the Generator will be eligible for Bid Cost Recovery, as set forth in Section 11.2.4.1.1.1 subject to performance within its relevant Tolerance Band.

* * *

7.4.1 Obligation to Provide for Transmission Losses.

Each Scheduling Coordinator shall ensure that it schedules sufficient Generation to meet both its Demand and Transmission Losses responsibilities as determined in accordance with this Section 7.4. Scheduling Coordinators for Generators, System Units and System Resources are responsible for their respective proportion of transmission losses as determined in accordance with Section 7.4.2. For each

Final Hour-Ahead Schedule, each Scheduling Coordinator representing Generators or System Units shall elect through the flag described in SBP Section 2.1.1 to either: 1) generate sufficient additional energy to meet its respective transmission losses or 2) be financially responsible for its respective transmission loss obligation based on the Imbalance Energy procured on its behalf by the ISO. In the ISO Imbalance Energy Market, all Scheduling Coordinators for Generators, ~~and~~ System Units, and System Resources must be financially responsible for all respective transmission losses associated with their respective Imbalance Energy Dispatch Instructions in Real Time, based on the Imbalance Energy procured on their behalf by the ISO. ~~Scheduling Coordinators for System Resources, other than dynamically scheduled System Resources, shall be financially responsible for their respective proportion of transmission losses associated with Final Hour-Ahead schedules.~~ A Scheduling Coordinator for an MSS Operator that has elected to follow Load will be responsible for its transmission loss obligation pursuant to Sections 23.12.1 and 23.16.4.

* * *

11.2.4.1.1.1 Bid Cost Recovery for Generating Units, System Units and Curtailable Load.

The ISO shall determine, for each Trading Day, for each Generating Unit, System Unit and Curtailable Load, Dispatched in the Real-Time Market pursuant to Section 2.5.22, whether there exists a surplus or deficit in that resource's recovery of its Energy Bid costs, that are less than or equal to the Maximum Bid Level, through Instructed Imbalance Energy credits, as set forth in Section 11.2.4.1.1. This determination of market revenue surplus or deficit shall be calculated as the difference between: 1) the Instructed Imbalance Energy payment as based on the relevant Resource-Specific Settlement Interval Ex Post Price and 2) the resource's Energy Bid cost for each Settlement Interval. Bid cost recovery payment will be based on Settlement Intervals in which the resource did not: 1) recover its Energy Bid costs, and 2) generated or consumed an amount of Energy equal to its schedule, any Dispatch Instructions and its applicable Tolerance Band. The Tolerance Band requirement will not apply to Must-Offer Generators that produce a quantity of Energy at above minimum load due to an ISO Dispatch Instruction. These Settlement Intervals will be netted against all Settlement Intervals in which the Instructed Imbalance Energy payments to the resource exceeded its Energy Bid costs. The resulting total bid cost recovery payment is then divided equally amongst the same Settlement Intervals to yield a per-Settlement Interval bid cost recovery payment. For non-must offer resources, ~~T~~this per-Settlement Interval bid cost recovery payment shall then be paid to each Settlement Interval in which the resource generated or consumed an amount of Energy equal to its schedule, any Dispatch Instructions and its applicable Tolerance Band. For must-offer resources, this per-Settlement Interval bid cost recovery payment shall be made in each interval the unit was instructed by the ISO to operate above its minimum load, or returning to its minimum load from a prior ISO instruction. Payments for un-recovered bid costs for portions of Energy associated with bids above the Maximum Bid Level will not be netted with other surpluses or deficits and are subject to recall if the such bids above have not been adequately justified pursuant to Section 28.1.2. Energy Bid cost recovery associated with Residual Energy as provided for in Section 2.5.22.6.4 shall be based on the Energy Bids for the previous or next operating hour, whichever the case may be, upon which the Dispatch Instruction was based.

