

March 25, 2003

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

In re: California Independent System Operator Corporation

Docket Nos. EL00-95-063, et al.

Dear Secretary Salas:

The California Independent System Operator Corporation ("ISO") respectfully submits 12 copies of this filing in compliance with the Federal Energy Regulatory Commission ("Commission") data request set forth by letter dated March 10, 2003 from Michael A. Coleman, Director, Division of Tariffs and Market Development-West. The data request was issued pursuant to paragraph 7 of the Commission's October 31, 2002 "Order On Compliance Filing and Compliance Report" in the above-cited docket.

Attached to this letter are the ISO responses to the data request, including copies of relevant documents. The ISO response to Commission data request number four contains resource specific operating information, and accordingly, the ISO requests this response receive privileged treatment as is provided for under the Commissions regulations set forth at 18 CFR Section 388.112. The ISO herein provides six copies with the response to data request four redacted and six confidential copies containing the ISO responses to this data request.

If there are any questions concerning this filing, please contact the undersigned.

Respectfully submitted,

Margaret A. Rostker

Counsel for the California Independent

System Operator Corporation

151 Blue Ravine Road Folsom, CA 95630

(916) 608-7021

# ISO<sup>1</sup> Responses To Commission Staff Data Request March 25, 2003

1. Please provide a detailed explanation of the process used by the ISO to determine which units are subject to, and which are exempt from, the Must-Offer Obligation. Provide all manuals, guidelines, protocols, criteria and other documents (other than the ISO Tariff) used by the ISO in making such determinations. Provide and explain all criteria used to determine the length of time for a unit's exemption.

#### **ISO RESPONSE**

The ISO grants exemptions ("Waivers") to units subject to the Must-Offer Obligation based upon real time and forecasted System Conditions. ISO forecasts are conducted approximately every one-half hour, and are used to make decisions concerning the adequacy of the supply of Supplemental Energy bids in the ISO Real Time Imbalance Energy Market. The forecasts also are used to assess the need for additional Energy over the next several days. For example, the ISO will take into account weather trends (both warming and cooling), holiday and weekend changes in Load Demand, and both planned and Forced Outages of Transmission Facilities and Generating Units.

After the close of the Final Day-Ahead Market, at approximately 1500 on T<sub>-1 Day</sub>, the ISO reviews System Conditions, forecasts, planned Maintenance works, reported Forced Outages and checks Waiver requests to assure instructions are given to any specific Generating Units that must either be on-line or off-line as required by specific Transmission Facility work or other unique System Conditions. The ISO reviews all Generation Schedules and Load forecasts to determine Ancillary Service requirements and begins to procure the applicable Minimum Operating Reserve Criteria.

Using all available information about System Conditions, projected changes and forecasts, the ISO then considers the specific operating characteristics of Generating Units seeking Waivers, including the Minimum Run Time, Minimum Down Time and Start-Up Time. Based upon all factors detailed above, the ISO identifies those specific Generating Units that can be granted Waivers.

Generating Units that are off-line on a Waiver, if needed because the Day-Ahead Market does not provide adequate Generation to meet project Load, or if needed for local reliability and no Reliability Must Run Generating Units will suffice, also will be contacted and given specific orders to return to service by a specific time that takes into account the Generating Unit's Start-Up Time. If

<sup>&</sup>lt;sup>1</sup> Capitalized terms not otherwise defined herein are used in the sense given in the Mast Definitions Supplement, Appendix A to the ISO Tariff.

needed for local reliability, a Generating Unit may have its Waiver revoked out of the usual sequence based upon time off-line.

In the process of revoking Waivers and directing Generating Units to come back on-line under the Must-Offer Obligation, the ISO systematically revokes Waivers in the reverse order, by revoking the most-recently granted Waiver first and then proceeding to the oldest Waivers. The reverse order for revocation of Waivers is done at the request of Market Participant to help assure their most uneconomical, long-start units, once off-line on a Waiver, can remain off-line until such time as the ISO has no alternative but to order on-line such units or until the units are voluntarily started for a bilateral commercial transaction.

In real time, as System Conditions change, and in accordance with a Generating Unit's Minimum Run Time, the ISO will grant additional Waivers to units on-line but no longer needed for grid reliability. Similarly, the ISO will revoke Waivers as needed for reliability, taking into specific Generating Units Minimum Down and Start-Up Times.

All Waivers are open-ended in that the ISO will issue a specific instruction that the unit may go off-line beginning at a specific time but the ISO will not typically bound the Waiver with a specific revocation time. Instead, the ISO will only revoke Waivers as needed and in accordance with the specific Minimum Down and Start-Up Times for a unit.

