

RETURN COPY

SWIDLER BERLIN SHEREFF FRIEDMAN, LLP

THE WASHINGTON HARBOUR
3000 K STREET, NW, SUITE 300
WASHINGTON, DC 20007-5116
TELEPHONE (202) 424-7500
FACSIMILE (202) 424-7647
WWW.SWIDLAW.COM

NEW YORK OFFICE
THE CHRYSLER BUILDING
405 LEXINGTON AVENUE
NEW YORK, NY 10174
TEL. (212) 973-0111
FAX (212) 891-9598

**PROTECTED MATERIALS REDACTED
PUBLIC VERSION**

March 20, 2003

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

**Re: *San Diego Gas & Electric Co., et al.*
*Docket Nos. EL00-95-069, et al.***

FILED
OFFICE OF THE
SECRETARY
2003 MAR 20 PM 4:42
FEDERAL ENERGY
REGULATORY COMMISSION

Dear Secretary Salas:

Enclosed are an original and two copies of the California Independent System Operator Corporation's Responsive Filing to certain submissions filed in this docket on March 3, 2003. This filing includes:

- Responsive Filing of the California Independent System Operator Corporation
- Executive Summary and Index of Relevant Material
- Exhibits:
 - Ex. No. ISO-1 Prepared Rebuttal Testimony of Eric Hildebrandt
 - Ex. No. ISO-2 Market Monitoring and Information Protocol of the ISO Tariff.

The Honorable Magalie Roman Salas
March 20, 2003
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Please note that this filing is being filed under seal pursuant to the Protective Order and Non-Disclosure Statement adopted by the Presiding Judge in this proceeding. Specifically, Exhibit Number ISO-1 contains "Protected Materials," as defined in that Protective Order. Therefore, this Exhibits has been redacted in the public copies included with this filing. The redacted version of this Exhibit will be provided to all parties on the Restricted Service List in this proceeding. Additionally, please note that the affidavit of witness Eric Hildebrandt provided in the present filing is a facsimile copy. The ISO will provide the original of the affidavit in the near future.

Also enclosed are two extra copies of the filing to be time/date stamped and returned to us by the messenger. Please contact the undersigned is you have any questions regarding this filing. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "J. Phillip Jordan". The signature is written in a cursive style and is positioned above a horizontal line.

J. Phillip Jordan
Michael Kunselman
(202) 295-8465

Counsel for the California
Independent System Operator Corporation

Enclosures

cc: Restricted Service List

PRIVILEGED MATERIALS REDACTED – PUBLIC VERSION

THE UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

San Diego Gas & Electric Company,)
Complainant,)
v.) Docket No. EL00-95-069
Sellers of Energy and Ancillary Services)
Into Markets Operated by the California)
Independent System Operator and the)
California Power Exchange,)
Respondents.)
Investigation of Practices of the California)
Independent System Operator and the) Docket No. EL00-98-042
California Power Exchange)

EXECUTIVE SUMMARY AND INDEX OF RELEVANT MATERIAL
OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

EXECUTIVE SUMMARY

Submitter (Party Name)	California Independent System Operator Corporation
Contact or Representative (Name, Org., Address and Phone No.)	Charles F. Robinson, General Counsel Gene Waas, Regulatory Counsel The California Independent System Operator Corporation 151 Blue Ravine Road Folsom, CA 95630 Tel: (916) 608-7049 J. Phillip Jordan Michael Kunselman Swidler Berlin Shereff Friedman, LLP 3000 K Street, N.W., Suite 300 Washington, DC 20007 Tel: (202) 424-7500 Counsel for the California Independent System Operator Corporation

Finding of Fact	Sellers' strategies, as described in the Enron Memoranda and as established by the March 3 submission of the California Parties, were not merely rational behaviors (for example, in response to market design flaws), but instead were precisely the types of Anomalous Market Behavior identified in the ISO Tariff; moreover, these strategies involved the exercise of market power, undermined the market, and conferred unfair competitive advantages.
Relief Requested	The Commission should adopt the relief requested by the California Parties [REDACTED]. Moreover, the Commission should consider imposing sanctions on individual sellers that, on a going-forward basis, place conditions on their market-based rate authority. Additionally, punitive sanctions may also be particularly appropriate for sellers who are found to have provided false or misleading information to the Commission, or other governmental bodies, in the various investigations related to these proceedings.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1; ISO-2

Finding of Fact	Contrary to arguments raised by several suppliers, the ISO Tariff, during the period at issue in this proceeding, did prohibit the gaming and market manipulation activities engaged in by sellers.
Relief Requested	The Commission should adopt the relief requested by the California Parties [REDACTED]. Moreover, the Commission should consider imposing sanctions on individual sellers that, on a going-forward basis, place conditions on their market-based rate authority. Additionally, punitive sanctions may also be particularly appropriate for sellers who are found to have provided false or misleading information to the Commission, or other governmental bodies, in the various investigations related to these proceedings.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-2

Finding of Fact	The ISO has never concluded that the "Enron" strategies had an insignificant or beneficial impact on the California wholesale electricity markets; in fact, as the ISO has recognized, the strategies had numerous detrimental impacts.
Relief Requested	The Commission should reject parties' proposed findings and arguments to the contrary.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	The ISO's analyses of the causes of high prices in California have not concluded that those prices resulted from fundamental market factors to the exclusion of seller manipulation; moreover, given the evidence adduced by the California Parties, the ISO can no longer conclude that one fundamental market factor to which it previously attributed some price increases, namely supply scarcity, in fact existed.
Relief Requested	The Commission should reject parties' proposed findings and arguments to the contrary.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	Suppliers misrepresent the degree to which the ISO was "aware" of the use of certain seller strategies, and therefore, the fact that the ISO did not take steps against those strategies does not suggest that those strategies were not manipulative.
Relief Requested	The Commission should reject parties' proposed findings and arguments to the contrary.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	[REDACTED]
Relief Requested	[REDACTED]
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	[REDACTED]
Relief Requested	[REDACTED]
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	[REDACTED]
Relief Requested	[REDACTED]
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

Finding of Fact	The allegation by certain suppliers that the ISO engaged in "market manipulation" is without basis, and is irrelevant to this proceeding, because it does not constitute either evidence that any market participant engaged in market manipulation or evidence counter-indicative of market manipulation.
Relief Requested	The Commission should reject parties' proposed findings and arguments to the contrary.
Index Exhibit Number(s) pertaining to the Finding of Fact	ISO-1

INDEX OF RELEVANT MATERIAL

Submitter (Party Name)	California Independent System Operator Corporation
Index Exh. No.	ISO-1
Privileged Info (Yes/No)	Yes
Document Title	Prepared Rebuttal Testimony of Dr. Eric Hildebrandt on Behalf of the California Independent System Operator Corporation
Document Author	Dr. Eric Hildebrandt
Doc. Date (mm/dd/yyyy)	03/202003
Specific finding made or proposed	See Executive Summary for complete listing of all proposed findings.
Time period at issue	Between 5/2000 and 6/2001
Docket No(s). and case(s) finding pertains to	EL00-95; EL00-98
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	See Executive Summary
Party/Parties performing impermissible conduct	Sellers of Energy and Ancillary Services into Markets Operated by the California Independent System Operator Corporation and the California PX.

Submitter (Party Name)	California Independent System Operator Corporation
Index Exh. No.	ISO-2
Privileged Info (Yes/No)	No
Document Title	ISO Market Monitoring and Information Protocol
Document Author	California Independent System Operator Corporation
Doc. Date (mm/dd/yyyy)	10/13/2000
Specific finding made or proposed	The Commission should adopt the relief requested by the California Parties, as set forth in the testimony of Dr. Stern, Exh. CA-3 at 73:1-92:5. Moreover, the Commission should consider imposing sanctions on individual sellers that, on a going-forward basis, place conditions on their market-based rate authority. Additionally, punitive sanctions may also be particularly appropriate for sellers who are found to have provided false or misleading information to the Commission, or other governmental bodies, in the various investigations related to these proceedings.
Time period at issue	Between 5/2000 and 6/2001
Docket No(s) and case(s) finding pertains to *	EL00-95; EL00-98
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	<p>Sellers' strategies, as described in the Enron Memoranda and as established by the March 3 submission of the California Parties, were not merely rational behaviors (for example, in response to market design flaws), but instead were precisely the types of Anomalous Market Behavior identified in the ISO Tariff; moreover, these strategies involved the exercise of market power, undermined the market, and conferred unfair competitive advantages.</p> <p>Also, contrary to arguments raised by several suppliers, the ISO Tariff, during the period at issue in this proceeding, did prohibit the gaming and market manipulation activities engaged in by sellers.</p>

Party/Parties performing any alleged manipulation	Sellers of Energy and Ancillary Services into Markets Operated by the California Independent System Operator Corporation and the California PX.
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Respectfully submitted,



J. Phillip Jordan
Michael Kunselman

Charles F. Robinson
General Counsel
Gene Waas
Regulatory Counsel

The California Independent
System Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630
Tel: (916) 608-7049

Swidler Berlin Shereff Friedman, LLP
3000 K Street, N.W., Suite 300
Washington, DC 20007
Tel: (202) 424-7500

Dated: March 20, 2003

**PROTECTED MATERIALS REDACTED
PUBLIC VERSION**

**THE UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

San Diego Gas & Electric Company,)	
Complainant,)	
)	
v.)	Docket No. EL00-95-069
)	
Sellers of Energy and Ancillary Services)	
Into Markets Operated by the California)	
Independent System Operator and the)	
California Power Exchange,)	
Respondents.)	
)	
Investigation of Practices of the California)	
Independent System Operator and the)	Docket No. EL00-98-042
California Power Exchange)	

**REPLY COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

Pursuant to the "Order on Motion for Discovery Order" issued by the Federal Energy Regulatory Commission ("Commission") in the captioned proceedings on November 20, 2002, 101 FERC ¶ 61,186 (2002), and the Commission's February 10, 2003 Order on Clarification and Rehearing, 102 FERC ¶ 61,164 (2003), the ISO hereby submits its comments in reply to certain submissions filed in this docket on March 3, 2003. These comments address evidence submitted by various sellers that they alleged to be counter-indicative of market manipulation by sellers in the California wholesale markets for the period January 1, 2000 through June 20, 2001 (the "relevant period"), as well as some

of the findings proposed by sellers. These comments are organized under numerically designated Proposed Findings of Fact.

PROPOSED FINDING OF FACT NO. 1:

SELLERS' STRATEGIES, AS DESCRIBED IN THE ENRON MEMORANDA AND AS ESTABLISHED BY THE MARCH 3 SUBMISSION OF THE CALIFORNIA PARTIES, WERE NOT MERELY RATIONAL BEHAVIORS (FOR EXAMPLE, IN RESPONSE TO MARKET DESIGN FLAWS), BUT INSTEAD WERE PRECISELY THE TYPES OF ANOMALOUS MARKET BEHAVIOR IDENTIFIED IN THE ISO TARIFF; MOREOVER, THESE STRATEGIES INVOLVED THE EXERCISE OF MARKET POWER, UNDERMINED THE MARKET, AND CONFERRED UNFAIR COMPETITIVE ADVANTAGES

Dr. Hildebrandt notes that the sellers' key economic witnesses all contend that the sellers' behavior during the relevant period constituted rational reactions to market design flaws. Exh. ISO-1, Section III. He then rebuts this contention in detail. He parses the Market Monitoring and Information Protocol ("MMIP") of the ISO Tariff to show that the various seller strategies established in the March 3 submission of the California Parties fall squarely within that protocol's description of anomalous market behavior. He notes several specific practices that fall under each of the following descriptions, in the MMIP, of anomalous market behavior:

- (1) withholding generation capacity under circumstances in which it would be offered in a competitive market;
- (2) unexplained or unusual declarations of generator unavailability;
- (3) unusual trades or transactions;

(4) pricing and bidding patterns inconsistent with prevailing supply and demand conditions; and

(5) unusual activity or circumstances relating to imports or exports.

In addition, Dr. Hildebrandt identifies other practices that represent anomalous market behavior even though they do not fall under any of the above five illustrative descriptions from the MMIP. In all, Dr. Hildebrandt identifies some two dozen distinct practices. After doing so, he expresses his expert view, based on his expertise and his personal familiarity with the ISO markets before, during and after the relevant period, that these practices involved the exercise of market power detrimental to the markets, undermined the efficiency, workability or reliability of the markets, and provided some participants an unfair competitive advantage during the relevant period. Dr. Hildebrandt's testimony fully supports the proposed finding set forth above.