* * * * *

11.2.4.1.2 Penalties for Uninstructed Imbalance Energy

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;

b) The Uninstructed Deviation Penalty will apply to Pre-Dispatched bids from non-dynamically scheduled System Resources identified, when such a Pre-Dispatch Instruction is issued more than 40 minutes prior to the relevant Operating Hour, subject to the following conditions: i) The Uninstructed Deviation Penalty will only apply to the Pre-Dispatched amount of the bid that is declined or not delivered, ii) the Uninstructed Deviation Penalty will not apply to a portion of a Pre-Dispatched bid that is subsequently not delivered at the direction of a Control Area, including the ISO, due to a curtailment of transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the Pre-Dispatch Instruction, iii) the Uninstructed Deviation Penalty will not apply to uninstructed energy resulting from declining subsequent intra-hour Dispatch Instructions. Dynamically scheduled System Resources, to the extent they deviate from their Final Hour-Ahead Schedule plus any real-time Dispatch Instructions, will be subject to the Uninstructed Deviation Penalty;

c) The Uninstructed Deviation Penalty will not apply to Load or Curtailable Demand;

d) [Not Used]

e) The Uninstructed Deviation Penalty will not apply to Regulatory Must-Run Generation or Participating Intermittent Resources that meet the scheduling obligations established in the

Eligible Intermittent Resources Protocol. No other applicable charges will be affected by this exemption. The Uninstructed Deviation Penalty also will not apply to Qualifying Facilities that have not executed a Participating Generator Agreement (PGA), pending resolution of QF-PGA issues at the Commission;

f) For the Scheduling Coordinator of an MSS that has elected to follow the MSS Load and associated transmission losses pursuant to Section 23.12, the Deviation Penalties in Sections 23.12.2.1 and 23.12.2.2 will apply. For the Scheduling Coordinator of an MSS that has not elected to follow the MSS Load, the Uninstructed Deviation Penalties in this Section 11.2.4.1.2 will apply;

g) The Uninstructed Deviation Penalty will apply to Generating Units providing Regulation and dynamically scheduled System Resources providing Regulation to the extent that Uninstructed Deviations from such resources exceed each resource's actual Regulation range plus the applicable Tolerance Band. Resources providing Regulation and generating within their relevant Regulating range (or outside their relevant Regulating range as a direct result of ISO control or instruction) will be deemed to have zero deviations for purposes of the Uninstructed Deviation Penalty.

h) The Uninstructed Deviation Penalty will be calculated and assessed for each resource individually, except that as specified in this Section, Uninstructed Deviations from individual resources may be aggregated. Uninstructed Deviations can be aggravated for resources that: 1) are represented by the same Scheduling Coordinator, 2) are connected to the same ISO Controlled Grid bus and voltage level, and 3) are not Reliability Must Run Condition 2 resources. The ISO will consider, on a case-by-case basis, requests to aggregate Uninstructed Deviations amongst resources represented by the same Scheduling Coordinator based on an ISO review of impact on the ISO Controlled Grid. The ISO may temporarily suspend any aggregation as needed to ensure reliability. The applicable Pmax of aggregated groups of resources will exclude units that are not operating;

i) [Not Used]

j) [Not Used]

k) The Uninstructed Deviation Penalty will not apply when the Zonal Settlement Interval Ex Post Price is negative or zero;

l) The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to 100% of the corresponding Zonal Settlement Interval Ex Post Price. The net effect of the Uninstructed Deviation Penalty and the Settlement for positive Uninstructed Imbalance Energy beyond the Tolerance Band will be that the ISO will not pay for such Energy;

m) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to 50% of the corresponding Zonal Settlement Interval Ex Post Price;

n) The Uninstructed Deviation Penalty will not apply to deviations from Energy delivered as part of a scheduled test so long as the test has been scheduled by the Scheduling Coordinator with the ISO or the ISO has initiated the test for the purposes of validating unit performance;

o) The Uninstructed Deviation Penalty shall ~~will~~ apply to any excess Energy delivered from or any shortfall of Energy not delivered from an Out of Market (OOM) transactions involving a Generating Unit or a System Unit once the ISO and the supplier have agreed upon the time of, duration of, and the amount of Energy to be delivered in the OOM transaction. The Uninstructed Deviation Penalty shall apply to firm OOM transactions with System Resources to the extent the System Resource fails to deliver the agreed-to Energy or over-delivers the agreed-to Energy if that over- or under-delivery was due to action taken by or not taken by the System Resource and not the result of action taken by a control area operator due to a curtailment of firm transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the Pre-Dispatch Instruction;