Data used in the process for granting and revoking Waivers are the ISO SLIC software, Generating Unit operating parameters (Minimum Down Time, etc) as submitted to the ISO by Market Participants and recorded in the ISO Master File and Participating Generator Agreement Schedule 1, ISO forecasts, the Outage Coordination Program Outage Scheduler data base, and appropriate real time information as may be available to the ISO through communications with Market Participants, neighboring control areas and Transmission Owners. The Waiver decision process is set forth in ISO Operating Procedure M-432, which is publicly posted on the ISO web site and a copy of which is attached hereto.

This response prepared by Jack Bellnap, Market Operations, ISO.

# Attachment to Response to Data Request #1



Procedure No.	M-432
Version No.	1.2
Effective Date	12/13/02

# **Must Offer Waivers**

Distribution Restriction: None

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None

### **Must Offer Waivers**

# PURPOSE

Provides the dispatchers with instructions for granting, denying and revoking Waivers from compliance with the Must Offer Obligation to all generating units required by FERC to comply with the Must Offer Obligation. The Must Offer Obligation requires Generating Units with Participating Generator Agreements, non-public utility generating resources in California that either participate in the CAISO's markets or otherwise make use of the transmission grid under the control of the CAISO, with the exception of hydroelectric resources, to offer to the CAISO all of their available capacity in real time during all hours UNLESS the generating unit is:

- (1) Scheduled to run under bilateral agreements, OR
- (2) On a planned or forced outage, OR
- (3) Under Dispatch by the CAISO, OR
- (4) In receipt of an CAISO Waiver from compliance with the Must Offer Obligation.

This Procedure is to be used by CAISO System Dispatchers in Real Time.

### **PROCEDURE**

#### 1. GENERAL IMPLEMENTATION OF THE MUST OFFER OBLIGATION

A generating unit that is otherwise required to run at Minimum Load in compliance with the Must Offer Obligation, may request a Waiver, as is further described in Section 3 of this Procedure. If a Waiver is granted, it will be in effect until the:

- (1) Generating unit comes on-line to perform a schedule **OR**
- (2) CAISO revokes the Waiver and requires the generating unit to parallel to the system by a certain date and time and run at Minimum Load.

A Waiver is evaluated under the Waiver Evaluation Guidelines set forth in Section 2 of this Procedure and is either granted, denied, or revoked in accordance with the methodologies set forth in Sections 4, 5 and 6 of this Procedure, respectively.

During those hours when a generating unit is granted a Waiver, such a unit may go off-line without violation of the Must Offer Obligation. During those hours for which a generating unit has a Waiver (a "Wavier Period"), the CAISO do not pay Minimum Load Cost Compensation ("MLCC"), regardless of whether the generating unit remains on-line, Schedules its Energy and/or capacity, or provides uninstructed Energy and/or capacity. When current or anticipated system conditions require the return of one or more generating units that are off-line in a Waiver Period, the CAISO revokes such Waivers according to the methodology set forth in Section 6 of this Procedure.



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Revocation of a Waiver is authorized by FERC as a part of the Must Offer Obligation and such revocation means that the generating unit must come online and run at Minimum Load in compliance with the Must Offer Obligation. Minimum Load costs for running in compliance with the Must Offer Obligation are paid in accordance with the MLCC, as ordered by FERC. In addition, as directed by FERC, the CAISO pays start-up fuel costs and air emission costs associated with generating units running at Minimum Load in compliance with the Must Offer Obligation.

Revocation of a Waiver (or termination of a Waiver Period) is NOT an CAISO Dispatch instruction. The generating unit will be required to come on-line and run at its minimum operating level at the time of the revocation.

When a Waiver is denied or revoked, the generating unit must be on-line and running at Minimum Load in compliance with the Must Offer Obligation. The period of time that a generating unit must run at Minimum Load in compliance with the Must Offer Obligation is a "Waiver Denial Period."

A Waiver Denial Period is in effect until the:

- (1) First hour of the Trade Day in which the generating unit has a Final Schedule for either Energy or Ancillary Services, **OR**
- (2) CAISO grants a Waiver.

During a Waiver Denial Period, a generating unit may submit Hour-Ahead Schedules and/or Supplemental Energy bids. An Hour-Ahead Schedule during a Waiver Denial Period is <u>not</u> incremental with respect to the generating unit's Minimum Operating level (i.e., Pmin level). Instead, the generating unit is expected to operate at the greater of the:

- (1) Final MW indicated in the Hour-Ahead Schedule, OR
- (2) Pmin, as set forth in the generating unit's response to the CAISO Data Request relating to the Must Offer Obligation OR as is set forth in the generating unit's Schedule 1 to the Participating Generator Agreement.