PROPOSED FINDING OF FACT NO. 2:

CONTRARY TO ARGUMENTS RAISED BY SEVERAL SUPPLIERS, THE ISO TARIFF, DURING THE PERIOD AT ISSUE IN THIS PROCEEDING, DID PROHIBIT THE GAMING AND MARKET MANIPULATION ACTIVITIES ENGAGED IN BY SELLERS

Several sellers contend that the ISO Tariff does not prohibit gaming or market manipulation. For instance, CSG proposes the following finding of fact:

The ISO did not expressly prohibit gaming. The ISO's tariff merely subjected gaming to scrutiny and gaming behavior did not automatically lead to the imposition of remedies. Instead, the tariff authorized the Market Surveillance Unit ("MSU") to review gaming behavior in order to assess its potential effect. The ISO's FERC-

approved tariff underscores how the ISO recognized that gaming could constitute legitimate aggressive competition.

Sellers are incorrect. Their argument is, of course, intuitively absurd. They contend, in effect, that the Tariff includes hundreds of pages of detailed rules aimed at ensuring fair and efficient markets but permits those rules to be gamed or the markets manipulated with impunity. But more than common sense alone refutes the sellers' contention. The ISO Tariff and protocols in fact clearly prohibit the type of gaming and market manipulation in which the California Parties' evidence shows the sellers to have engaged. They do so by defining gaming and manipulation (referred to as "anomalous market behavior") and making both – as well as exercises of market power -- subject to sanction and other corrective action when they adversely affect the markets. If the Tariff clearly subjects gaming, manipulation and market power to sanctions and other corrective action, it is pure sophistry to suggest that the behavior is not prohibited. Refraining from such behavior amounts to a condition of service by the ISO and therefore a condition to the sellers' exercise of their market-based rate authority in the markets operated by the ISO; engaging in the behavior violates the terms of service and the sellers' market-based rate authority and subjects the sellers to sanctions and corrective action by both the ISO and FERC.

Section 2.6 of the ISO Tariff and Section 2.1 of the MMIP provide for the ISO, through the Department of Market Analysis ("DMA," formerly the Market Surveillance Unit, or "MSU"), to monitor the markets for abuses and recommend

corrective actions. The types of abuses that DMA is to look for are defined in Section 2.1, and include “Anomalous Market Behavior” (Section 2.1.1), “Abuse of Reliability Must Run Status” (Section 2.1.2), and “Gaming” (Section 2.1.3).

Review of how those activities are described shows, as Dr. Hildebrandt testifies, see Exh. ISO-1, Section III, that the evidence adduced by the California Parties establishes that sellers in fact engaged in those market abuses.

Section 2.3 of the MMIP provides for corrective actions to be pursued to address market abuses under two circumstances. First, Section 2.3.1 authorizes corrective actions when there is “a significant possibility of the presence of or potential for the exercise of *market power that would adversely affect the operation of the ISO Markets.*” And second, Section 2.3.2 provides for corrective action when there may be no exercise or potential exercise of market power, but

“activities or behavior of Market Participants in the ISO Markets have the effect of, or potential for, undermining the efficiency, workability or reliability of the ISO Markets to give or to serve such Market Participants an unfair competitive advantage over other Market Participants.”

Both Section 2.3.1 and Section 2.3.2 apply to *all* the types of behaviors outlined in Section 2.1; *i.e.*, any activity set forth in Section 2.1 that meets the standards articulated in Sections 2.3.1 and 2.3.2 is subject to corrective action. And under both Section 2.3.1 and Section 2.3.2, the types of corrective actions that may be pursued are unrestricted.¹ Dr. Hildebrandt testifies that in his opinion the

¹ While “gaming” is subject to corrective action under Sections 2.3.1 and 2.3.2 when the standards of those sections are met, it is also separately addressed in Section 2.3.3. That section provides that the MSU, if it discovers evidence of gaming, shall review the relationship between

practices engaged in by the sellers during the relevant period meet the standards in Section 2.3.1 and 2.3.2 that justify corrective actions. See Exh. ISO-1, Section III.

It is true that not *all* strategies engaged in by market participants are prohibited under the Tariff. However, it does not follow that *all* behavior on the part of sellers is therefore permissible, and that *no* behavior constitutes a violation of the ISO Tariff. In fact, the provisions discussed above state clearly that the ISO is permitted to take appropriate corrective actions, including imposing sanctions for past behavior, to address behavior that is *harmful* to the ISO markets, because it evidences the exercise or potential exercise of market power, or undermines the markets' efficiency, workability or reliability, or gives some participants an unfair competitive advantage.

If the ISO has the power to take corrective action for past activities, then the activities are, in fact, prohibited under the Tariff. The Tariff as a whole prohibits these activities, by first identifying them (activities that allow for the adverse exercise of market power, undermine the market, or give some participants an unfair competitive advantage) and then making them subject to sanctions. Merely because the DMA has the *discretion* to address detrimental

the gaming activities "and/or the relationship between system conditions and market behavior and pricing in order to assess the potential for and impact of such gaming behavior" with a view towards making changes, if necessary, in the structure of the ISO itself, or changes to the ISO Tariff, Protocols, or Activity Rules, or to proscribe the specific gaming behavior. Unlike the previous two sections, Section 2.3.3 limits the scope of responsive actions to prescriptive ones. Section 2.3.3 is essentially an additional backstop with respect to gaming; that is, if evidence of gaming is uncovered, but it does not rise to the levels necessary to trigger Sections 2.3.1 (market power) or 2.3.2 (undermining the ISO markets or providing an unfair competitive advantage), a remedy is still available, albeit in the more limited form of a prescriptive, forward-looking one, rather than one that might be punitive in nature. However, if the "gaming" behavior does

activities by forward-looking corrective actions, and forego sanctions, does not mean the activities are not still prohibited by the Tariff.² Similarly, if the ISO may not be able to identify or pinpoint the source of the detrimental effects on the market in a given circumstance because the ISO does not have access to certain critical types of data,³ the activities that in fact caused the detrimental effects are still prohibited by the Tariff.

As set forth in Dr. Hildebrandt's testimony (and noted previously in this document), many of the specific behaviors identified in the California Parties' March 3 submission are exactly the sorts of behaviors that (i) are identified under Section 2.1 of the MMIP, (ii) evidence the exercise or potential exercise of market power or otherwise have detrimental effects on the markets, and (iii) are subject to corrective action pursuant to Sections 2.3.1 and 2.3.2. The necessary conclusion is both clear and easily understood: sellers, during the relevant period, engaged in activities that violated the ISO Tariff. It is now in the Commission's hands to fashion appropriate remedies for those violations.

evidence the impacts (or potential impacts) described in Sections 2.3.1 and 2.3.2, then the avenues for corrective action are unlimited and may include sanctions for past conduct.

² Mirant urges the Commission to find that "the ISO Tariff lacks clearly defined rules regarding market behavior that industry participants can rely upon so as to avoid the current attempts to characterize retroactively market participant behavior as market manipulation any time prices rise in California." Mirant Executive Summary at 36. The fact that the ISO Tariff does not document every individual hue and shade of prohibited behavior does not deprive participants of substantial guidance as to what *types* of behavior are prohibited, and certainly not to the extent that *any* seller behavior is vulnerable to being retroactively labeled "manipulation" any time that prices rise in California. In fact, the MMIP provides significant guidance as to what behavior is prohibited and will be subject to corrective action by the ISO. As explained above, those types of behavior are specifically identified and defined under Section 2 of the MMIP. Notably, there is no language in Section 2 that states that "high prices" or "rising prices" are even a consideration in determining whether to take corrective action. The ISO Tariff provides standards as to what constitutes prohibited behavior; contrary to Mirant's contention, market participants are not exposed to charges of market manipulation simply because prices rise.

The Commission itself has noted that an appropriate remedy for Tariff violations could be the ordering of refunds prior to October 2, 2000. The ISO agrees that such refunds are among the appropriate remedies for the practices shown by the California Parties to have occurred, and urges such refunds; as previously noted, the ISO Tariff, in MMIP ¶¶ 2.3.1 and 2.3.2, makes clear that corrective actions can include sanctions for past conduct (which could include refunds).

Sellers, of course, contend that any remedy for gaming or market manipulation must be aimed only at a party shown to have engaged in gaming or manipulation, and must be further restricted to requiring the return of any gain from the specific instance of gaming or manipulation. While the ISO certainly believes that specific sanctions against specific parties are appropriate, the ISO believes, for the reasons noted by Dr. Hildebrandt, see Exh. ISO-1, Section VI, that the Commission can and must go far beyond such targeted sanctions. First, it is virtually if not absolutely impossible to disentangle the effects of the various strategies engaged in by disparate sellers in order to assign discrete market effects and discrete ill-gotten gains to each instance of each seller's implementation of each given strategy. The effects were simply too interwoven and too cumulative, both within an hour and over time. Each of the strategies contributed to the detrimental impact on the market and thus each market participant employing the strategies is responsible for the overall result. Second, the limited time available to adduce evidence has undoubtedly prevented the

³ See Exh. ISO-1, Section IV (explaining that the ISO was unaware of the existence or scope of many seller strategies during the relevant period because of a lack of data or sufficient personnel resources).

bringing to light of the full extent of the nefarious activities, so that any remedy restricted to discrete seller and discrete instances of gaming or manipulation would fall far short of doing justice or equity. In such a situation, the minimum that should be done, as noted by Dr. Hildebrandt, is to impose the [REDACTED]

[REDACTED] This relief would leave market participants in the same position they would have been in had the market abuses and manipulative practices not dramatically inflated prices from May 2000 through June 2001. In addition, as Dr. Hildebrandt also notes, the Commission should consider imposing conditions on some sellers' market-based rate authority and even punitive sanctions under certain circumstances.

PROPOSED FINDING OF FACT NO. 3:

THE ISO HAS NEVER CONCLUDED THAT THE "ENRON" STRATEGIES HAD AN INSIGNIFICANT OR BENEFICIAL IMPACT ON THE CALIFORNIA WHOLESALE ELECTRICITY MARKETS; IN FACT, AS THE ISO HAS RECOGNIZED, THE STRATEGIES HAD NUMEROUS DETRIMENTAL IMPACTS

In its March 3 submission, [REDACTED] contended that the ISO had analyzed the strategies outlined in the so-called "Enron memoranda" and concluded that they had no significant impact on prices in or the functioning of the California market during the relevant period. In particular, Reliant pointed to a report prepared by the ISO's Department of Market Analysis ("DMA") in which, according to Reliant, Dr. Eric Hildebrandt estimated the impact of the Enron strategies to be "tens of millions of dollars." As Dr. Hildebrandt explains in his accompanying testimony, see Exhibit ISO-1, Section I, the ISO's analysis was

limited in several ways and did not represent a comprehensive analysis of the market impacts of all the strategies outlined in the Enron memoranda or all other similar strategies. Due to limitations of both data and staffing, the ISO was able to quantify the effects of only a subset of the specific strategies described in the Enron memoranda; the ISO did not analyze the effects of other strategies specifically described in the Enron memos, or of variations on those practices that were identified in the filing by the California Parties.

Significantly, the ISO's analyses did not quantify the market impacts of several of the key Enron strategies, such as "Fat Boy" and "Ricochet." These strategies that were not analyzed are inextricably linked to broader manipulative practices such as withholding capacity from the real time market and inflating prices in that market by a variety of bidding strategies, as [REDACTED]
[REDACTED]
[REDACTED] by Terry Winter, Chief Executive Officer of the ISO, in previous Congressional testimony (both discussed by Dr. Hildebrandt).

Dr. Hildebrandt rebuts the contentions of Drs. Harvey and Hogan, on behalf of Mirant, [REDACTED] that "Fat Boy" could not have adversely affected, and in fact was beneficial to, the ISO market, and that the ISO recognized as much. He explains that although this strategy would have reduced the amount of generation that the ISO needed to dispatch in real-time, the overall impact was, in fact, to increase the total amount of generation purchased by buyers at the real-time market price, which was, in turn, inflated as a result of various other manipulative bidding and scheduling strategies. The

interaction between overscheduling of load and manipulative bidding strategies is shown by the fact that the sellers that consistently overscheduled the most were also among those bidding highest in real time or employing manipulative bidding strategies in real time.