p) Generating Units with Uninstructed Imbalance Energy will be exempted from the Uninstructed Deviation Penalty if the Generating Unit was physically incapable of delivering the expected Energy, provided that the Generating Unit had notified the ISO within 30 minutes of the onset of an event that prevents the resource from performing its obligations. A Generating Unit must notify ISO operations staff of its reasons for failing to deliver the expected Energy in accordance

with Section 2.3.3.9.2 and must provide information to the ISO that verifies the reason the resource failed to comply with the Dispatch instruction within 48~~72~~ hours of the operating hour in which the instruction is issued;

q) Adjustments to any Generating Unit, Curtailable Demand and System Resource Final Hour-Ahead Schedules made in accordance with the terms of Existing Transmission Contracts shall not be subject to Uninstructed Deviation Penalties.

r) Any changes made to Schedules prior to the ISO issuing Final Hour-Ahead Schedules shall not be subject to Uninstructed Deviation Penalties.

s) Uninstructed Deviation Penalties shall not be charged to any deviation from a Dispatch Instruction that does not comply with the requirements set forth in the Dispatch Protocol.

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.

Tolerance Band

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Generating Units and System Units for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the relevant Generating Unit's or System Unit's maximum output (Pmax), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period.

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Participating Loads for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the applicable Final Hour-Ahead Schedule or ISO Dispatch amount divided by number of Settlement Intervals per Settlement Period.

The Tolerance Band shall not be applied to System Resources.

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 10 segments defined by a set of 1 to 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 ramp rate set forth in the Master File as the ramp rate for that unit 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 2.1.1 Uninstructed Imbalance Energy Charges on Scheduling Coordinators

Uninstructed Imbalance Energy attributable to each Load Take-Out Point, Generating Unit, System Unit, or System Resource for which a Scheduling Coordinator has a Final Hour-Ahead Schedule or Metered Quantity, for each Settlement Interval shall be deemed to be sold or purchased, as the case may be, by the ISO and charges or payments for Uninstructed Imbalance Energy shall be settled by debiting or crediting, as the case may be, the Scheduling Coordinator with an amount for each Settlement Interval.

Uninstructed Imbalance Energy within a Settlement Interval shall be settled in two tiers that are defined in relation to the expected Energy associated with the Final Hour-Ahead Schedule, if any, and the Dispatch Instruction as follows:

1) Deviations from the expected Energy associated with a Dispatch Instruction resulting in: 1) under delivery of Instructed Imbalance Energy that is also equal to or greater than the Final Hour-Ahead Schedule, or 2) over delivery of Instructed Imbalance Energy that is also less than or equal to the Final Hour-Ahead Schedule constitutes tier 1 Uninstructed Imbalance Energy that shall be settled at a Resource-Specific Settlement Interval Ex Post Price as described in Appendix D 2.4.

2) Deviations from the expected Energy associated with a Dispatch Instruction resulting in: 1) over delivery of Instructed Imbalance Energy that is also greater than the Final Hour-Ahead Schedule, or 2) under delivery of Instructed Imbalance Energy that is also less than the Final Hour-Ahead Schedule constitutes tier 2 Uninstructed Imbalance Energy and shall be settled at the Zonal Settlement Interval Ex Post Price as described in Appendix D 2.5.

Imbalance Energy is calculated as follows:

Generator Calculation for ISO Metered Entities:

$$IE_{i,h,o} = ME_{i,h,o} - SE_{i,h,o}$$

Load Calculation:

$$IE_{i,h,o} = SE_{i,h,o} - ME_{i,h,o}$$

System Resource Calculation:

$$IE_{i,h,o} = \sum_{1}^{k}\sum_{1}^{v} REAL\_TIME\_FLOW_{i,h,o,k,v} - SE_{i,h,o}$$

where,

$$SE_{i,h,o} = \frac{HAfin_{i,h}}{6}$$

$ME_{i,h,o}$ actual meter data for each resource *i* of each Settlement Interval *o* for each hour *h*.