All generating units subject to the Must Offer Obligation, regardless of whether such units are running under a Waiver Denial Period, CAISO Dispatch or a bilateral Schedule, are required to make available to the CAISO Imbalance Energy Market (BEEP) all capacity that is above their Pmin, CAISO Dispatched amount or Scheduled amount. The generating unit may submit actual bids for the remaining available capacity, and if such bids are not inserted, BEEP inserts proxy incremental bids for all such capacity up to the maximum operating level (i.e., Pmax) of the generating unit.



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In addition, a generating unit operating at Pmin under a Waiver Denial Period in compliance with the Must Offer Obligation should not submit a Schedule for the Pmin Energy that it generates. Real Time Imbalance Energy Market bids may be submitted or proxy incremental bids will be inserted by the CAISO for all available capacity above the Pmin up to the Pmax.

The following three examples illustrate the expected operating level and MLCC logic for a generating unit operating in a Waiver Denial Period and uses the assumption of a 380 MW Pmax and a 200 MW Pmin:

- During all hours in which the generating unit does not have Hour-Ahead Schedules, the generating unit must operate at its' Pmin of 200 MW, all of which is settled as Uninstructed Energy as a part of the MLCC. The generating unit may submit Supplemental Energy bids for some or all of the remaining available capacity. Any remaining available capacity not bid by the unit in the Hour-Ahead or Supplemental Energy markets are inserted into the BEEP stack as proxy incremental bids.
- During all hours in which the generating unit has submitted an Hour-Ahead Final Schedule that is less than the Pmin level, 180 MW in this example, the generating unit is still expected to operate at its Pmin level. In this instance however, 180 MW will be settled in accordance with the bilateral Schedule, and 20 MW will be settled as Uninstructed Energy as a part of the MLCC. AS always, the generating unit may submit Supplemental Energy bids for some or all of the remaining available capacity. Any remaining available capacity not bid by the unit in the Hour-Ahead or Supplemental Energy markets are inserted into the BEEP stack as proxy incremental bids.
- During all hours in which the generating unit has submitted an Hour-Ahead Schedule equal to or greater than it's Pmin level, 200 MW in this example, the generating unit is expected to operate at the scheduled Final MW level, and no MLCC payment will be paid for such hours. The generating unit may submit Supplemental Energy bids for some or all of the remaining available capacity. Any remaining available capacity not bid by the generating unit in the Hour-Ahead or Supplemental Energy markets are inserted into the BEEP stack as proxy incremental bids.

In addition to the Must Offer Obligation requirements and procedures described herein, all other applicable CAISO Tariff, Protocols and Operating Procedures requirements apply to all generating units during both Waiver Periods and Waiver Denial Periods.



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None

### **Must Offer Waivers**

#### 2. WAIVER EVALUATION GUIDELINES

The Waiver Evaluation Guidelines set forth in this section evaluate requests for Waivers and guide CAISO decisions on revocation of Waivers (i.e., termination of a Waiver Period). The Waiver requests will be queued up during the day prior to the close of the Day-Ahead Market and logged using SLIC.

Prior to granting, denying or rescinding any Waivers, the following guidelines will be observed:

- Check with Outage Coordination to determine if generating units are waiting for an outage window to perform repairs,
- Locational requirements for NP15, SP15, and other related paths,
- Serve all interruptible and firm Load based on Day-Ahead Load forecasts and expected imports,
- Satisfy WECC MORC Operating Reserve, based on Day-Ahead Load forecasts and expected imports,
- Start-up times for the generating units.

#### 3. WAIVER REQUESTS

A Scheduling Coordinator (SC) may request a Waiver by contacting the CAISO Generation Dispatcher prior to the close of the Day-Ahead Market. All Waiver requests are evaluated by the CAISO immediately following the close of the Day-Ahead Market.

SCs may, but are not required to, provide to the CAISO, the preferred times for the beginning and duration of a Waiver Period.

Only one outstanding Waiver request may be submitted for any given generating unit.

All Waiver requests are placed in a Waiver request queue, until such time that the CAISO acts upon the request(s), either granting or denying each request, according to the procedure described herein.

A Waiver request is considered only once by the CAISO. Once the Waiver request is granted or denied, the request is removed from the queue.



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None

#### 4. **GRANTING WAIVERS**

Requests for Waivers are granted on a first-come first-serve basis, in an order based upon the time the request is received. The order of requests established by the first-come first-serve basis may be modified as necessary to account for system operational requirements, based on the Waiver guidelines described in Section 2 of this Procedure.