Dr. Hildebrandt also rebuts the contention of Drs. Harvey and Hogan that the Ricochet strategy had no detrimental effect on prices in the California markets, and lowered prices in other control areas. As he explains, Drs. Harvey and Hogan rely on an erroneous description of the Ricochet strategy that fails to take into account the re-import into California of power originally exported. The ISO's analyses and reports have always distinguished between simple exports and Ricochet. As Dr. Hildebrandt explains, the detrimental purposes and effects of Ricochet included withholding energy from California's forward markets, circumventing hard price caps and reporting/price justification requirements under soft caps; the practice also fostered a false perception of scarcity, which encouraged market participants to bid aggressively and distorted the information available to the ISO and regulators, hindering their ability to take appropriate actions.

PROPOSED FINDING OF FACT NO. 4:

THE ISO'S ANALYSES OF THE CAUSES OF HIGH PRICES IN CALIFORNIA HAVE NOT CONCLUDED THAT THOSE PRICES RESULTED FROM FUNDAMENTAL MARKET FACTORS TO THE EXCLUSION OF SELLER MANIPULATION; MOREOVER, GIVEN THE EVIDENCE ADDUCED BY THE CALIFORNIA PARTIES, THE ISO CAN NO LONGER CONCLUDE THAT ONE FUNDAMENTAL MARKET FACTOR TO WHICH IT PREVIOUSLY ATTRIBUTED SOME PRICE INCREASES, NAMELY SUPPLY SCARCITY, IN FACT EXISTED

In their March 3 submissions, sellers argue generally that high electricity prices in California during the relevant period were the result of certain “market fundamentals,” such as scarcity of supply, high natural gas and emissions costs, and drought conditions that resulted in the reduced availability of hydroelectric generation, and Mirant suggests that the ISO recognized these market fundamentals as the cause of high prices for at least part of the relevant period. See Mirant Pleading at 10.

Sellers are incorrect. As Dr. Hildebrandt explains, see Exh. ISO-1, Section II, although the ISO has recognized that some of the price increases could be traced to underlying market conditions, DMA has also consistently found, and reported, that even after accounting for those conditions, prices were still higher than they would have been absent aggressive exploitation of market design and abuses of market power. Dr. Hildebrandt cites and quotes from DMA reports and his own previous testimony to support his rebuttal of sellers on this point. On the specific issue of the impact of supply scarcity, to which Drs. Harvey and Hogan attempt to attribute much of the increase in prices, Dr. Hildebrandt notes that his previous analyses, submitted in this proceeding by the California Parties, showed that only a small portion of the price increases were due to a true scarcity of supply, as opposed to seller manipulation that took advantage of tight supply, and that evidence submitted by the California Parties shows additional manipulation of both supply and bidding (including reporting of available units as unavailable); Dr. Hildebrandt notes that, in light of the new

evidence, he cannot now conclude that there was any true scarcity of supply during the relevant period.

PROPOSED FINDING OF FACT NO. 5:

SUPPLIERS MISREPRESENT THE DEGREE TO WHICH THE ISO WAS AWARE OF THE SELLERS' USE OF CERTAIN STRATEGIES, AND THEREFORE, THE FACT THAT THE ISO DID NOT TAKE STEPS AGAINST THOSE STRATEGIES DOES NOT SUGGEST THAT THOSE STRATEGIES WERE NOT MANIPULATIVE

In its March 3 submission, ██████ argued that if the ISO's market monitors knew that certain behavior was occurring, and did not propose a Tariff amendment to prohibit it, that behavior cannot now be labeled as "manipulative." This argument overlooks several key points, and as a result, should be rejected.

As Dr. Hildebrandt notes, see *Exh. ISO-1*, Section IV, the crucial concept that Reliant's argument overlooks is that while ISO market monitors might have been aware of certain behaviors in the abstract, or under certain limited circumstances, they often lacked sufficient information to understand the true magnitude of the behaviors and their market impacts. Many of the strategies, in fact, were designed to be hidden from the scrutiny of market monitors. The ISO was simply unable, given its limited access to crucial data and limited resources, to detect many other strategies in a way that would have allowed it to seek to eliminate or remedy their impact on California wholesale electricity markets. As Dr. Hildebrandt also notes, the ability to quickly change market rules, even if a

strategy was detected, was limited – especially when sellers such as Reliant actively opposed corrective actions and denied wrongdoing.

Since the crisis in California began, and as Dr. Hildebrandt documents, the ISO has actively assisted Federal and state regulatory and law enforcement agencies by providing all information in its possession, so that information together with those entities' compulsory process might together be used to identify and remedy anti-competitive practices, including those that violated the ISO Tariff. As Dr. Hildebrandt recounts, sellers often refused to provide the ISO with requested information that would have enabled the ISO to identify prohibited practices; it was only through subsequent exercises of compulsory process that the information came out.⁴

PROPOSED FINDING OF FACT NO. 6:

[REDACTED]

PROPOSED FINDING OF FACT NO. 7:

[REDACTED]

⁴ Reliant's suggestion that the ISO would have had to seek Tariff amendments to deal with the strategies is founded on the mistaken premise that the Tariff did not already prohibit the strategies. As explained under proposed finding of fact number 2, the strategies violated the Tariff as written.

[REDACTED]

PROPOSED FINDING OF FACT NO. 8:

[REDACTED]

[REDACTED]

PROPOSED FINDING OF FACT NO. 9:

THE ALLEGATION BY CERTAIN SUPPLIERS THAT THE ISO ENGAGED IN “MARKET MANIPULATION” IS WITHOUT BASIS, AND IS IRRELEVANT TO THIS PROCEEDING, BECAUSE IT DOES NOT CONSTITUTE EITHER EVIDENCE THAT ANY MARKET PARTICIPANT ENGAGED IN MARKET MANIPULATION OR EVIDENCE COUNTER-INDICATIVE OF MARKET MANIPULATION

In testimony submitted on behalf of the Competitive Supplier Group, Dr. Cicchetti sweepingly asserts that the ISO engaged in market manipulation and

interfered with interstate commerce by de-rating the capacity on Path 15 and two other transmission lines between California and Oregon for a period of thirteen months, beginning in December of 2000. Exh. MAR-1 at 66-68. This assertion is without merit and is irrelevant to the subject matter of this proceeding. To begin with, the assertion is not factually correct. The ISO did not apply transfer limitations on three transmission lines for thirteen months. Second, to the extent that the ISO did apply a transfer limitation, its use was authorized by the ISO Tariff, Dispatch Protocol 6.9.1, and was consistent with WECC and NERC policy. Third, action taken by the ISO in order to keep the lights on is not relevant to the scope of this proceeding and the question of whether market participants engaged in market manipulation; nor does it constitute evidence counter-indicative of market manipulation. For these reasons, Dr. Cicchetti's testimony on this point should be given no credence and the finding of fact proposed by CSG based on that testimony should be rejected.

CSG's proposed finding of fact should also be rejected as an improper, backdoor attempt to obtain a determination by FERC on a serious allegation that a legal violation has occurred without affording all interested parties, including the ISO, the opportunity to address the matter through testimony and briefs. FERC should not countenance such objectionable behavior by CSG. If any market participant believes it can show, both legally and factually, that the ISO did something improper, it can bring its case in another forum where the issue can be fully litigated and the ISO can present testimony and arguments to refute the allegations.

CONCLUSION

For the reasons stated above and in the accompanying exhibits, the Commission should make the findings of fact proposed by the ISO, order the relief discussed herein, and refuse to make findings of fact proposed by any other party that are inconsistent with the ones proposed by the ISO.

Respectfully submitted,



J. Phillip Jordan
Michael Kunselman

Charles F. Robinson
General Counsel
Gene Waas
Regulatory Counsel

The California Independent
System Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630
Tel: (916) 608-7049

Swidler Berlin Shereff Friedman, LLP
3000 K Street, N.W., Suite 300
Washington, DC 20007
Tel: (202) 424-7500

Dated: March 20, 2003

Submitter (Party Name)	California Independent System Operator Corporation
Index Exh. No.	ISO-1
Privileged Info (Yes/No)	No
Document Title	Prepared Rebuttal Testimony of Dr. Eric Hildebrandt on Behalf of the California Independent System Operator Corporation
Document Author	Dr. Eric Hildebrandt
Doc. Date (mm/dd/yyyy)	03/202003
Specific finding made or proposed	See Executive Summary for complete listing of all proposed findings.
Time period at issue	Between 5/2000 and 6/2001
Docket No(s) and case(s) finding pertains to	EL00-95; EL00-98
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	See Executive Summary
Party/Parties performing impermissible conduct	Sellers of Energy and Ancillary Services into Markets Operated by the California Independent System Operator Corporation and the California PX.

PROTECTED MATERIALS REDACTED – PUBLIC VERSION

**THE UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

San Diego Gas & Electric Company,)	
Complainant,)	
)	
v.)	Docket No. EL00-95-069
)	
Sellers of Energy and Ancillary Services)	
Into Markets Operated by the California)	
Independent System Operator and the)	
California Power Exchange,)	
Respondents.)	
)	
Investigation of Practices of the California)	
Independent System Operator and the)	Docket No. EL00-98-042
California Power Exchange)	

**PREPARED REBUTTAL TESTIMONY OF
DR. ERIC HILDEBRANDT ON BEHALF OF
THE CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

1 **Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS**

2 A. My name is Dr. Eric Hildebrandt and I am the Manager of Market

3 Investigations for the California Independent System Operator Corporation

4 ("ISO"). My business address is 151 Blue Ravine Road, Folsom, CA

5 95630.

6

1 **Q. IN WHAT CAPACITY ARE YOU EMPLOYED?**

2 A. As the Manager of Market Investigations, I have worked extensively on
3 analysis of the overall performance and competitiveness of California's
4 Energy¹ and Ancillary Services markets, analysis and mitigation of local
5 market power, and development and analysis of system market power
6 mitigation options. During the 2000-2001 period covered in these
7 proceedings, I played a lead role in analyzing and reporting on market
8 conditions and outcomes in California's wholesale energy markets. Over
9 the last two years, I have continued to work extensively on the issue of
10 how refunds may be determined to ensure just and reasonable outcomes
11 for participants in California's wholesale Energy market. Over the last
12 year, I have also performed extensive analysis of the type of scheduling
13 and trading practices outlined in the "Enron Memos." ²

14

15 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
16 **QUALIFICATIONS.**

17

18 A. I hold a B.S. degree in Political Economy from Colorado College, and an
19 M.S. and a Ph.D. in Energy Management and Policy from the University of
20 Pennsylvania. I have specialized in economic analysis and research
21 relating to energy issues for over fifteen years, with an emphasis on
22 performing economic analysis, market research, and planning and

¹ Capitalized terms otherwise not defined in my testimony are defined in the ISO Tariff, Appendix A – Master Definitions Supplement.

² The Enron Memos are included in the record as Exhibits CA-78 and CA-79.

1 evaluation studies for the electric utility industry. I began my career in
2 energy research at the Center for Energy and Environment at the
3 University of Pennsylvania, and then worked for over six years as an
4 economic consultant to the electric utility industry with the firms of Xenergy
5 Inc. and Hagler Bailly Consulting in Philadelphia, Pennsylvania. Prior to
6 joining the ISO in 1998, I worked for over three years at the Sacramento
7 Municipal Utility District as Supervisor of Monitoring and Evaluation.

8

9 **Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE COMMISSION?**

10 A. I have provided written and oral testimony in these proceedings on behalf
11 of the ISO pursuant to the Federal Energy Regulatory Commission's
12 ("Commission" or "FERC") July 25, 2001 Order on the subject of the
13 determination of refunds. I have also provided written and oral testimony
14 in proceedings related to RMR contracts in California (Docket Nos. ER98-
15 496-000, ER98-1614-000, ER98-2145-000 and ER99-3603).

16

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. The purpose of my testimony is to rebut a variety of claims made by
19 several parties in their March 3, 2003 filings in this proceeding. The major
20 points addressed in my testimony are as follows:

21 (1) First, I rebut claims made by several parties that the ISO, in
22 analyzing the practices outlined in the Enron memos, concluded that these
23 practices by Enron and other sellers "had no significant impact on prices

1 in, or the function of, the California market,”³ and that I have previously
2 concluded that these practices only “resulted in tens of millions of dollars
3 in potential impacts in a multi-billion dollar market.”⁴ In responding to
4 these claims, I describe how my previous analysis of selected individual
5 strategies was, by necessity, limited to a relatively small subset of all the
6 manipulative strategies employed by sellers which, individually and in
7 combination with other manipulative practices, have been shown by the
8 California Parties to have inflated prices and distorted other market
9 outcomes.