Uninstructed Imbalance Energy is calculated as follows:

$$UIE_{i,h,o} = E_{i,h,o} - IIE\_REG_{i,h,o}$$

where:

$$E_{i,h,o} = IE_{i,h,o} - \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} - \sum_{1}^{k} IIE\_ML_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} - \sum_{1}^{k} RE\_STANDARD_{i,h,o,k} - \sum_{1}^{k} RED_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} - \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} - \sum_{1}^{k} IIE\_RERATE_{i,h,o,k}$$

$IIE\_REG_{i,h,o}$ is the Regulating Energy for resource *i* during Settlement Interval *o* in hour *h*

$$\text{~~UIE\_1~~}_{i,h,o} = \begin{cases} min\left(UIE_{i,h,o}, -min\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k}\right)\right) & \therefore UIE_{i,h,o} \geq 0 \\ max\left(UIE_{i,h,o}, -max\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k}\right)\right) & \therefore UIE_{i,h,o} < 0 \end{cases}$$

$$UIE\_1_{i,h,o} = \begin{cases} \min\left(UIE_{i,h,o}, -\min\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} + \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k}\right)\right) & \therefore UIE_{i,h,o} \geq 0 \\ \max\left(UIE_{i,h,o}, -\max\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE\_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE\_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{L} OOS\_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS\_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} + \sum_{1}^{k} IIE\_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE\_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k}\right)\right) & \therefore UIE_{i,h,o} < 0 \end{cases}$$

$$UIE\_2_{i,h,o} = UIE_{i,h,o} - UIE\_1_{i,h,o}$$

$$UIEC_{i,h,o} = \left(-1 * UIE\_1_{i,h,o} * STLMT\_PRICE_{i,h,o}\right) + \left(-1 * UIE\_2_{i,h,o} * ZONAL\_EX\_POST\_PRICE_{j,h,o}\right)$$

* * *

D 2.6.1 Tolerance Band and Performance Check

The ISO shall determine the Tolerance Band for each Settlement Interval *o* for PGA resources based on the data from the Master File as follows:

$$TOLERANCE\_BAND_{i,h,o} = \pm \max\left(FIX\_LIM\ , TOL\_PERCENT\ * P\max_i\right) / 6$$

where,
FIX_LIM is a fixed MW limit and is initially equal to 5 MW.
TOL_PERCENT is a fixed percentage and is initially equal to 3%.
$Pmax_i$ is the maximum operating capacity in MW of resource *i* specified in the Master File.

The ISO shall determine the Tolerance Band for each Settlement Interval o for PLA resources as follows:

$$TOLERANCE\_BAND_{i,h,o} = \pm\ max\left(FIX\_LIM,\ TOL\_PERCENT * HAfin_{i,h}\right) / 6$$

where $HAfin_{i,h}$ *is the* Final Hour Ahead Energy Schedule.

Resources must operate within their relevant Tolerance Band in order to receive any above-Ex Post price payments. The ISO shall determine the performance status of the resource for each Settlement Interval o. A resource shall have met its performance requirement if its UIEi,h,o is within its relevant Tolerance Band. A resource meeting its performance requirement in Settlement Interval o will have a PERF_STATi,h,o = 1. A resource that has not met its performance requirement in Settlement Interval o will have a PERF_STATi,h,o = 0.

Must offer resources that produce a quantity of Energy above Minimum Load due to an ISO Dispatch Instruction are not subject to the Tolerance Band requirement for purposes of receiving either Minimum Load Cost Compensation, as defined in section 5.11.6.1.1, or Bid Cost Recovery, as set forth in section 11.2.4.1.1.1. Accordingly, the variable $PERF\_STAT_{i,h,o}$ for eligible must offer resources, as defined in section 5.11.6.1.1, shall be set to 1, irrespective of deviations outside of the Tolerance Band.

System Resources do not have a Tolerance Band. Non- Participating Load Agreement (PLA) load resources are not subject to the performance requirement.