Prior to a generating unit separating from the CAISO Controlled Grid under a Waiver, the SC must contact the CAISO Generation Dispatcher to receive final approval and verification that system conditions continue to permit that the generating unit to go off-line, or to otherwise be put into an operating status in which such unit can not comply with the Must Offer Obligation.

A Waiver may be granted for a specified period of time, or for an indefinite period of time, based on projected system needs.

The CAISO may issue Waivers at any time.

Generating units recovering from a planned or forced outage are eligible to request a Waiver. If, in the CAISO's opinion, the nature of the repair or maintenance work performed on any such unit was such as to prudently dictated post-outage testing or check-out, the CAISO may require such a unit to demonstrate its ability to respond to CAISO Dispatch instructions according to operational parameters set forth in the relevant Participating Generator Agreement Schedule 1, prior to granting a Waiver.

#### 5. **DENYING WAIVERS**

Requests for Waivers are denied on a reverse order of the first-come first-serve basis, as potentially modified by the Waiver guidelines presented in Section 2. such that all Waiver requests not granted are thereby denied.

The CAISO specifies the time for the beginning of the Waiver Denial Period, but may or may not specify the duration of such a period. In either event, a generating unit's Minimum Run Time, as set forth in its Schedule 1 of the Participating Generator Agreement, is honored. Upon denial of a Waiver request, a generating unit is required to come on-line or remain on-line at Pmin until such time that:

- (1) The generating unit begins serving a Final Day-Ahead schedule, OR
- (2) Is granted a Waiver.

During a Waiver Denial Period, a generating unit is expected to remain on-line at minimum Load. Such a unit may submit Supplemental Energy bids for all available capacity up to the Pmax into the CAISO Supplemental Energy market for any hour during the Waiver Denial Period. If such Energy bids are not submitted to the CAISO Supplemental Energy Market, the CAISO inserts proxy



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incremental Energy bids to the BEEP stack for the remaining available capacity up to the applicable Pmax. Such proxy bids are based upon heat rate curve data supplied by the SCs (or as determined by proxy if actual data are not submitted) and gas price indices as required by FERC.

The CAISO does not issue Dispatch instructions for units to run at Minimum Load in compliance with the Must Offer Obligation. Specifically, CAISO denial of a Waiver request is not the issuance of a CAISO Dispatch instruction. The FERC requires units to run at Minimum Load in compliance with the Must Offer Obligation. The CAISO may elect to issue Dispatch instructions to units running at Minimum Load under the Must Offer Obligation. If the CAISO issues such a Dispatch instruction, the unit no longer runs under the Must Offer Obligation and is not eligible for recovery on its Minimum Load costs, but instead is settled at the Instructed Energy BEEP Ex-Post Price for Energy delivered in compliance with the Dispatch instruction. The Energy delivered, because of running at Minimum Load, is settled as Uninstructed Energy during the hour in which the unit was under CAISO Dispatch.

#### 6. RESCINDING WAIVERS

A Waiver granted to a generator may be rescinded at any time by the CAISO. Units off-line during a previously granted Waiver are rescinded in a reverse order of the first-come first-serve basis, as potentially modified by the Waiver guidelines presented in Section 2 (i.e. the last generating unit granted a Waiver would be the first generating unit to have their Waiver revoked).

Any Waiver from the Must Offer Obligation is subject to recall by the CAISO upon notice. Such notice is issued as far in advance as possible and under no circumstances less than the period equivalent to the start-up time for that unit as specified in that unit's PGA Schedule 1.

When the CAISO Generation Dispatcher contacts an SC to provide notice that a temporary Waiver will end, such communication from the CAISO Generation Dispatcher is NOT a Dispatch Instruction and is only a notice of the termination of the Waiver.

That is, compliance with the Must Offer Obligation is required by FERC. The CAISO does not issue Dispatch instructions for units to run at Minimum Load in compliance with the Must Offer Obligation. The CAISO may elect to issue Dispatch instructions to units running at Minimum Load under the Must Offer Obligation. If the CAISO issues such a Dispatch instruction, the unit no longer runs under the Must Offer Obligation and eligible for recovery of its minimum Load costs, but instead is settled at the Instructed Energy BEEP Ex-Post Price for any Energy delivered in compliance with the Dispatch instruction. The Energy delivered, due to running at Minimum Load in compliance with the Must



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Offer Obligation, is settled as Uninstructed Energy during the hour in which the unit was under CAISO Dispatch.

#### 7. WAIVER NOTIFICATION

Based on the Waiver Evaluation Guidelines, after the close of the Day-ahead Market, the CAISO notifies all respective SCs regarding the Granting and Denial of Waiver requests, and of Waiver revocation.