10 (2) Second, I rebut the contention made by Mirant that because the
11 ISO recognized a variety of fundamental market forces that contributed to
12 high prices from 2000 through mid-2001, it therefore follows that “market
13 manipulation” had no material role in these price increases.⁵ In doing so, I
14 review a variety of analyses performed by the ISO which, in fact, reached
15 the opposite conclusion: namely, that after taking fundamental market
16 forces in account, prices were *still* significantly above competitive levels
17 due to a variety of bidding and scheduling strategies employed by a wide
18 variety of sellers which operated to unduly exploit market design flaws and
19 market conditions, circumvent and take unfair advantage of market rules,

³ Reliant’s Submission of Evidence Counter-Indicative of Market Manipulation (“Reliant Pleading”) at 22.

⁴ Reliant Pleading at 23, n. 32.

⁵ Executive Summary and Index of Relevant Material of Mirant Americas Energy Marketing, LP, *et al.* (“Mirant Pleading”) at 10.

1 and abuse the tremendous market power that existed due to the
2 aforementioned factors.

3 (3) Third, I rebut the contention [REDACTED], that the practices
4 documented in the California Parties' March 3 submission and previous
5 analyses by the ISO represent merely "economically rational" ⁶ behavior
6 rather than precisely the type of market behavior that is specifically
7 described and subject to responsive action under the ISO Tariff and
8 Protocols.

9 (4) Fourth, I rebut Reliant's contention that market monitors were
10 aware of all the various strategies and practices at issue in these
11 proceedings, as well as their consequences, but failed to challenge them.
12 In addition to explaining the error of this assertion, I rebut Reliant's
13 argument that such practices cannot be deemed to be violations of market
14 rules if ISO market monitors are aware of the possibility of the occurrence
15 of such activities, but do not attempt to modify the ISO Tariff to specifically
16 prohibit them. ⁷

17 (5) Fifth, I rebut a variety of other allegations in the parties' March 3
18 submissions that misrepresent and/or contradict specific statements,
19 reports, or other pieces of information provided by the ISO in these
20 proceedings.

21 (6) Finally, I respond to the recommendation of various sellers
22 regarding the appropriate remedy that should be imposed by the

[REDACTED]

1 Commission in these proceedings. While sellers generally argue that it
2 would be inappropriate to impose any financial sanctions beyond those
3 currently contained within the scope of Judge Birchman's recommendation
4 to the Commission, I concur with the California Parties that, in order to
5 mitigate the market impacts of the various manipulative practices that
6 have been demonstrated to have been engaged in by suppliers, price
7 mitigation should be applied to all transactions from May 2000 through
8 June 2001.

9
10 **I. ISO CONCLUSIONS WITH RESPECT TO THE IMPACT OF THE**
11 **ENRON STRATEGIES ON CALIFORNIA WHOLESALE ELECTRICITY**
12 **MARKETS**

13
14
15 **Q. SELLERS ARGUE THAT THE ISO, UPON ANALYZING THE**
16 **STRATEGIES OUTLINED IN THE ENRON MEMOS, CONCLUDED**
17 **THAT THOSE STRATEGIES HAD NO SIGNIFICANT IMPACT ON**
18 **PRICES OR THE FUNCTIONING OF THE CALIFORNIA MARKET.**
19 **SEE, E.G., RELIANT PLEADING AT 22. DO YOU AGREE?**

20
21 **A. No. On the contrary, I believe that the type of practices outlined in the**
22 **Enron Memos, in combination with many of the other practices outlined in**
23 **the California Parties' March 3 submission, had a very significant**
24 **detrimental impact on the market, and that ISO analyses of these**
25 **practices have never reached the opposite conclusion.**

26
27 First, sellers cite studies and statements out of context to support their
28 allegations. For example, Reliant alleges that:

1 [T]he CAISO, as well as other experts, have analyzed the strategies
2 outlined in the so-called 'Enron memoranda' and concluded that the
3 strategies had no significant impact on prices in, or the function of, the
4 California market.

5
6 Reliant Pleading at 22.

7
8 And in support of this conclusion, Reliant contends that:

9 Dr. Hildebrandt of CAISO testifies that casting "a broad net" and trying
10 "to capture the upper bound" of the impact of the Enron strategies
11 resulted in "tens of millions of dollars in potential impacts" in a multi-
12 billion dollar market.

13
14 Reliant Pleading at 23, n.32 (citing Exh. REL-12).

15

16 In reality, the report⁸ and testimony cited by Reliant clearly indicate that
17 the ISO's analysis was, by necessity, limited in a variety of ways, and by
18 no means represented a comprehensive analysis of the market impacts of
19 all of the practices outlined in the Enron Memos, or the impacts of all other
20 similar practices. For example, the reference to "tens of millions of dollars
21 in potential impacts" cited by Reliant was accompanied by this additional
22 explanation of the limits of the ISO analysis:

23 I think in every case it turned out we, the ISO, didn't have the entire . . .
24 the complete set of information that would be necessary for me to draw
25 conclusions as to whether specific transactions . . . were indeed the
26 result of Enron strategies . . . [w]hen you look in terms of results, we
27 did come up, I think, with tens of millions of dollars in terms of potential
28 impacts . . . I would emphasize, however, that . . . while we
29 intentionally cast a broad net, we don't know what we don't know. A lot
30 of the strategies involve . . . based on the Enron memos, intentional
31 misinformation or scheduling to hide . . . the strategy being undertaken

⁷ *Id.* at 4:22-5:5.

⁸ Analysis of Trading and Scheduling Strategies Described in Enron Memos, ISO Department of Market Analysis (October 4, 2002) ("Enron Report"), available on the ISO's website at <http://www.caiso.com/docs/2002/11/26/2002112610411219558.pdf>.

1 So again as a caveat, clearly we don't know to the extent the
2 same strategies were employed but don't show up in the ISO data, or
3 only in other records we don't have access to.

4
5 Exh. REL-12 at 5:20-6:14.

6
7 First, due to limitations on available data and staffing resources at the
8 ISO, the ISO's analysis of the Enron games also focused only on a sub-
9 set of practices *specifically* described in the Enron Memos, and did not
10 encompass variations of these activities or other similar practices, such as
11 those identified by the California Parties based on the detailed data and
12 analysis contained in their March 3 submission.

13
14 In addition, the analysis of financial impacts in the ISO's Enron Report,
15 which represent "tens of millions of dollars" of market impacts, was limited
16 to the *subset* of practices specifically described in the Enron Memos for
17 which some measure of potential impacts could be quantified based on
18 the data and resources then available to the ISO. This subset included:
19 (1) strategies involving cut counterflow schedules, (2) sellback of Ancillary
20 Services capacity in the Hour Ahead Market, and (3) counterflow
21 payments for the sub-set of potential Death Star-like schedules that can
22 be identified by data available to the ISO.⁹

23

⁹ As explained in the Enron Report, Death-Star like schemes involving schedules submitted through different Scheduling Coordinators and/or which are divided into different schedules so that schedules cannot be matched by quantities may not be identified in the ISO's analysis. See *id.* at 8, n.7, and 11 (note to Table 2).

1 However, the ISO's Enron Report did not quantify *at all* the overall market
2 impact of several key strategies outlined in the Enron Memos, such as
3 "Fat Boy" and "Ricochet", [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED] For example, the connection between
8 strategies such as "Fat boy" and "Ricochet" and the exercise of market
9 power has been previously pointed out by the ISO in a summary of the
10 Enron strategies included in Terry Winter's July 22, 2002 testimony before
11 a Congressional committee¹⁰, in which the ISO summarized the market
12 impacts of the Ricochet strategy as follows:

13 Exacerbated the impact of overall market power on system reliability
14 and costs to consumers. Ricochet scheduling allowed sellers to
15 exercise market power and take advantage of tight supply/demand
16 conditions by effectively withhold power from the Day Ahead market
17 and demanding high prices in real time. Helped defeat the
18 effectiveness of price caps in the absence of region-wide market power
19 mitigation. Financial impact on consumers will ultimately depend on
20 level of refunds ordered by FERC for sales of imports to buyers in ISO
21 system (including CERS) during May 2000-2001.

22
23 Exh. REL-22 at 51-52.
24

25 The same report noted that:

¹⁰ Statement of Terry Winter, President and Chief Executive Officer California Independent System Operator Corporation Before the Congress of the United States House of Representatives Subcommittee on Energy Policy, Natural Resources, and Regulatory Affairs (July 22, 2002) ("Winter Testimony"). This testimony is available on the ISO's website at www.caiso.com/docs/09003a6080/18/93/09003a6080189353.pdf

1 The Enron memo did not discuss use of “ricochet” schedules as a way
2 of “MW-laundering”, or trying to circumvent the ISO’s hard price caps
3 in effect until December 2000 or to circumvent cost-justification/refund
4 obligations under the “soft caps” in effect starting in December 2000.
5 However, “ricochet” schedules also represent one of the key
6 mechanisms that could be used in trading strategies designed to
7 “launder” MWs generated in California into imports in order to
8 circumvent price mitigation rules in effect in the ISO system.

9
10 *Id.* at 51.

11 In his Senate testimony, Mr. Winter also noted the symbiotic relationship
12 between market power and various gaming strategies outlined in the
13 Enron memos, noting that market power “has been the enabler for many
14 of the gaming strategies identified in these markets” and that “the exercise
15 of market power by suppliers that has cost California consumers billions of
16 dollars since the summer of 2000.” Winter Testimony at 1-2.

17
18 In sum, the ISO’s attempt to quantify some of the financial impacts of the
19 Enron-like strategies in no way represents the total market impact of these
20 strategies by themselves, much less the total impact of these strategies in
21 combination with other forms of manipulation, market power abuses and
22 gaming.

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1 Q. DRS. HARVEY AND HOGAN ASSERT THAT THE ISO HAS
2 RECOGNIZED THAT "FAT BOY" REDUCES THE AMOUNT OF
3 ENERGY THE ISO NEEDED TO PROCURE IN REAL TIME TO
4 SUPPORT THEIR CONCLUSION THAT THE ISO AGREES THAT THE
5 OVERALL MARKET EFFECTS OF "FAT BOY" WERE BENIGN. EXH.
6 MIR-1 AT 250. DO YOU AGREE WITH THIS LINE OF REASONING?
7

8 A. No, I do not. The "Fat Boy" strategy was a mechanism used by sellers to
9 raise overall market costs by withholding capacity from the forward
10 markets, and then employing a variety of other means to raise prices in
11 the real time market. The statements cited by Drs. Harvey and Hogan
12 simply refer to the fact that, mathematically, generation scheduled through
13 the "Fat Boy" strategy may decrease the amount of additional generation
14 that the ISO needed to dispatch in real time. However, the overall market
15 impact of this strategy was to *increase* the total amount of generation
16 purchased by *buyers* through the real time market at the real time price,
17 which was, in turn, inflated by a variety of other manipulative bidding and
18 scheduling strategies.

19
20 The connection between the overscheduling of load and manipulative
21 bidding strategies aimed at spiking real time prices is evidenced by the
22 fact that [REDACTED]

23 [REDACTED]

24 [REDACTED]

¹¹ See Exh. CA-2 at 167-168 (Table 1.1 of Appendix I). Note that for the period from January 1, 2000 to April 30, 2001, Powerex overscheduled load using PG&E Energy Services as the Scheduling Coordinator.

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13
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¹² It should be noted that although I indicated in the internal ISO memo produced as Exh No. CA-237 that "Powerex did not violate any market rules" this memo was written in the fall of 2000 in response to a request from the ISO's General Counsel as to whether there were any monitoring or compliance actions pending that would warrant non-payment of funds due to Powerex. Thus, in that context, the memo, in effect, simply concludes that sufficient evidence did not exist to authorize the ISO to withhold payment to Powerex at that time. At the time this memo was written, for instance, DMA was completely unaware of Powerex's practice of overscheduling significant amounts of load, their clear intent to manipulate the ISO's Target Price in order to inflate the price for generation scheduled against non-existent load, as evidenced in internal Powerex emails, see Exhs. CA-3 at 55; CA-176 at 296, or any of the other additional evidence relating to manipulative behavior on the part of Powerex produced in this proceeding.

