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September 2, 2004

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
Supplement to Compliance Filing
Docket No. ER04-835-___**

Dear Secretary Salas:

The California Independent System Operator Corporation ("ISO")¹ respectfully submits six copies of this supplementary filing in compliance with the Commission's July 8, 2004 "Order on Tariff Amendment No. 60," issued in the captioned docket and concerning Amendment No. 60 to the ISO Tariff, 108 FERC ¶ 61,022 ("Amendment No. 60 Order"). This filing supplements the compliance filing the ISO submitted in the captioned docket on August 10, 2004 ("Amendment No. 60 Compliance Filing").

In the Amendment No. 60 Order, *inter alia*, the Commission required the ISO to finalize and file its Operating Procedure M-432 related to the ISO's capacity procurement target. Amendment No. 60 Order at PP 103, 106. The ISO, in the Amendment No. 60 Compliance Filing, stated that it was currently revising the relevant portion of the Operating Procedure, Operating Procedure M-432C. The ISO requested to be permitted to file revised Operating Procedure M-432C after that procedure had been finalized. Transmittal Letter for Amendment No. 60 Compliance Filing at 5-6. The ISO hereby provides the revised Operating Procedure.

Attachment A to the present filing contains revised Operating Procedure M-432C. Attachment B to this filing contains a form notice of filing, suitable for

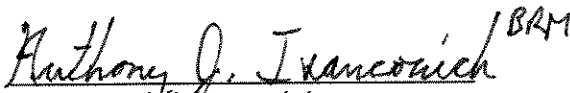
¹ Capitalized terms not otherwise defined herein are used in the sense given in the Master Definitions Supplement, Appendix A to the ISO Tariff.

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publication in the Federal Register, along with a computer diskette containing the notice.

Two additional copies of this compliance filing are enclosed to be date-stamped and returned to our messenger. The ISO is serving copies of this filing on all parties on the official service list for the captioned docket. In addition, the ISO is posting this filing on the ISO Home Page. If there are questions concerning the filing, please contact the undersigned.

Respectfully submitted,

 ^{BAM}

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ATTACHMENT A


| | | | |
|--|---|---|---------|
|  CALIFORNIA ISO <small>California Independent System Operator</small> | Operating Procedure Attachment C | Procedure No. | M-432C |
| | | Version No. | 1.0 |
| | | Effective Date | 9/03/04 |
| Must-Offer Unit Commitment | | Distribution Restriction: None | |

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1. Must-Offer Unit Commitment Process

Must-Offer Waivers Description


The following describes the CAISO Must-Offer process:

| Description |
|---|
| <ul style="list-style-type: none"> • The CAISO uses a Security Constrained Unit Commitment (SCUC) application to determine must-offer waivers to minimize start-up and minimum load costs once reliability needs have been met. The timeline of this must-offer waiver process is outlined in Section 2. |
| <ul style="list-style-type: none"> • The SCUC will not commit must-offer units for local reliability reasons or for <u>Transmission System Reliability</u>. Units needed for local reliability requirements will be committed using the applicable area operating procedure. |
| <ul style="list-style-type: none"> • SCUC only commits units for the following reasons: <ul style="list-style-type: none"> ○ <u>Forecasted Energy Demand</u> ○ <u>Congestion Management</u> (Inter-zonal) |

Forecasted Energy Demand

Day-ahead Market schedules entered by the SC's do not always support the demands forecast by the CAISO. If the resources included in load schedules are determined insufficient to meet projected Control Area demand requirements for the next operating day then the CAISO will commit additional capacity from must-offer resources in the Day-ahead timeframe, as outlined in Section 2.