* * *

D 2.7 Transmission Loss Obligation

The transmission loss obligation charge shall be determined as follows:
For Generators:

$$TL_{i,h,o} = (ME_{i,h,o} - \sum_{1}^{k} HE\_LOSS_{i,h,o,k}) * (1 - GMMa_h)$$

For System Resources, the transmission loss obligation shall be determined as follows:

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

~~For System Resources, self-provision of transmission losses applies only to Dynamically Scheduled System Resources. Otherwise,~~

~~$\sum_{1}^{k} IIE\_LOSS_{i,h,o,k}$ shall be assumed to equal 0 for all other System Resource schedules.~~

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 2.9 Minimum Load Cost Compensation

The ISO shall calculate a Must-Offer Generator's Minimum Load Cost Compensation (MLCC), pursuant to section 5.11.6.1.1 of the ISO Tariff, as the market revenue deficit below its Minimum Load Cost as follows:

$$MLCC_{i,h,o} = PERF\_STAT_{i,h,o} * [\, min\,(0, MR\_ML_{i,h,o} - MLC_{i,h,o})]$$

where:

The market revenue from Minimum Load Energy is indicated as

$$MR\_ML_{i,h,o} = \sum_{1}^{k} IIE\_ML_{i,h,o,k} * STLMT\_PRICE_{i,h,o}$$

$MLC_{i,h,o}$ is the Minimum Load Cost for each resource *i* during Settlement Interval *o* of hour *h*, as defined in section 5.11.6.1.2 of the ISO Tariff.

The ISO will calculate the Tolerance Band $PERF\_STAT_{i,h,o}$ for each resource *i* as defined in Section 2.6.1 of this Appendix D of SABP.

* * *

D 3.91 REAL_TIME_FLOW$_{i,h,o,k,v}$ – MW*h*

The real-time actual flow for intertie resource *i* during Dispatch Interval *k* during Settlement Interval *o* of Settlement Period *h* for Real Time Flow Type index v.

Real Time Flow Type index *v* must be one of the following Energy types: FIRM, NFIRM, SUPP, WHEEL, DYN, ESPN, ENSPN, OOM, ERPLC.

* * *

UDP AGGREGATION PROTOCOL
Table of Contents

UAP 2 SUBMITTAL OF A REQUEST FOR UDP AGGREGATION

Requests for UDP Aggregation are submitted to the ISO and must include the following documentation:

(1) A completed UDP Aggregation Request form, which is available for downloading on the ISO website;

(2) A simplified electrical one-line diagram, which illustrates each resource, the connection of the resources to each other and to the ISO Control Area Grid;

(3) For Custom UDP Aggregations, a detailed description that explains physical operating interrelationships between the units, or, if there are no interrelationships, how the units are compatible and why an aggregation of these units for the purpose of calculating uninstructed deviation penalties is reasonable.

UAP 3 ISO REVIEW OF A UDP AGGREGATION REQUEST

Upon receipt of a completed request form and accompanying attachments, the ISO shall review the request according to the criteria outlined herein. For Basic UDP Aggregations, the ISO shall undertake its best efforts to review and approve or reject it within three weeks of receipt. Review of a request for a Custom UDP Aggregation may take longer in some cases, depending on the complexity of the proposed aggregation. If the ISO anticipates that it will take more than three weeks to process a request, the ISO shall inform the entity requesting the UDP Aggregation of the estimated processing time for the request.

UAP 3.1 Criteria for Reviewing a Request

UAP 3.1.1 Scheduling Coordinator and Interconnection Point

Uninstructed Deviations may be aggregated for resources that are:

(1) Represented by the same Scheduling Coordinator and

(2) Connected to the same ISO Controlled Grid bus and voltage level.

The ISO will consider, on a case-by-case basis, requests to aggregate Uninstructed Deviations among resources represented by the same Scheduling Coordinator but not sharing a common ISO Controlled Grid bus and voltage level. In particular, the ISO will consider whether the request concerns resources related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; whether the Energy production from one resource necessarily causes Energy production from other resource(s); and whether the operational arrangement of resources determines the overall physical efficiency of the combined output of all of the resources.

UAP 3.1.2 Additional Criteria

Additional eligibility criteria for a UDP Aggregation are as follows:

(1) Only Generating Units shall be eligible for UDP Aggregation. As a general rule, pump-generating Units (or a Physical Scheduling Plant [PSP] containing a pump-generating Unit) cannot be part of a UDP Aggregation. However, it is possible that generating Units could form a UDP Aggregation comprised entirely of pump-generating Units whose operation is uniform, that is, Units all operating in either Generation mode or all in pump mode, but never mixed.

(2) UDP Aggregations cannot include any of the following:

(a) Load;

(b) Condition 2 Reliability Must Run (RMR) Units;

(c) Participating Intermittent Resources;

(d) Generating Units less than 5 MW; or

(e) Generating Units that span active or inactive congestion zones.