1 Q. IN A SOMEWHAT SIMILAR VEIN, DR. TABORS, TESTIFYING ON
2 BEHALF OF POWEREX, CLAIMS THAT OVERSCHEDULING BY
3 SUPPLIERS HAD A BENEFICIAL IMPACT ON ISO RELIABILITY, AND
4 THAT YOU ACKNOWLEDGED THIS BENEFIT IN THE ENRON
5 REPORT. EXH. PWX-24 (PREPARED TESTIMONY OF DR. RICHARD
6 D. TABORS) AT 37:10-38:3. HOW DO YOU RESPOND TO DR.
7 TABORS ON THIS ISSUE?
8

9 A. Contrary to Dr. Tabors's assertions, I have never indicated that the
10 overscheduling of load had a *beneficial* impact on system reliability. As I
11 have just testified, in the report quoted by Dr. Tabors, I simply noted that,
12 mathematically, generation scheduled through the "Fat Boy" strategy
13 decreases the amount of additional generation that the ISO needed to
14 dispatch in real time. However, when viewed in combination with the
15 sellers' bidding strategies in the forward market, the "Fat Boy" strategy
16 was ultimately used to increase overall activity in and reliance on the real
17 time market, which certainly did not have had a beneficial impact on ISO
18 system reliability.
19

20 In addition, it should be noted that in response to questions about the
21 impact of overscheduling of load on system reliability, the ISO's CEO
22 Terry Winter pointed out a variety of reasons why, in practice,
23 overscheduling of load can cause reliability problems for system operators
24 even in the face of significant underscheduling by the UDCs, ranging from
25 a decrease in the ISO's ability to manage loads and generation to
26 potential over procurement of energy in real time, and an increase in real
27 time congestion. See Exh. REL-18 at 16-18.

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Q. DRS. HARVEY AND HOGAN CONTEND THAT, CONTRARY TO CLAIMS BY THE ISO, THE "RICOCHET" TRADING STRATEGY DID NOT HAVE ANY IMPACT ON THE PRICE OF POWER IN THE FORWARD OR SPOT MARKETS, OTHER THAN TO KEEP CALIFORNIA PRICES IN BALANCE WITH THOSE IN SURROUNDING AREAS. EXH. MIR-1 (PREPARED DIRECT TESTIMONY OF SCOTT M. HARVEY AND WILLIAM W. HOGAN) AT 254:11-255:16. DO YOU AGREE WITH THIS CLAIM?

25

26

27

A. No. First and foremost, I disagree with Drs. Harvey and Hogan's conclusion because the practice they describe and endorse is, in fact, not "Ricochet" at all. The practice mistakenly termed "Ricochet" by Drs.

¹³ For example, the transcript of a December 1, 2000 telephone conversation between ISO and Puget Sound, introduced as Exhibit MAR-14, illustrates a circumstance where a supplier, Puget, had power available that was desperately needed to meet reliability needs of the ISO system, but which had not been - for whatever reason -- scheduled in forward markets or bid as supplemental energy.

1 Harvey and Hogan involves nothing more than exporting power from
2 California for sale in another region where market prices are higher (with
3 no re-sale of that energy back into California). The "actual" Ricochet
4 strategy, as described in the Enron Memos, however, involves a supplier
5 exporting power from the ISO system on a forward basis, with the intent of
6 offering this power for sale back to the ISO as an import in real-time in
7 order to avoid a price cap or price scrutiny. In fact, both the Enron Memos
8 and previous reports by the ISO addressing the Enron strategies
9 differentiate between these two practices ("Export of Power" on one hand
10 and "Ricochet" on the other) and the ISO has addressed these activities
11 separately. Because Drs. Harvey and Hogan's conclusion is based on a
12 false premise, it is unsupportable.

13

14 **Q. WHAT IMPACT DID THE RICOCHET STRATEGY ACTUALLY HAVE**
15 **ON THE MARKET?**
16

17 A. I believe the strategy described as "Ricochet" in the Enron memos, and
18 similar strategies such as that referred to as "MW Laundering," and the
19 different variations of these strategies, were not benign, as claimed by
20 Drs. Harvey and Hogan, but had a significant detrimental impact on
21 consumers in California's wholesale energy market. Various export/import
22 strategies, such as Ricochet, provided an additional mechanism through
23 which suppliers intentionally withheld energy from the forward markets
24 and bolstered the ability of suppliers to increase prices in the real time

1 market. As noted in an ISO report submitted with the testimony of Terry
2 Winter, the "Ricochet" strategy described in the Enron Memos:

3 [e]xacerbated the impact of overall market power on system reliability
4 and costs to consumers. Ricochet scheduling allowed sellers to
5 exercise market power and take advantage of tight supply/demand
6 conditions by effectively withhold[ing] power from the Day Ahead
7 market and demanding high prices in real time.

8
9 Exh. REL-12 at 50-51.

10

11 In addition, as discussed in the Enron Report, I believe variations of this
12 strategy were used to circumvent a variety of market rules and
13 requirements, including: (1) the hard price caps that were in effect until
14 December 2000, and (2) the cost reporting and refund obligations for
15 sales made above the \$250 and \$150 soft price caps in effect from
16 December 2000 through the middle of 2001.

17

18 I also believe the export of power that was actually available to serve load
19 within the ISO system played a key role in fostering a false perception of
20 scarcity, which, in turn had two major detrimental impacts on the market.

21 First, the false sense of scarcity created by the "Ricochet" and other
22 withholding strategies would have affected other Market Participants'
23 behavior in a way that further inflated market prices by encouraging those
24 Participants to bid excessively or withhold supplies. As noted by Drs.
25 Harvey and Hogan, actions that simply contribute to a market participants'
26 perception of the chance that actual scarcity may exist may have a
27 significant impact on bidding and market outcomes. Exh. MIR-1 at 147:6-

1 18. In addition, I believe that this false sense of scarcity limited the ability
2 of the ISO and Federal and State regulators and to differentiate between
3 true supply scarcity in the WSCC versus the amount of available supply
4 that just was not being offered in California's forward and Real-Time
5 markets. The effect of this strategy, combined with public statements by
6 sellers that no such withholding was being employed, was to distort the
7 information that was available to the ISO and regulators responsible for
8 decisions about purchasing policies, price caps and other options
9 available to defend against market manipulation.

10

11 **Q. DRS. HARVEY AND HOGAN ARGUE THAT EVEN IF THE RICOCHET**
12 **STRATEGY RAISED PRICES IN THE ISO SYSTEM, SUCH PRACTICES**
13 **WOULD HAVE HAD THE BENEFICIAL EFFECT OF KEEPING PRICES**
14 **IN BALANCE ACROSS THE WESTERN REGION. EXH. MIR-1 at**
15 **254:9-18. WHAT IS YOUR RESPONSE TO THIS CLAIM?**
16

17 A. Again, it is significant that Drs. Harvey and Hogan's argument is based on
18 a false "straw man" that incorrectly defines the Ricochet strategy as simply
19 the export of power to regions where prices are higher. In reality,
20 export/import strategies such as the Ricochet strategy described in the
21 Enron Memos would have also served to "export" high prices to
22 surrounding areas. As explained in the ISO's Enron Report, evidence
23 shows that during 2000, prices in surrounding areas of the West tended to
24 be driven by prices within the ISO system, rather than the other way
25 around. See Enron Report at 5-7. Under these conditions, any strategy
26 that facilitated price increases with the ISO system would also increase

1 costs in other spot markets in the West. This also points out the flawed
2 circularity of the sellers' argument that high prices within the ISO system
3 were caused by high prices in other areas.

4

5 **II. THE IMPACT OF FUNDAMENTAL MARKET CONDITIONS VERSUS**
6 **MARKET MANIPULATION IN EXPLAINING THE SOURCE OF HIGH**
7 **PRICES IN CALIFORNIA DURING THE RELEVANT PERIOD.**

8

9

10 **Q. SELLERS ARGUE, GENERALLY, THAT THE HIGH PRICES IN**
11 **CALIFORNIA DURING 2000-MID 2001 CAN BE ATTRIBUTED**
12 **ENTIRELY TO "FUNDAMENTAL" MARKET FORCES. IN SUPPORT**
13 **OF THIS CLAIM, SEVERAL SELLERS CITE TO ISO MATERIALS,**
14 **SUGGESTING THAT THE ISO AGREES WITH THIS EVALUATION.**
15 **E.G., MIRANT PLEADING AT 10. WHAT IS YOUR RESPONSE TO**
16 **THESE SELLERS?**

17

18 **A.** They clearly misrepresent the ISO on this point, and ignore explicit
19 statements by the ISO that these prices cannot be explained entirely by
20 fundamental market forces. While the ISO has, indeed, recognized that a
21 portion of the price increases in California during the relevant period were
22 attributable to various underlying supply and demand conditions, the DMA
23 has also consistently found and reported that even after accounting for
24 these underlying conditions, prices were dramatically higher than would
25 have resulted absent the aggressive exploitation of market design flaws
26 and abuses of market power by individual market participants.

27

1 For instance, in an August 10, 2000 report provided to FERC in the
2 context of the Commission's Investigation of Western Bulk Power
3 Markets,¹⁴ the DMA noted that:

4 . . . there are many hours of extremely high prices when supply and
5 demand are relatively tight, but there is no apparent shortage of
6 supply. During these hours high prices are most likely the result of
7 market power. The presence of market power can be verified by a high
8 bid price over variable cost by many suppliers in the ISO's markets.
9 The highest variable cost of in-state generators is below \$100/MWh,
10 while many suppliers routinely bid a significant part of their capacity at
11 \$750 (the price cap level). These bids had to be selected to meet the
12 demand during high load periods.

13
14 *Id.* at 5.

15
16 The August 10, 2000 report further explained that:

17
18 The observed market power was the combined effect of the bidding
19 activity of in-state and out-of-state generation resources. The available
20 data and tools do not allow detailed analysis of the market power of
21 out-of-state generation owners. The ISO, however, is not aware of any
22 acute regional shortages in most of the high price hours. The high
23 prices bid by out-of-state suppliers as well as the high prices quoted to
24 ISO's out-of-market calls are indications of the market power of out-of-
25 state suppliers.

26
27 *Id.*

28
29 Additionally, in support of an October 20, 2000 filing with FERC by the
30 ISO, I submitted an affidavit with the results of a more systematic and
31 quantitative analysis of market power and any potential scarcity of supply
32 within the CAISO system.¹⁵ The ISO's comments on the Commission's
33 November 1, 2000 Order in this proceeding were also supplemented with

¹⁴ Report on California Energy Market Issues and Performance: May-June, 2000, ISO Department of Market Analysis (August 8, 2000), included in the record at Exhibit MIR-13.

¹⁵ Declaration of Eric Hildebrandt, filed with California ISO's Proposed Offer of Settlement in Docket Nos. EL00-95-000, et al. (October 20, 2000).

1 the results of a quantitative analysis by DMA staff of the impact of market
2 power, along with other factors, on market costs. As explained in this
3 report:¹⁶

4 [S]ince late May of this year [2000], the combination of very tight
5 supply and demand conditions — in conjunction with very limited ability
6 of consumers to reduce consumption in response to high prices — has
7 created the opportunity for the persistent exercise of market power in
8 California's wholesale energy markets. The exercise of this market
9 power has inflated wholesale energy costs significantly above levels
10 that would have resulted under competitive market conditions, even
11 after taking into account fundamental market factors driving up costs
12 and hours of potential scarcity of supply.

13
14 *Id.* at 2.

15 In testimony filed in March, 2001,¹⁷ I re-iterated that:

16 Previous DMA analyses have shown that the high prices observed
17 since May 2000 have been due to the exercise of market power, in
18 combination with several other underlying drivers of that would be
19 expected to increase costs even under perfectly competitive
20 conditions. DMA has developed and presented analyses specifically
21 designed to differentiate between market costs incurred as a result of
22 the exercise of market power, rather than other underlying drivers of
23 cost, including absolute scarcity for capacity during some hours.

24
25 *Id.* at 2-3.

26 Thus, suppliers' suggestion that the ISO's own analysis somehow
27 supports their claim that high prices were the result of underlying market
28 conditions and market design features rather than the deliberate
29 manipulation of market participants is without merit.

30

¹⁶ Analysis of Market Power in California Wholesale Energy Markets, filed in Docket Nos. EL00-95, *et. al.* (November 22, 2000) ("November, 2000 Report").