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1. Must-Offer Unit Commitment Process, Continued


Congestion Management

Must-Offer Units may be committed for congestion management by utilizing the following guidance:

| Step | CAISO Day Ahead Desk Actions | | | | | |
|--|---|------------------------|-----------|--|--|--|
| 1 | <table border="1"> <tr> <th style="text-align: center;">Prior to Committing...</th> <th style="text-align: center;">Verify...</th> </tr> <tr> <td>Must-Offer units for congestion management,</td> <td> a) There are insufficient market units scheduled that can mitigate the congestion; b) All RMR unit commitments for local area reliability have been utilized. </td> </tr> </table> | Prior to Committing... | Verify... | Must-Offer units for congestion management, | a) There are insufficient market units scheduled that can mitigate the congestion; b) All RMR unit commitments for local area reliability have been utilized. | |
| Prior to Committing... | Verify... | | | | | |
| Must-Offer units for congestion management, | a) There are insufficient market units scheduled that can mitigate the congestion; b) All RMR unit commitments for local area reliability have been utilized. | | | | | |
| 2 | <table border="1"> <tr> <th style="text-align: center;">Commit...</th> <th style="text-align: center;">When...</th> </tr> <tr> <td>Must-Offer units for congestion management,</td> <td>A forced or scheduled transmission line or substation equipment outage requires additional generation for reliability.</td> </tr> </table> <p>Note: The SCUC will determine which generating units must be in service to ensure there is sufficient transfer capability between Zones to deliver Energy from one Zone to another for the next day. These determinations are based on submitted Day-ahead schedules, recent operating history, and unit operating characteristics (e.g., minimum run and shutdown times).</p> | Commit... | When... | Must-Offer units for congestion management, | A forced or scheduled transmission line or substation equipment outage requires additional generation for reliability. | |
| Commit... | When... | | | | | |
| Must-Offer units for congestion management, | A forced or scheduled transmission line or substation equipment outage requires additional generation for reliability. | | | | | |
| 3 | <table border="1"> <tr> <th style="text-align: center;">IF...</th> <th style="text-align: center;">THEN...</th> </tr> <tr> <td>Additional units (beyond those determined by SCUC) must be committed to manage congestion,</td> <td>Determine those units using applicable area operating procedures.</td> </tr> </table> | IF... | THEN... | Additional units (beyond those determined by SCUC) must be committed to manage congestion, | Determine those units using applicable area operating procedures. | |
| IF... | THEN... | | | | | |
| Additional units (beyond those determined by SCUC) must be committed to manage congestion, | Determine those units using applicable area operating procedures. | | | | | |

Transmission System Reliability

Must-Offer Units may be committed for transmission system security when the CAISO expects that transmission lines may be lost due to uncontrollable factors, including extreme storm conditions or forest fires crossing transmission rights-of-way. The CAISO requires this additional on-line generation to relieve overloads or to maintain stability should those lines be lost.

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2. Process for Committing Generating Units through the Must-Offer Obligations for Control Area Energy Requirements

After the Day-Ahead Preferred Market

Following the Day-ahead Preferred market run, the CAISO Day-ahead Desk performs the following actions:

| Step | Day-ahead Desk Action |
|------|--|
| 1 | Run the SCUC application to determine additional must-offer commitments for energy. |


Section 2 continued on next page

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**SCUC
Determines
Requirements**

The SCUC determines these requirements based on the following calculation of net short energy for all 24 hours:

| Net Short Description | |
|---|---|
| Net Short = (Demand Forecast) + (Capacity Margin) – (Average HA Net Scheduled Interchange)– (Average HA Generation from non-Must Offer units) – (Self Scheduled Must Offer Capacity) – (Must Offer Capacity Required for Local Reliability) | |
| Calculation Component | Description |
| <ul style="list-style-type: none"> • Demand Forecast = | Total Day-ahead Load Forecast |
| <ul style="list-style-type: none"> • Capacity Margin = | Forecasted Operating Reserve Requirement |
| <ul style="list-style-type: none"> • Average Hour-ahead Generation and Net Scheduled Interchange = | Values derived from recent historical Hour-ahead values. These historical averages will be representative of the operating day; such as choosing the last three Saturdays for the weekend commitment schedule |
| <ul style="list-style-type: none"> • Self Scheduled Must Offer Capacity = | All capacity from must-offer units that have either energy or ancillary service awards in the Day-ahead preferred market is subtracted, as these units have already self-committed |
| <ul style="list-style-type: none"> • Must Offer Capacity Required for Local Reliability = | All capacity from must-offer units that have been forced on to meet local reliability requirements is subtracted from the Net Short calculation |
| <p>The Net Short is met by committing must-offer units to minimize the total expected start-up and minimum load costs of those units. Only must-offer units that are not self-committed are used to satisfy the Net Short. Only long start units are committed in the Day-ahead timeframe, as fast start units can be committed in Real Time as needed.</p> | |