### 8. LOGGING MUST OFFER WAIVERS

Refer to Attachment A for logging guidance for Must Offer Waivers.

### SUPPORTING INFORMATION

#### **AFFECTED PARTIES**

- California ISO
  - Grid Operations and Security Coordination
  - Scheduling
  - Market Operations
  - Operations Engineering & Maintenance
  - Operations Support and Training (OSAT)
- COI Participants
- Participating Transmission Owners
- WECC Control Area Operators

#### RESPONSIBILITIES

Real Time Grid Operations

Performs daily coordination with Operations Engineering to grant/deny/revoke Waivers to generating units.

#### REFERENCES

None

#### POLICY

The CAISO concurs with and agrees to follow the limits established in the operating protocols, procedures and operating orders already in service by the Control Area Operators and Participating Transmission Owners that impact the CAISO Operation.



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### **DEFINITIONS**

Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have that meaning when capitalized in this Operating Procedure.

## **PROCEDURE HISTORY**

Version	Change 🛪 💮	Ву	Date
1.0	Drafted		
1.1	<ul> <li>Various minor changes to clarify the existing program.</li> <li>Added a paragraph to sections 5 and 6 to explain how dispatching and settlements occur for Units that come off of Minimum Load under the Must Offer Obligation.</li> <li>Revised Attachment A to better instruct dispatchers on logging Must Offer Waivers. The Attachment now is divided into a "New Shut-Down Outage Card" section and an "Instruction Log" section.</li> </ul>		
1.2	Removed comment about 15% capacity margin requirement from section 2, and the statement about self-committed generating units.		



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# **TECHNICAL REVIEW**

Reviewed By Content Expert	Signature	Date
OSAT		
OE&M		
Grid Ops		
Market Ops		
Scheduling		

# **APPROVAL**

Approved By	Signature	Date
Director of Grid Operations		
Director of Market Operations		



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None

# **APPENDIX**

Attachment A- Logging Must Offer Waivers

2. Please provide a time-line that describes the step-by-step sequence of events involved in the exemption process, starting with a request for waiver of the must-offer requirement through when a request is either granted or denied. If exemptions are granted without a unit formally requesting a waiver, provide a similar time-line of events. Explain any variations in the time-line for notification of exemption status.

#### **ISO RESPONSE**

The Must-Offer Obligation Waiver process begins two days prior to the actual Trading Day (*i.e.*, T<sub>-2 Day</sub>). At that time Generating Units may begin to contact the ISO to request Waivers for the actual Trading Day. All requests are placed in a queue based upon time of request, *i.e.*, in a "first-come, first served" order. Generating Units already off-line under a Waiver are in the queue ahead of all Generating Units seeking to go off-line because units already off-line have requested a Waiver earlier than units presently on-line. After the close of the Final Day-Ahead Market, at about 1500, Generating Units that are on-line but without bids or Schedules for the relevant Trading Day are considered as requesting a Waiver also, and are placed in the queue after those units that have expressly requested a Waiver. The Waiver Request queue is created in the ISO SLIC software.

Beginning as soon as possible after the close of the Final Day-Ahead Market, the ISO contacts each Generating Unit which either explicitly or implicitly requested a Waiver and either grants or denies a Waiver. The ISO usually contacts Generating Units beginning about 1800 but no later than 2100. The ISO will vary from the time-line described and grant or revoke a Waiver at any time as needed to ensure reliability but always taking into consideration a Generating Unit's Minimum Down, Start-Up and Minimum Run Times.

This response prepared by Mark Stuckey, Grid Operations, ISO.

3. Identify the minimum and, if applicable, the maximum time period of a "waiver denial period." Identify and explain factors or consideration that result in variations in the length of waiver denial periods.

#### **ISO RESPONSE**

The minimum Waiver Denial Period is the Minimum Run Time for each individual Generating Unit. The maximum Waiver Denial Period is 24-hours and is subject to renewal through the process detailed in the ISO responses to data request numbers 1 and 2 above. Variations in the length of any given Waiver Denial Period are due to changes in System Conditions, including, for example, Forced Outages, under and over-Scheduling of Load and weather.

This response prepared by Mark Stuckey, Grid Operations, ISO.

4. Identify any units (and associated MWs) that have been exempted permanently or indefinitely from the Must-Offer Obligation and provide that reason for such exemptions (e.g., long start-up time).

### ISO RESPONSE REDACTED

This response contains privileged information, protection for which is sought under 18 C.F.R. § 388.112.