1 Q. WITNESSES FOR SEVERAL SELLERS, IN PARTICULAR DRS.
2 HARVEY AND HOGAN, CONTEND THAT PRICES WERE HIGH DUE IN
3 LARGE DEGREE TO SUPPLY SCARCITY. EXH. MIR-1 at 147:20-
4 152:19. DO YOU AGREE?
5

6 Previous analyses I have performed on behalf of the ISO indicate that, at
7 most, a very small portion of the high costs incurred during the summer of
8 2000 can be attributed to true scarcity of supply, as opposed to tight
9 supply/demand conditions that allowed prices to be spiked by the actions
10 of a wide range of sellers. See, e.g., Exh. MIR-13; November 2000
11 Report.

12
13 However, evidence submitted by the California Parties in these
14 proceedings indicates that additional suppliers from sources both within
15 and outside of the ISO system were available that I could not factor into
16 these analyses. [REDACTED]

17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]

¹⁷ Further Analyses of the Exercise and Cost Impacts of Market Power In California's Wholesale

1

[REDACTED]

2

[REDACTED]

3

4 Since previous ISO analyses indicated a relatively small margin of
5 potential scarcity during a very limited number of hours, I cannot conclude,
6 in light of this new evidence of withholding, that there was any true
7 scarcity at all during the 2000 through mid-2001 period. I should also note
8 that because of concerns about the possibility of such withholding (which
9 could not be substantiated by the ISO at the time), each of the previous
10 reports referenced above explicitly presented these analyses as estimates
11 of "Potential Scarcity."

12

13 Finally, I would note that perhaps the best empirical indicator of whether
14 any true scarcity existed is whether system emergencies or load
15 curtailments occurred in other parts of the WSCC. The ISO has
16 investigated this issue, but has been unable to identify any such indicators
17 of true scarcity in the WSCC during the period May 2000 through June
18 2001. This provides further evidence that, in fact, there existed during
19 this period little or no true scarcity that might explain high prices, as
20 claimed by Drs. Harvey and Hogan.

21

22 **Q. DRS. HARVEY AND HOGAN SUGGEST THAT ISO STUDIES**
23 **ALREADY FACTORED IN PHYSICAL WITHHOLDING, SINCE THEY**

1 **APPEAR TO BE BASED ON ACTUAL UNIT AVAILABILITIES. EXH.**
2 **MIR-1 AT 153:7-13. ARE THEY CORRECT?**
3

4 No. My previous calculations of shortages were based on actual unit
5 availabilities, and assumed that capacity reported by generators as being
6 unavailable was, in fact, unavailable. However, evidence in this
7 proceeding, which the ISO did not have access to at the time of those
8 calculations, indicates that it was not infrequent for capacity to be reported
9 as being unavailable when in fact it was available. [REDACTED]

10 [REDACTED] This would mean my previous studies actually
11 *underestimated* the total capacity that was actually available.

12
13

14 **Q. DRS. HARVEY AND HOGAN ARGUE THAT THE CALIFORNIA**
15 **MARKET DESIGN REQUIRES GENERATORS TO BID ABOVE**
16 **INCREMENTAL COSTS TO EARN SCARCITY RENTS WHEN TRUE**
17 **SCARCITY EXISTS. EXH. MIR-1 AT 137:4-143:6. WHAT IS YOUR**
18 **RESPONSE TO THIS CLAIM?**

19

20 A. Even if one accepts the theoretical argument made by Drs. Harvey and
21 Hogan, it simply means that the last increment of supply would need to be
22 bid at the price cap (or whatever price would, in theory, represent the
23 “proper” price in times of scarcity). Thus, even in theory, this argument
24 can only justify each supplier bidding their last MW of supply in at the
25 cap.¹⁸

26
27

¹⁸ In practice, I believe that even this would not be necessary since it was widely known, based on observed market outcomes and information on bidding patterns released by the ISO, that a significant amount of capacity was routinely bid in at the price cap by other suppliers.

1 **III. RELATION OF SELLER STRATEGIES TO BEHAVIOR DESCRIBED IN**
2 **THE ISO TARIFF**

3
4 **Q. WERE THE STRATEGIES EMPLOYED BY SELLERS, AS SET FORTH**
5 **IN THE ENRON MEMOS AND THE CALIFORNIA PARTIES MARCH 3**
6 **SUBMISSION MERELY RATIONAL AND PERMISSIBLE BEHAVIOR**
7 **ON THE PART OF SELLERS, AS THOSE SELLERS NOW CLAIM?**
8 ***SEE, E.G., RELIANT PLEADING AT 27-30.***

9
10
11 A. No. The manipulative practices documented in the California Parties'
12
13 March 3 submission and in previous analyses by the ISO do not represent
14 "rational behavior" on the part of sellers in response to design flaws.
15 Instead, they are precisely the type of market behavior that is specifically
16 identified in the ISO's Tariff and Market Monitoring and Information
17 Protocol ("MMIP")¹⁹ as being subject to responsive action by the ISO.
18 Specifically, Sections 2 and 3 of the MMIP provides significant guidance
19 as to which behaviors are prohibited and will be subject to corrective
20 action by the ISO and other regulatory entities, such as FERC.
21 For example, MMIP Section 2.1 indicates that "anomalous market
22 behavior", or "behavior that departs significantly from the normal behavior
23 in competitive markets " shall be evaluated by the ISO in order to
24 determine "whether the continued or persistent presence of such
25 circumstances indicates the presence of behavior that is designed to or
26 has the potential to distort the operation and efficient functioning of a
27 competitive market, *e.g.*, the strategic withholding and re-declaring of
 capacity, and whether it indicates the presence and exercise of market

¹⁹ The MMIP is provided as Exhibit ISO-2 to this filing.

1 power or of other unacceptable practices.” MMIP Section 2.1.1
2 specifically states that “evidence of such behavior may be derived from a
3 number of circumstances,” which includes: (1) withholding of generation
4 capacity under circumstances in which it would be offered in a competitive
5 market; (2) unexplained or unusual redeclarations of generator availability;
6 (3) unusual trades or transactions; (4) pricing and bidding patterns
7 inconsistent with prevailing supply and demand conditions; and (5)
8 unusual activity or circumstances relating to imports or exports. Many of
9 the activities that have been documented in detail in California Parties’
10 March 3 submission and in material submitted as part of the discovery
11 process in this proceeding fall under these categories:

12
13
14
15
16
17
18
19
20
21
22

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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12

13 **Q. DO YOU BELIEVE THAT THESE BEHAVIORS INVOLVED THE**
14 **EXERCISE OF MARKET POWER THAT ADVERSELY AFFECTED THE**
15 **OPERATION OF CALIFORNIA MARKETS (MMIP SECTION 2.3.1)**
16 **AND/OR UNDERMINED THE “EFFICIENCY, WORKABILITY, OR**
17 **RELIABILITY” OF THE ISO MARKETS (MMIP SECTION 2.3.2), OR**
18 **PROVIDED CERTAIN MARKET PARTICIPANTS “AN UNFAIR**
19 **COMPETITIVE ADVANTAGE OVER OTHER MARKET**
20 **PARTICIPANTS” (MMIP SECTION 2.3.2) SUCH THAT THEY WOULD**
21 **BE SUBJECT TO RESPONSIVE ACTION BY THE ISO?**
22

23 Absolutely. Taken collectively, the activities described above reflect a
24 pattern of behavior that prevented the efficient functioning of a competitive
25 market through the exercise of market power and other manipulative
26 practices. The cumulative impact of these behaviors had a significant
27 impact in terms of creating market outcomes that deviate substantially

1 from those that would result under reasonably competitive market
2 conditions.

3

4 **Q. SEVERAL OF THE SELLERS' WITNESSES INDICATE THAT TO THE**
5 **EXTENT THAT MARKET DESIGN FLAWS EXISTED THAT COULD BE**
6 **EXPLOITED BY SELLERS, EXPLOITATION OF THESE FLAWS WAS**
7 **SIMPLY RATIONAL BEHAVIOR? DO YOU AGREE?**

8

9 A. No. All of the sellers' key economic witnesses make this argument. For
10 instance, Drs. Harvey and Hogan devote an extensive portion of their
11 testimony to a discussion of market design flaws and how these may have
12 impacted the market. See Exh. MIR-1 at 106:1-155:13. [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17

18 Even if these witnesses are correct, none of their arguments excuse, in
19 the context of this proceeding, the efforts of sellers to actively exploit
20 market design flaws and tight supply/demand conditions that existed in
21 2000, and the market "meltdown" that occurred in 2001 due to the
22 crushing financial impacts of suppliers' actions in 2000. The ISO's Tariff
23 and Protocols explicitly anticipated that market design flaws would be
24 encountered, could have serious impacts on market efficiency and other
25 participants, and therefore, made them subject to responsive actions,

1 including recommending the imposition of fines, penalties and other
2 sanctions to appropriate regulatory agencies.

3

4

5 **IV. THE ISO'S KNOWLEDGE OF AND REACTIONS TO SELLERS'**
6 **BEHAVIOR DURING THE RELEVANT PERIOD**

7

8 **Q. RELIANT SUGGESTS THAT IF ISO MARKET MONITORS KNEW**
9 **ABOUT CERTAIN BEHAVIOR AND DID NOT PROPOSE A TARIFF**
10 **AMENDMENT TO PROHIBIT IT, THEN THAT BEHAVIOR CAN NOT BE**
11 **SUBSEQUENTLY LABELED AS "MANIPULATIVE." RELIANT**
12 **PLEADING AT 33. DO YOU AGREE?**

13

14 **A. No. Reliant's argument ignores several realities:**

15

16 1) First, while various parts of the ISO may have been aware of many
17 behaviors in the abstract, or under certain, limited circumstances, the ISO
18 often lacked information necessary to assess the true magnitude of these
19 behaviors and their market impacts. This is partially due to the fact that
20 many of the gaming strategies identified in these proceedings were
21 specifically designed to be hidden from the scrutiny of system operators
22 and market monitors. For example, strategies such as "Death Star," the
23 sell-back of Ancillary Services that could not have been provided in the
24 first place, and FTR gaming strategies, were all designed in a way that
25 can make detection by the ISO very difficult. See Exh. REL-22 at 45.

26

1 2) Second, Reliant's argument also ignores the fact that the ability of
2 market monitors and other entities to quickly change market rules was
3 limited. For example, as summarized in an ISO report submitted with
4 Terry Winter's July 22, 2002 testimony before the U.S. Senate:

5 The ISO was very much aware and concerned about [the Ricochet
6 strategy] problem based on monitoring of scheduled exports [and]
7 subsequent imports in real time The ISO's concern about the high
8 prices being demanded by imports (despite no actual shortages of
9 reserves or load shedding being reported by other control areas) was
10 identified to FERC in Summer 2000 Since October 2000, the ISO
11 had been requesting west-wide mitigation measures that effectively
12 addressed potential "MW laundering" which FERC ultimately approved
13 in the June 19, 2001 Order.

14
15 Exh. REL-22 at 51-52.

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22

23 3) Finally, Reliant's arguments overlook the fact that since the summer of
24 2000, the ISO's Market Monitor has actively assisted a variety of Federal
25 and State regulatory and law enforcement entities in the investigation of
26 market power, gaming and other manipulative practices. In the context of
27 these investigations, the ISO's Market Monitors have provided, pursuant

1 to Section 3.3.4 of the MMIP, extensive information and evidence
2 regarding manipulative and anti-competitive practices detected and/or
3 suspected by the ISO. The ISO provided the information and
4 documentation in its control, recognizing that full investigation and
5 analysis of these behaviors required information held by suppliers that
6 could, in practice, only be obtained by other regulatory and law
7 enforcement entities with the power to compel production of such data.

8

9 **Q. DOES THE MMIP GIVE ISO MARKET MONITORS THE AUTHORITY TO**
10 **COMPEL MARKET PARTICIPANTS TO PROVIDE INFORMATION**
11 **THAT MIGHT BE NEEDED TO INVESTIGATE POTENTIAL**
12 **MANIPULATIVE CONDUCT?**

13

14 A. Section 4.5.1 of the MMIP authorizes the ISO to request that Market
15 Participants submit any information or data determined by the ISO to be
16 potentially relevant to an investigation under the MMIP. Failure by an ISO
17 Participant to provide information requested, or to otherwise cooperate in
18 the Market Surveillance Unit's data collection or investigation activities,
19 may be treated as grounds for action against that ISO Participant,
20 including the imposition of penalties or sanctions. See MMIP, Section
21 4.5.2.