(3) The resources must have ISO direct telemetry and must be fully compliant with the ISO's direct telemetry standards.

(4) The Generating Units must exhibit the same effectiveness factors (factors within +/-10%) for managing inter- and -intra-zonal constraints, under "normal/all elements in service" conditions, as well as during most local transmission outages.

(5) Custom UDP Aggregations involving units not directly connecting to the ISO Controlled Grid must recognize the transfer limits and status of the intermediate local facilities.

UAP 3.1.3 Approval of a Request

If a UDP Aggregation request is approved, the ISO shall create a new unique Resource ID, which reflects the identity or location of the units and stipulates the UDP Aggregation, but which cannot be used for scheduling purposes. The ISO shall inform the Scheduling Coordinator of the approval and ask the Scheduling Coordinator to confirm the desired start date of the UDP Aggregation. When that confirmation has been received, the new aggregation will be entered into the ISO systems. Unless otherwise agreed to by the Scheduling Coordinator and the ISO, the UDP Aggregation will become effective on the first day of the month following approval. The Units in an approved UDP Aggregation are obligated to follow their individual schedules and instructions at all times.

UAP 3.1.4 Rejection of a Request

If the ISO determines that the proposed UDP Aggregation is likely to impact grid reliability or the reliability of transmission systems or equipment of intermediate entities between the relevant resources and the ISO grid, the request will be rejected. If the ISO rejects a request, the ISO shall inform the Scheduling Coordinator, and forward to it the reason for the rejection. The ISO may suggest alternative solutions if it has adequate time and data. The Scheduling Coordinator may choose to resubmit based on the ISO's recommendations, or to close the request.

UAP 4 MODIFICATIONS TO AN EXISTING UDP AGGREGATION

UAP.4.1 Temporary Restriction by the ISO

An approved UDP Aggregation shall be considered active until otherwise requested by the Scheduling Coordinator. However, the ISO may temporarily restrict the schedules of aggregated Units based upon changes in system conditions, operating constraints, and other relevant factors as needed to ensure ISO Controlled Grid reliability.

UAP 4.2 Permanent Suspension by the ISO

The ISO may permanently suspend previously approved UDP Aggregations based upon permanent or long-term changes in the ISO grid or other relevant factors that alter the effect of the UDP Aggregation upon the ISO Controlled Grid and/or transmission systems or equipment of intermediate entities.

The ISO shall write a report that explains the reason for the suspension and that specifies the effective date and time. The ISO will forward the report to the Scheduling Coordinator and take steps to have the aggregation removed from the ISO systems.

In the event that a resource in a UDP Aggregation changes from one Scheduling Coordinator to another, the UDP Aggregation will be suspended. In order to reinstate the aggregation, the new Scheduling Coordinator must submit a new request reflecting the change.

UAP 4.3 Request for Modification by a Scheduling Coordinator

A Scheduling Coordinator may request a modification to an existing aggregation up to once per calendar month. A request for modification will follow the same procedures as a new request.

ATTACHMENT C

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 Nos. ER03-1046-____**

Notice of Filing

[ ]

Take notice that on November 21, 2003, the California Independent System Operator Corporation (ISO) submitted a compliance filing in the above-captioned proceeding. The filing is in response to the Commission's order Concerning Amendment No. 54 to the ISO Tariff, 105 FERC ¶ 61,091. The ISO states that the compliance filing has been served on all parties to this proceeding.

Any person desiring to be heard to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 or 214 of the Commission's Rules of Practice and Procedure (18 C.F.R. §§ 385.211, 385.214). Protests filed with the Commission will be considered 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 any other person designated on the official service list. Copies of this filing are on file with the Commission and are available for public inspection. This filing may also be viewed on the Internet at **http://www.ferc.gov** using the "FERRIS" link. Comments, protests and interventions may be filed electronically via the Internet in lieu of paper. See 18 C.F.R. § 385.2001(a)(1)(iii) and the instructions on the Commission's Internet site under the "e-Filing" link.

Comment Date: _____

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing documents upon each person designated on the official service list for the captioned proceeding, in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, CA, on this 21st day of November, 2003.

Anthony J. Ivancovich BRM

Anthony J. Ivancovich