5. Please provide a detailed discussion of the operational complexities that the ISO faces which would require a generator that submits a day-ahead schedule for a partial day to be deemed committed for the entire ensuing 24-hour period. Please provide a narrative summary and any studies performed to date which identify and/or discuss the cost and time involved to develop computer software to resolve these operational complexities.

#### **ISO RESPONSE**

The ISO grants Waivers in a fair and non-discriminatory manner by using a "first-come, first-served" process for Generating Units that are not otherwise uniquely located or equipped to resolve a specific transmission grid problem. To make non-discriminatory decisions, the ISO must create a list of eligible units and make Waiver decisions at one time for all of the units using the best information

on System Conditions available at the time. The close of the Final Day-Ahead Market is the logical time for such group decisions because the ISO has both the Schedules for the upcoming Trading Day and is making the requisite Ancillary Service purchases. The ISO must assume that units with Final Day-Ahead Schedules will, in large part, honor such Schedules and therefore the supply of Generation to meet to Demand, as assessed at the close of the Day-Ahead Market, is reasonably accurate. Using these assumptions, the ISO grants as many Waiver requests as can be made while ensuring adequate generation will be on-line to meet deficiencies in amounts of Imbalance Energy that will be needed in real time.

The ISO is engaged in highly complex management of a collection of Generating Units with widely varying Minimum Run, Minimum Down and Start-Up Times. It is a significant challenge to fit Generating Units with partial Schedules for the Day-Ahead Market and different operating constraints into a fair and nondiscriminatory Waiver process. A serious problem exists when resources off-line under a Waiver submit a partial Final Day-Ahead Market Schedule. The ISO must use Final Day-Ahead Market Schedules to make informed decisions about granting Waivers to resources on-line and for procurement of Ancillary Services. Unfortunately, frequently the resources off-line with partial Day-Ahead Market Schedules fail to come on-line and perform, electing instead to cancel the Schedule in the Hour-Ahead Markets. This practice often creates serious shortages of Imbalance Energy in real time because the ISO has granted Waivers to other resources based upon the partial Day-Ahead Schedules that subsequently were cancelled. The solution to this practice is to deem any Final Day-Ahead Schedule, partial or full, as a full Trading Day self-commitment by the resource such that the ISO can more accurately and fairly make Waiver decisions for all units.

There also are opportunities for "short-cutting" the "first-come, first-served" queue approach by submitting a partial Schedule, canceling the Schedule in the Hour-Ahead Market and then seeking a Waiver out of sequence and after the majority of Waiver decisions have been made after the close of the Day-Ahead Market. The ISO cannot ensure it will have sufficient but not an unreasonably excessive amount of generation on-line under the Must-Offer Obligation if the ISO must factor in Generating Units canceling Schedules in the Hour-Ahead Market and then seeking Waivers for partial periods within the Trading Day.

The planned implementation of real time economic dispatch, supplemented with security constrained unit commitment, will assist the ISO in making Waiver decisions, but these new tools will not be available until the fall of 2003 at the earliest.

This response prepared by Steve Gillespie, Grid Operations, ISO.

6. For each day of the period October 1, 2002 through December 31, 2002, please provide the number of Must-Offer units and associated capacity (in MWs) that were available and that were exempted (granted a waiver). For each hour of each day of the same period, provide the number of Must-Offer units and associated capacity (in MWs) that the ISO revoked a previously granted exemption.

## **ISO RESPONSE**

Please see the attached Excel Sheets.

This response prepared by Mike Turner, Market Quality, ISO.