22

23 In practice, however, the ability of ISO Market Monitors to fully investigate
24 suspicious practices to a degree that would allow for the implementation of

²⁰ See California Parties Supplemental Evidence of Market Manipulation by Sellers, Proposed

1 corrective actions has been undercut by the fact that many Participants
2 have refused to provide the ISO with the information requested pursuant
3 to the MMIP. For example, in the case of the ISO's investigation of RMR
4 unit outages at the Huntington Beach plant in the spring of 2000, Williams
5 and AES refused to comply with requests for information issued by the
6 ISO. This investigation was ultimately referred to FERC for further
7 investigation. Subsequently, tape recordings obtained by FERC staff
8 ultimately provided clear evidence that the ISO's suspicions were correct
9 and that those Participants had engaged in practices specifically identified
10 in the MMIP as subject to responsive action, including the physical
11 withholding of capacity and abuse of RMR unit status.

12
13 Similarly, in January 2001, the ISO requested, pursuant to the MMIP, that
14 all sellers provide cost justification to the ISO for any sales over the \$250
15 "soft cap" in effect after December 8, 2000, as well as sales over the \$250
16 "soft cap" in effect starting in January 2001. The request included Cost
17 Reporting Guidelines that identified specific data that the ISO needed to
18 investigate further suspicions regarding "Ricochet trades," "MW
19 laundering," and "wash trades" for electricity and gas that may have been
20 used both to manipulate public information on prevailing prices and to
21 establish an inflated cost basis for justifying sales. Almost all of the sellers
22 ignored this request. Ultimately, evidence submitted as part of the March

1 3 submissions and in other regulatory proceedings shows that had
2 suppliers complied with this request, the ISO would have had the
3 information needed to assess the precise nature and scope of the various
4 manipulative practices mentioned above.

5
6 To conclude, these examples further illustrate the perverse nature of
7 Reliant's argument that the ISO's general knowledge or suspicions about
8 certain practices somehow means that such practices were not
9 "manipulative" and subject to sanction as part of these proceedings.

10

11 **V. OTHER ISSUES**

12

13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
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²² As noted in the memo, cases involving Dynegy were not included since these had already been referred to FERC.

²³ In referring this matter to FERC, the ISO offered to make transcripts of these incidents available, but additional information on these incidents was never requested by FERC staff.

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[REDACTED]

VI. RECOMMENDATION FOR CORRECTIVE ACTIONS

Q. SELLERS CONTEND THAT IT WOULD BE INAPPROPRIATE TO IMPOSE ANY ADDITIONAL REMEDIES IN THESE PROCEEDINGS. E.G., RELIANT PLEADING AT 6-7. DO YOU AGREE?

A. No. There is substantial evidence that the excessively high prices in California's wholesale market from May 2000 through June 2001 cannot be attributed simply to underlying market conditions, true scarcity, or market design flaws. Rather, the combination of relatively limited amounts of excess supply, market design flaws and structural limitations, and other conditions making wholesale electricity markets subject to manipulation, were actively and aggressively exploited by a wide range of Market Participants, utilizing numerous strategies involving the exercise of market power, abuse and violation of market rules, and other manipulative practices. This behavior further inflated prices significantly above levels that can be attributed simply to market conditions and design flaws. This is precisely the type of behavior and circumstances that the ISO's MMIP is designed to help protect against by providing for a variety of corrective actions by the ISO and regulatory bodies such as FERC.

1 Q. WHAT REMEDY DO YOU BELIEVE IS MOST APPROPRIATE?
2

3 A. At a minimum I believe the Commission should impose [REDACTED]

4 [REDACTED]
5 [REDACTED] In effect, this remedy would leave all participants
6 in the same position they would have been in absent the market abuses
7 and manipulative practices that dramatically inflated prices during the May
8 2000 through June 2001 time period. In addition, the Commission should
9 consider imposing sanctions on individual sellers that, on a going-forward
10 basis, place conditions on their market-based rate authority. Additionally,
11 punitive sanctions may also be particularly appropriate for sellers who are
12 found to have provided false or misleading information to the Commission,
13 or other governmental bodies, in the various investigations related to
14 these proceedings.

15
16
17 Q. WHY DO YOU BELIEVE THE REMEDY PROPOSED BY THE
18 CALIFORNIA PARTIES IS APPROPRIATE?
19

20 First, due to the closely woven relationship and interaction between the
21 actions of different market participants and the different practices identified
22 in the California Parties' testimony, I do not believe that the impact of one
23 sellers' actions can be definitively quantified separately from the actions of
24 other sellers. Second, I believe that given the limited amount of
25 information that can be obtained from sellers and the limited amount of
26 time that has been available for investigation in these proceedings, any
27 analysis of the impacts of various market abuses would be based on

1 incomplete information and would significantly underestimate the true
2 impact of these practices, both individually and collectively. [REDACTED]

3 [REDACTED]

4 [REDACTED]

5

6 Q. DOES THAT CONCLUDE YOUR TESTIMONY?

7 A. Yes.

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

City of Folsom
County of Sacramento

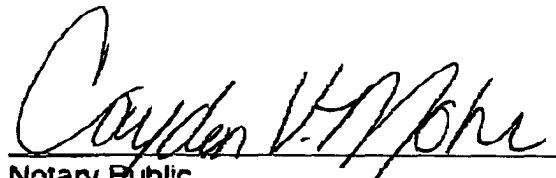
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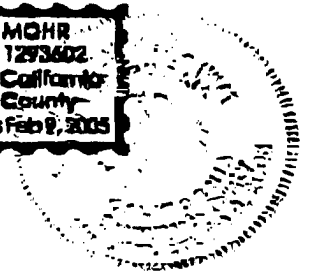
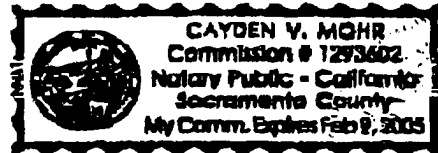
I, ERIC HILDEBRANDT, being duly sworn, depose and say that the statements contained in my Prepared Rebuttal Testimony on behalf of the California Independent System Operator Corporation in this proceeding are true and correct to the best of my knowledge, information, and belief.

Executed on this 20 th day of March, 2003.


Eric Hildebrandt

Subscribed and sworn to before me this ^{cmw}20 th day of March, 2003.


Notary Public
State of California



Submitter (Party Name)	California Independent System Operator Corporation
Index Exh. No.	ISO-2
Privileged Info (Yes/No)	No
Document Title	ISO Market Monitoring and Information Protocol
Document Author	California Independent System Operator Corporation
Doc. Date (mm/dd/yyyy)	10/13/2000
Specific finding made or proposed	The Commission should adopt the relief requested by the California Parties, as set forth in the testimony of Dr. Stern, Exh. CA-3 at 73:1-92:5. Moreover, the Commission should consider imposing sanctions on individual sellers that, on a going-forward basis, place conditions on their market-based rate authority. Additionally, punitive sanctions may also be particularly appropriate for sellers who are found to have provided false or misleading information to the Commission, or other governmental bodies, in the various investigations related to these proceedings.
Time period at issue	Between 5/2000 and 6/2001
Docket No(s) and case(s) finding pertains to *	EL00-95; EL00-98
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	<p>Sellers' strategies, as described in the Enron Memoranda and as established by the March 3 submission of the California Parties, were not merely rational behaviors (for example, in response to market design flaws), but instead were precisely the types of Anomalous Market Behavior identified in the ISO Tariff; moreover, these strategies involved the exercise of market power, undermined the market, and conferred unfair competitive advantages.</p> <p>Also, contrary to arguments raised by several suppliers, the ISO Tariff, during the period at issue in this proceeding, did prohibit the gaming and market manipulation activities engaged in by sellers.</p>

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ISO MARKET MONITORING & INFORMATION PROTOCOL

Issued by: Roger Smith, Senior Regulatory Counsel
Issued on: October 13, 2000

Effective: October 13, 2000

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ISO MARKET MONITORING AND INFORMATION PROTOCOL

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**ISO Market Monitoring and
Information Protocol (MMIP)**

MMIP 1 OBJECTIVES, DEFINITIONS, AND SCOPE

MMIP 1.1 Objectives

This Protocol (MMIP) sets forth the workplan and, where applicable, the rules under which the ISO will monitor the ISO Markets to identify abuses of market power, to ensure to the extent possible the efficient working of the ISO Markets immediately upon commencement of their operation, and to provide for their protection from abuses of market power in both the short term and the long term, and from other abuses that have the potential to undermine their effective functioning or overall efficiency in accordance with Section 16.3 of the ISO Tariff. Such monitoring activities will be carried out by the ISO Market Surveillance Unit and the ISO Market Surveillance Committee to be established and to operate under the terms of this Protocol, as set forth below.

MMIP 1.1.1 Means and Actions

This Protocol sets forth the means of data collection, analysis, decision-making, formulation of corrective actions, and enforcement actions that will be instituted or undertaken by the ISO. It describes the implementation mechanisms to be created by the ISO to serve these purposes.

MMIP 1.1.2 Reporting Requirements

This Protocol sets forth the information dissemination, publication and reporting activities and other means of providing information that the ISO will undertake to meet its reporting requirements to regulatory agencies, ISO Participants and others. The goal of the reporting provisions of this Protocol is to adequately inform regulatory agencies, ISO Participants and others of the state of the ISO Markets, especially their competitiveness and efficiency. This function is designed to facilitate efficient corrective actions to be taken by the appropriate body or bodies when required.

MMIP 1.2 Definitions

MMIP 1.2.1 Master Definitions Supplement

Any word or expression defined in the Master Definitions Supplement to the ISO Tariff shall have the same meaning where used in this Protocol. References to a Section or Appendix are to a Section or an Appendix of the ISO Tariff. References to MMIP are to this Protocol or to the stated section, paragraph or appendix of this Protocol.

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MMIP 1.2.2 Special Terms for This Protocol

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

"Market Surveillance Unit" means the unit established under MMIP 3.1.

"ISO Market Surveillance Committee (ISO MSC)" means the committee established under MMIP 5.1.

"Activity Rules" means the rules relating to the activities of ISO or PX Participants set forth in or referred to in the ISO and PX Tariff and Protocols.

"ISO Home Page" means the ISO internet home page at <http://www.caiso.com> or such other internet address as the ISO shall publish from time to time.

MMIP 1.2.3 Rules of Interpretation

MMIP 1.2.3.1 Unless the context otherwise requires, if the provisions of this Protocol and the ISO Tariff conflict, the ISO Tariff will prevail to the extent of the inconsistency. The provisions of the ISO Tariff have been summarized or repeated in this Protocol only to aid understanding.

MMIP 1.2.3.2 A reference in this Protocol to a given agreement, ISO Protocol or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made.

MMIP 1.2.3.3 The captions and headings in this MMIP are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Protocol.

MMIP 1.2.3.4 This Protocol shall be effective as of January 1, 1998.

MMIP 1.3 Scope

MMIP 1.3.1 Scope of Application to Parties

The MMIP applies to:

MMIP 1.3.1.1 All ISO Market Participants;

MMIP 1.3.1.2 PX Participants;

MMIP 1.3.1.3 The ISO.

MMIP 1.3.2 Liability of ISO

Any liability of the ISO arising out of or in relation to this Protocol shall be subject to Section 14 of the ISO Tariff as if references to the ISO Tariff were references to this Protocol.

MMIP 2 PRACTICES SUBJECT TO SCRUTINY

MMIP 2.1 Practices Subject to Scrutiny - General

The Market Surveillance Unit shall monitor the activities of Market Participants and other entities described in MMIP 1.3.1. It shall monitor

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such activities that affect the operation of the ISO Markets and that provide indications of the phenomena set forth below in this Section 2.1 and, where appropriate, it will take such further action as it considers necessary under Section 2.3.

MMIP 2.1.1 Anomalous Market Behavior

Anomalous market behavior, which is defined as behavior that departs significantly from the normal behavior in competitive markets that do not require continuing regulation or as behavior leading to unusual or unexplained market outcomes. Evidence of such behavior may be derived from a number of circumstances, including:

- MMIP 2.1.1.1** withholding of Generation capacity under circumstances in which it would normally be offered in a competitive market;
- MMIP 2.1.1.2** unexplained or unusual redeclarations of availability by Generators;
- MMIP 2.1.1.3** unusual trades or transactions;
- MMIP 2.1.1.4** pricing and bidding patterns that are inconsistent with prevailing supply and demand conditions, e.g., prices and bids that appear consistently excessive for or otherwise inconsistent with such conditions; and
- MMIP 2.1.1.5** unusual activity or circumstances relating to imports from or exports to other markets or exchanges.