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Resource Constraints and Costs The specific resource constraints and costs that the SCUC application considers include, but are not limited to:

| Step | Description |
|------|---|
| 1 | Start Up Cost, based on both startup fuel and auxiliary power and the daily gas price. Auxiliary power is converted to an equivalent fuel use by dividing total startup fuel by minimum load MW. This value is multiplied by the total Auxiliary power and by the daily gas price. This cost is added to the startup fuel cost. |
| 2 | Minimum Load Cost, based on the incremental heat rate curve and the daily gas price. |
| 3 | Minimum and Maximum Operating Limits. |
| 4 | Minimum On Time |
| 5 | Minimum Off Time |
| 6 | Maximum Daily Startups |
| 7 | Notification Time (Startup Time) |
| 8 | Ramp Rate (between 0 MW and maximum operating limit) |

Accepting or Denying Waiver Requests The CAISO Day-Ahead Desk performs the following actions:


| Step | CAISO Day Ahead Desk Actions | |
|--|--|---|
| 1 | IF... | THEN... |
| | Sufficient resources have been scheduled to meet the CAISO Forecast Load for all hours of the next operating day, | Accept all must-offer Waiver requests, And extend current waivers for the next operating day. |
| | Sufficient resources have <u>NOT</u> been scheduled to meet the CAISO Forecast Load for all hours of the next operating day, | Run SCUC to determine which additional must-offer resources shall be committed, And deny waiver requests for these resources |
| <p>NOTE: CAISO Grid Operators shall use the SCUC commitment results as the basis for granting, denying, and rescinding waivers to each Must Offer unit not self-committed during the SCUC time horizon.</p> | | |

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MOW Timeline The following is the timeline for the Must-Offer Waiver Requests process:


| Time (Day before operating day) | MOW Process Description |
|--|--|
| 10:00 AM | <ul style="list-style-type: none"> • Deadline for submitting Must-Offer waiver request, which is the current deadline for submitting initial Day-ahead preferred schedules. • These waiver requests are received and logged in SLIC by the Generation Dispatcher and communicated to the Shift Manager. |
| 11:00 AM | <ul style="list-style-type: none"> • The Day-ahead GRC runs the Day-ahead preferred market iteration, and publishes advisory Day-ahead schedules. • The Day-ahead revised preferred market is opened, and the Day-ahead GRC runs the SCUC application: <ul style="list-style-type: none"> ○ Generates the must-offer commitment list, ○ Identifies the hourly unit commitment and start up and minimum load costs for each resource. ○ Identifies Must-Offer resources that are not self-committed, but committed by the CAISO due to local transmission congestion. ○ The SCUC application first attempts to meet the system net short requirement <i>without these resources explicitly committed</i>. ○ If the SCUC does not commit the units needed for local reliability requirements for system needs, then the SCUC application is run a second time with these resources forced on for local transmission congestion. This ensures that the capacity from units needed to meet local reliability requirements is considered in the net short calculation. ○ The SCUC lists resources in increasing order by total cost per MWh. |
| 11:30 AM | <ul style="list-style-type: none"> • The CAISO Shift Manager uses this list to act on waiver requests, and instructs the Generation Dispatcher to notify Scheduling Coordinators by phone whether waivers have been granted or denied. |
| <12:00 PM | <ul style="list-style-type: none"> • The SCs may submit Ancillary Service bids, or withdraw them if their request for a waiver was granted and they want to shut down the unit, into the Day-ahead revised preferred market. |

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MOW Timeline (continued)


| <u>Time (Day before operating day)</u> | <u>MOW Process Description</u> |
|---|---|
| 12:00 PM | The Day-ahead revised preferred market closes. |
| 1:00 PM | Publish final Day-ahead schedules. |
| >1:00 PM | <ul style="list-style-type: none"> ● After the Day-ahead market process, Unit Commitment instructions are manually entered into the Real Time market applications (BEEP) by the Real Time GRC, this identifies: <ul style="list-style-type: none"> ○ The resource, ○ The start and end time of the commitment period, ○ The reason for commitment (either system, zonal, or local). ● This information is then made available to post processing applications for cost allocation and to settlements. |