# ISO Response to Data Request Number 6

Trading Date	Total Number of MOO Units Available *Not accounting for Planned or Forced Outages	Total Available MW's @ Pmin per Day	Total Exempted MW's @ Pmin per Day	Total Actual MW's @ Pmin of Units Denied or Revoked a Waiver - per Day	Total Available MW's @ Pmax per Day	Total Exempted MW's @ Pmax per Day	Total Actual MW's @ Pmax of Units Denied or Revoked a Waiver - per Day
10/01/02	104	109,218	108,258	960	468,813	453,350	15,463
10/02/02	104	109,218	109,218	4 200	468,813	468,813	- 6 020
10/03/02 10/04/02	104 104	109,218	108,018	1,200 720	468,813 468,813	462,583	6,230 3,590
10/05/02	104	109,218 109,218	108,498 107,243	1,975	468,813	465,223 463,193	5,620
10/05/02	104	109,218	106,958	2,260	468,813	455,957	12,856
10/07/02	104	109,218	98,742	10,476	468,813	404,558	64,255
10/08/02	2.5.00/h .1045 Assaud sam	109,218	105,018	4,200	468,813	435,765	33,048
10/09/02	104 (1945) 104 (1945) 1	109,218	102,162	7,056	468,813	396,237	72,577
10/10/02	104	109,218	103,890	5,328	468,813	423,225	45,588
10/11/02	104	109,218	105,138	4,080	468,813	441,329	27,484
10/12/02	104	109,218	104,778	4,440	468,813	437,441	31,372
10/13/02 10/14/02	104 104	109,218 109,218	105,858 104,258	3,360 4,960	468,813 468,813	445,529 437,776	23,284 31,038
10/14/02	104	109,218	105,858	3,360	468,813	445,529	23,284
10/16/02	104	109,218	107,538	1,680	468,813	445,529	23,284
10/17/02	104	109,218	105,858	3,360	468,813	445,529	23,284
10/18/02	104	109,218	104,610	4,608	468,813	427,392	41,421
10/19/02	104	109,218	106,290	2,928	468,813	439,032	29,781
10/20/02	104	109,218	106,290	2,928	468,813	439,032	29,781
10/21/02	104	109,218	104,343	4,875	468,813	435,024	33,789
10/22/02	104	109,218	102,738	6,480	468,813	417,051	51,762
10/23/02	104 104	109,218	103,768	5,450	468,813	430,318	38,495 30,892
10/24/02 10/25/02	104	109,218 109,218	104,778 107,058	4,440 2,160	468,813 468,813	437,921 449,386	19,428
10/25/02	104	109,218	107,736	1,482	468,813	466,163	2,650
10/27/02	104	109,218	108,618	600	468,813	466,693	2,120
10/28/02	104	109,218	106,597	2,621	468,813	455,644	13,169
10/29/02	104	109,218	104,898	4,320	468,813	432,331	36,483
10/30/02	104	109,218	108,018	1,200	468,813	456,830	11,983
10/31/02	104	109,218	103,149	6,069	468,813	430,507	38,307
11/01/02 11/02/02	104	109,218	105,738	3,480	468,813	446,922	21,892
11/02/02	104 104	109,218 109,218	109,218 107,738	1,480	468,813	468,813 455,270	13,543
11/04/02	104	109,218	107,738	1,480	468,813 468,813	452,932	15,882
11/05/02	104	109,218	105,978	3,240	468,813	441,881	26,932
11/06/02	104	109,218	101,578	7,640	468,813	425,940	42,873
11/07/02	104	109,218	102,738	6,480	468,813	439,779	29,034
11/08/02	104	109,218	101,778	7,440	468,813	434,799	34,014
11/09/02	104	109,218	108,258	960	468,813	456,446	12,367
11/10/02	104	109,218	108,258	960	468,813	461,150	7,663
11/11/02	104	109,218	108,448	770	468,813		5,337
11/12/02	104	109,218 109,218	107,358 107,298	1,860 1,920	468,813 468,813	454,019 452,969	14,794 15,844
11/14/02	104	109,218	107,538	1,680	468,813	457,169	11,644
11/15/02	104	109,218	107,538	1,680	468,813	457,169	11,644
11/16/02	104	109,218	107,058	2,160	468,813	449,346	19,467
11/17/02	104	109,218	109,218	-	468,813	468,813	-
11/18/02	104	109,218	109,218	-	468,813	468,813	•
11/19/02	104	109,218	108,168	1,050	468,813	463,788	5,025
11/20/02 11/21/02	104 104	109,218	108,458	760	468,813	459,899	8,914
11/21/02	104	109,218 109,218	107,748 106,218	1,470 3,000	468,813 468,813	452,645 437,750	16,168 31,063
11/23/02	104	109,218	100,218	3,000	468,813	437,750	31,063
11/24/02	104	109,218	109,218	-	468,813	468,813	
11/25/02	104	109,218	106,068	3,150	468,813	450,827	17,987
11/26/02	104	109,218	107,658	1,560	468,813	452,942	15,871
11/27/02	104	109,218	108,738	480	468,813	461,030	7,783
11/28/02	104	109,218	109,218	-	468,813	468,813	-
11/29/02	104	109,218	109,218		468,813	468,813	<u> </u>
11/30/02	104 104	109,218	109,218	<del></del>	468,813	468,813	38,253
12/01/02	104	109,218 109,218	104,300 98,677	4,918 10,541	468,813 468,813	430,561 404,651	38,253 64,162
12/03/02	104	109,218	100,698	8,520	468,813	416,815	
12/04/02	104	109,218	101,178	8,040	468,813	424,615	
12/05/02	104	109,218	99,740	9,478	468,813	423,408	45,405
12/06/02	104	109,218	101,778	7,440	468,813	424,423	44,390
12/07/02	104	109,218	101,098	8,120	468,813	415,775	
12/08/02	104	109,218	100,008	9,210	468,813	398,174	
12/09/02 12/10/02	104	109,218	99,802	9,416	468,813	412,203	56,610
12/11/02	104	109,218 109,218		9,970 7,896	468,813 468,813	415,478 427,615	
12/12/02	104	109,218			468,813	443,383	
12/13/02	104	109,218	<del></del>		468,813	459,148	