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**Out-of-Market
Capacity
Calculation**

Out-of-market capacity is not considered in the Net Short calculation; Must Offer resources are not committed for this capacity. This out of market capacity consists of unloaded Hydro capacity, unloaded Municipal capacity, and QF Wind:

| | |
|--------------------|---|
| Hydro | <ul style="list-style-type: none"> Scheduled hydro generation is calculated in the Average HA Generation from non-Must-Offer units; however, the Unloaded Capacity portion of Total Unloaded Capacity that will be counted as available is only that portion that is being utilized as Ancillary Service. Hydro resources providing A/S are included in the Capacity Margin value in the Net Short Calculation. The remaining balance of unloaded hydro capacity is not considered. The CAISO assumes that owners of hydro generation, especially run-of-the-river hydro, will maximize the value of the water they have available on a given day by maximizing the use of their hydro resources on that day, and that any unscheduled or un-bid capacity represents capacity without dependable water behind it and is therefore not reliably available. |
| Muni | <ul style="list-style-type: none"> Only the portion of Muni capacity that is being utilized by the CAISO as Ancillary Services factors into the Net Short calculation. Muni resources providing A/S are included in the Capacity Margin value in the Net Short Calculation. |
| QF Wind | <ul style="list-style-type: none"> The historical average level of wind generation is not included in the Average HA Generation from non-Must-Offer units because it is assumed that the wind generation may not be operating at schedule and must be replaced with unloaded thermal capacity if and when wind dissipates. The CAISO will continue to fully discount wind generation capacity until there is a reliable DA wind/energy forecast that the CAISO is willing to risk firm commitment of generation in lieu of wind generation. |

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3. Congestion Management

**SCUC
Application**

The SCUC application will explicitly represent the transmission limits of Path 26 and Path 15. These limits are modeled as net area constraints for the NP15 zone (excluding ZP26) and the SP15 zone. They are the same limits as applied to the Day-ahead markets. Any unit that is committed by SCUC to being on-line for certain hours due to an inter-zonal transmission constraint is explicitly identified.


| Step | CAISO Day Ahead Desk Actions | |
|------|--|---|
| 1 | IF... | THEN... |
| | <ul style="list-style-type: none"> • There is insufficient market generation schedules for the next operating day to mitigate an identified congestion area, <li style="text-align: center;">OR • All RMR Unit commitments have been made in a local area that can mitigate that congestion, <li style="text-align: center;">OR • There is congestion due to a transmission line or station equipment outage that requires generation above that generation scheduled in the market or RMR to mitigate that congestion, | <p>Deny Must-Offer waivers requests, and/or rescind current granted waivers for congestion mitigation purposes as necessary.</p> |

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SCUC Application (continued)

| Step | CAISO Day Ahead Desk Actions | |
|------|--|---|
| 2 | IF... The CAISO must commit units to manage congestion. | THEN... Deny must-offer requests, and/or rescind current must-offer waivers to commit generating units required to successfully mitigate that congestion problem. |
| 3 | NOTE: A Generation requirement for congestion management is determined in concert with Real-Time Operations and the Operations Engineering Group prior to the planned outage or immediately after a congestion problem is identified. | |

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4. Transmission System Reliability

Must-Offer Waivers Request

The following provides a description of issues concerning Must-Offer Waiver requests when there is a transmission system security or reliability situation:

| Step | Description |
|------|---|
| 1 | <ul style="list-style-type: none"> Must-Offer waivers request may be denied and/or current granted waivers might be rescinded for transmission system security and system reliability during times of extreme adverse weather conditions or wildfires that jeopardize the safety and reliability of the ISO Controlled Grid. |
| 2 | <ul style="list-style-type: none"> The ISO will commit Must-Offer units to preserve system reliability and prevent cascading outages to the Interconnection after the loss of a major transmission path during those times. |
| 3 | <ul style="list-style-type: none"> Additional generation is loaded up to reduce loading on transfer paths that are in jeopardy to ensure reliability. |
| 4 | <ul style="list-style-type: none"> The determination of the required capacity margin is done in concert with Real-Time Operations and the Operations Engineering Group. |

ATTACHMENT B