Frading Date	Total Number of MOO Units Available Not accounting for Planned or Forced Outages	Total Available MW's @ Pmin per Day	Total Exempted MW's @ Pmin per Day	Total Actual MW's @ Pmin of Units Denied or Revoked a Waiver - per Day	Total Available MW's @ Pmax per Day	Total Exempted MW's @ Pmax per Day	Total Actual MW's @ Pmax of Units Denied or Revoked a Waiver - per Day
12/14/02	104	109,218	106,602	2,616	468,813	452,685	16,128
12/15/02	104	109,218	103,442	5,776	468,813	438,813	30,000
12/16/02	s 104	109,218	101,007	8,211	468,813	432,379	36,434
12/17/02	104	109,218	95,857	13,361	468,813	391,260	77,553
12/18/02	104	109,218	98,082	11,136	468,813	390,643	78,170
12/19/02	104	109,218	100,338	8,880	468,813	414,619	54,194
12/20/02	104	109,218	100,818	8,400	468,813	422,299	46,514
12/21/02	2104 E.E.	109,218	104,418	4,800	468,813	451,423	17,390
12/22/02	104	109,218	104,418	4,800	468,813	451,423	17,390
12/23/02	* 104	109,218	102,160	7,059	468,813	436,008	32,805
12/24/02	104	109,218	106.098	3,120	468,813	442,173	26,640
12/25/02	104	109,218	106,098	3,120	468,813	442,173	26,640
12/26/02	104	109,218	106,098	3,120	468,813	442,173	26,640
12/27/02	104	109,218	108.018	1,200	468,813	450,213	18,600
12/28/02	104	109,218	108,018	1,200	468,813	450,213	18,600
12/29/02	104	109,218	108,018	1,200	468,813	450,213	18,600
12/30/02	104	109,218	108,018	1,200	468,813	450,213	18,600
12/31/02	104	109,218	108,018	1,200	468,813	450,213	18,600
<b>Grand Total</b>		10,048,078	9,689,646		43,130,829	40,744,941	2,385,888

Total Number of Units that the ISO "revoked a previously granted exemption" to the Must Offer Obligation.

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10/02/02		╁			+	0	0	0	0	0		0	0		0	0	0	├	0 0	0	0	0
10/03/02	0	$\vdash$	0	$\vdash$	┞	0	0	0	0	0	0	0	0	0	0	0	0	H	Н		0	0
10/04/02	0	$\vdash$	-	┞	_	0	0	0	0	0	0	0	0	0	0	0	0	Н	0 0		0	0
10/05/02	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	4	$\dashv$	٥	0
10/06/02	0	0	0	$\vdash$	-	0	0	0	0	0	0	0	0	-	-	2	7	_	Н	H	7	2
10/07/02	0	$\vdash$	$\vdash$	<u> </u>	-	0	0	0	-	2	7	10	10	10	10	10	10	H	À	$\dashv$	10	10
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10/10/02	0	0	0	L	L	0	0	0	0	0	0	0	0	0	0	0	0	$\dashv$		-	٥	0
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10/24/02	0	0	0	H	L	0	0	0	0	0	0	0	0	0	0	0	0	Н	-	4	٥	0
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10/26/02	0	0	0	L	L	0	0	0	0	0	0	0	0	0	0	0	0	-	0 0		٥	0
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10/29/02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2 2	2	2	2
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11/01/02	0	0	0	-	H	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-
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11/03/02	0	0	0 0	L	L	0	0	0	0	0	0	0	0	0	0	•	0	$\dashv$	0	0	0	0
11/04/02	0	0	0	H		0	0	0	0	0	0	0	0	-	-	-	-	-	$\dashv$	-	-	-
11/05/02	0	0	0 0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	٥	0
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11/07/02	0	0	0	0	H	0	0	0	0	0	0	0	0	0	0	0	0	$\dashv$	0	0	٥	0
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2.5	 @ Pmin of the Units that the ISO "revoked	 ·	to the Blook Office Obligation

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TRADING DATE 10/01/02	0	0	0	4	5	0	ó l	0	- 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/02/02	0	0	0	0	0	0	0 =	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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### **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in the above-captioned dockets.

Dated at Folsom, California, on this 25<sup>th</sup> day of March, 2003.

Margaret A. Rostker