The Market Surveillance Unit shall evaluate, on an ongoing basis, whether the continued or persistent presence of such circumstances indicates the presence of behavior that is designed to or has the potential to distort the operation and efficient functioning of a competitive market, e.g., the strategic withholding and redeclaring of capacity, and whether it indicates the presence and exercise of market power or of other unacceptable practices.

MMIP 2.1.2 Abuse of Reliability Must-Run Unit Status

Where Generating Units are determined by the ISO to be Reliability Must-Run Units, circumstances that indicate that such Generating Units are being operated in a manner that will adversely affect the competitive nature and efficient workings of the ISO Markets.

MMIP 2.1.3 Gaming

"Gaming", or taking unfair advantage of the rules and procedures set forth in the PX or ISO Tariffs, Protocols or Activity Rules, or of transmission constraints in periods in which exist substantial Congestion, to the detriment of the efficiency of, and of consumers in, the ISO Markets. "Gaming" may also include taking undue advantage of other conditions that may affect the availability of transmission and generation capacity, such as loop flow, facility outages, level of hydropower output or seasonal limits on energy imports from out-of-state, or actions or behaviors that may otherwise render the system and the ISO Markets vulnerable to price manipulation to the detriment of their efficiency.

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MMIP 2.1.4 ISO and PX Design Flaws

Design flaws and inefficiencies in the ISO Tariff, ISO Protocols and operational rules and procedures of the ISO, including the potential for problems between the ISO and other independent power exchanges including the PX, insofar as they affect the ISO Markets which may be evident from anomalous market behavior monitored under MMIP 2.1.1 above, from evidence of gaming monitored under MMIP 2.1.3 above, or from other activities.

MMIP 2.1.5 Market Structure Flaws

With respect to flaws in the overall structure of the California energy markets that may reveal undue concentrations of market power in Generation or other structural flaws, the Market Surveillance Unit shall provide such information or evidence of such flaws and such analysis as it may conduct to the ISO CEO, the ISO Market Surveillance Committee or to the ISO Governing Board, subject to due protections of confidential or commercially sensitive information. After due internal consultation, if instructed by any of such ISO institutions or persons, the Market Surveillance Unit shall also provide such information or evidence to the appropriate regulatory and antitrust enforcement agency or agencies, subject to due protections of confidential or commercially sensitive information. The Market Surveillance Unit shall, provide such other evidence, views, analyses or testimony as may be appropriate or required and as it is reasonably capable of providing to assist the investigations of such agencies.

MMIP 2.2 Practices Subject to Scrutiny Pending Divestiture

In the transition periods pending completion of the various divestiture plans undertaken by certain of the IOU's ("the pre-divestiture period"), the Market Surveillance Unit shall undertake the following measures to monitor the special circumstances that may affect the operation of the ISO Markets during this period and may recommend corrective actions as provided in Section 2.3.

MMIP 2.2.1 Exercises of Horizontal Market Power

The Market Surveillance Unit shall consider issues that have been raised that some ISO Participants may be able to exercise horizontal market power in the short term during this transition period.

MMIP 2.2.2 IOU Mitigation Plans

The Market Surveillance Unit shall review all IOU mitigation plans, as approved and modified by the FERC and other regulatory agencies, that might affect the competitiveness of and the efficient operation of the ISO Markets. In consultation with the Compliance Unit of the PX, the Market Surveillance Unit shall analyze what further actions may be necessary to ensure the effective implementation of these mitigation plans with respect to the ISO Markets, and may make such recommendations for further actions as it considers appropriate to the ISO CEO and Governing Board, the FERC, the CPUC or other regulatory agencies. The Market Surveillance Unit shall monitor the

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ongoing implementation of such plans to the extent feasible within the area of its responsibility, capability and resources.

MMIP 2.2.3 Effects Pending Divestiture

In the pre-divestiture period, the Market Surveillance Unit shall monitor and analyze the combined effect of the operations of the CTC and the rate freeze under which the Companies are required to operate during the pre-divestiture period on the state of competition in and the efficient operation of the ISO Markets; and the Market Surveillance Unit shall consult with the Compliance Unit of the PX with respect to such effects on both the PX and ISO Markets.

MMIP 2.3 Response Action by ISO

MMIP 2.3.1 Corrective Actions

Where the monitoring activities or any consequent investigations carried out by the Market Surveillance Unit pursuant to MMIP 2 and MMIP 4 reveal a significant possibility of the presence of or potential for exercises of market power that would adversely affect the operation of the ISO Markets, or the markets administered by the PX or otherwise operating in the State of California, the Market Surveillance Unit shall take the appropriate measures under this section and under MMIP 4, 6, and 7 to institute the corrective action most effective and appropriate for the situation or, in the case of markets administered by the PX or otherwise operating in the State of California, the Market Surveillance Unit may recommend corrective actions to the PX or to the appropriate regulatory agencies.

MMIP 2.3.2 Further Actions

Where the monitoring activities of or any consequent investigations carried out by the Market Surveillance Unit pursuant to MMIP 2.1 and 2.2 reveal that activities or behavior of Market Participants in the ISO Markets have the effect of, or potential for, undermining the efficiency, workability or reliability of the ISO Markets to give or to serve such Market Participants an unfair competitive advantage over other Market Participants, the Market Surveillance Unit shall fully investigate and analyze the effect of such activities or behavior and, where appropriate, make recommendations to the ISO CEO and the ISO MSC for further action by the ISO or, where necessary, by other entities. The ISO may publicize such activities or behavior and its recommendations thereof, in whatever medium it believes most appropriate. The Market Surveillance Unit may, where appropriate, make specific recommendations for amendment to rules and protocols under its control, or for referral to the PX as to rules and protocols under the PX's control; or for changes to the structure of the ISO Markets, or by referral to the PX, of the markets administered by the PX, and the Market Surveillance Unit may recommend actions, including fines or suspensions, against specific entities in order to deter such activities or behavior.

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MMIP 2.3.3 Response to Gaming Behavior

If evidence of "gaming" or taking undue advantage exists, as described in MMIP 2.1.4, the Market Surveillance Unit shall, in cooperation with the PX Compliance Unit where appropriate, review the "gaming" behavior and/or the relationship between system conditions and market behavior and pricing in order to assess the potential for and impact of such gaming behavior, with a view to taking appropriate action, if necessary, either with respect to structural changes such as Zone changes, or to changes to the ISO or PX Tariffs, Protocols or Activity Rules, or to proscribe specific behavior by Market Participants. In carrying out such activities the Market Surveillance Unit shall in appropriate circumstances seek the advice of the ISO MSC on the merits of such actions. In appropriate circumstances, the Market Surveillance Unit may institute or arrange for ADR procedures involving Market Participants with conflicting perspectives, e.g. as to whether a particular practice is better characterized as improper gaming or legitimate aggressive competition or as to whether rule changes may resolve conflicts.

MMIP 2.3.4 Adverse Effects of Transition Mechanisms

Should the monitoring and analysis conducted under MMIP 2.2.3 reveal significant adverse effects of transition mechanisms on competition in or the efficient operation of the ISO Markets, the Market Surveillance Unit shall examine and fully assess the efficacy of all possible measures that may be taken by the ISO and, in consultation with the Compliance Unit of the PX, all possible measures that may be taken by the PX, in order to prevent or to mitigate such adverse effects. The Market Surveillance Unit shall make such recommendations to the CEO of the ISO and to the ISO MSC as it considers appropriate for action in this regard by the PX or the ISO or for referral to the regulatory or antitrust enforcement agencies. Such proposed measures may include, but shall not be limited to the following:

- MMIP 2.3.4.1** the use of direct bid caps as a mechanism to prevent or mitigate artificially high Market Clearing Prices caused by abuses of market power;
- MMIP 2.3.4.2** the use of contracts for differences for eliminating the incentive for Generators to bid ISO prices to artificially high levels enabled by the presence of market power;
- MMIP 2.3.4.3** calling upon Reliability Must-Run Units to operate; and to modify Reliability Must-Run Contracts;
- MMIP 2.3.4.4** bid floors to prevent or mitigate the possible exercise of below-cost bidding or predatory pricing that may arise from the incentives provided by the combined effect of the CTC and the rate freeze when the IOUs are net buyers of Energy.

The CEO and the ISO MSC shall consult on such recommendations and each may, after due consideration, propose any of such measures to the ISO Governing Board. In the event that the ISO Governing Board adopts, and where necessary obtains regulatory approval for, any

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measure proposed pursuant to MMIP 2.3.4, the Market Surveillance Unit shall develop an implementation plan for such measure, and shall submit such plan to the CEO and ISO MSC. Upon approval of such plan by the CEO, the Market Surveillance Unit shall monitor the implementation and effect of such measure on the state of the ISO Markets and shall periodically report on them to the CEO and the ISO MSC.

MMIP 3 ISO MARKET SURVEILLANCE UNIT

MMIP 3.1 Establishment

There shall be established on or before ISO Operations Date within the ISO a Market Surveillance Unit that shall be responsible for the ongoing development, implementation, and execution of the ISO Market monitoring and information scheme described in this MMIP and the adherence to its objectives, as set forth in MMIP 1.1.

MMIP 3.2 Composition

The Market Surveillance Unit shall be adequately staffed by the ISO with full-time ISO staff with the experience and qualifications necessary to fulfill the functions referred to in this MMIP. Such qualifications may include professional training pertinent to and experience in the operation of markets analogous to ISO Markets, in the electric power industry, and in the field of competition and antitrust law, economics and policy. The Market Surveillance Unit shall be directed by a Compliance Director who shall be under the management of the ISO Chief Legal Counsel and the ISO CEO.

MMIP 3.3 Accountability and Responsibilities

MMIP 3.3.1 Market Surveillance Unit

The Market Surveillance Unit shall report and be accountable to the ISO CEO through the Chief Legal Counsel on all matters pertaining to policy and other matters that may affect the effectiveness and integrity of the monitoring function referred to in this Protocol, including matters pertaining to market monitoring, information development and dissemination and pertaining to generic or entity-specific investigations, corrective actions or enforcement.

MMIP 3.3.2 CEO and ISO MSC

The ISO CEO and the ISO MSC shall each have the independent authority to refer any of the matters referred to in MMIP 3.3.1 to the ISO Governing Board for approval of recommended actions.

MMIP 3.3.3 Chief Executive Officer (CEO)

MMIP 3.3.3.1 The Market Surveillance Unit shall report to and be accountable to the ISO CEO through the Chief Legal Counsel on all matters relating to the day-to-day administration of the Market Surveillance Unit and the internal resources and organization of the ISO in accordance with MMIP 3.3.3.2.

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MMIP 3.3.3.2 The ISO CEO shall ensure that the Market Surveillance Unit has adequate resources and full access to data and the full cooperation of all parts of the ISO organization in developing the database necessary for the effective functioning of the Market Surveillance Unit and the fulfillment of its monitoring function. The ISO CEO shall institute within the ISO such data collection, organization and analytic activities as may be necessary for the Market Surveillance Unit to fulfill its functions and responsibilities.

MMIP 3.3.4 Regulatory and Antitrust Enforcement Agencies

Where considered necessary and appropriate, or where so ordered by the regulatory or antitrust agency with jurisdiction over the matter in question, or by a court of competent jurisdiction, the Market Surveillance Unit shall refer a matter through the ISO CEO to the regulatory or antitrust enforcement agency concerned, e.g., in cases of serious abuse requiring expeditious investigation or action by the agency. In all such cases of direct referral, the ISO CEO shall promptly inform the ISO Governing Board and the ISO MSC of the fact of and the content of the referral.

MMIP 3.3.5 Complaints

Any Market Participant, or any other interested entity, may at any time submit information to or make a complaint to the Market Surveillance Unit concerning any matter that it believes may be relevant to the Market Surveillance Unit's monitoring responsibilities. Such submissions or complaints may be made on a confidential basis in which case the Market Surveillance Unit shall preserve the confidentiality thereof. The Market Surveillance Unit, at its discretion, may request further information from such entity and carry out any investigation that it considers appropriate as to the concern raised. The Market Surveillance Unit shall periodically make reports to the ISO CEO and ISO Governing Board on complaints received.

MMIP 4 SPECIFIC FUNCTIONS OF ISO MARKET SURVEILLANCE UNIT

MMIP 4.1 Information Gathering and Market Monitoring Indices for Evaluation

MMIP 4.1.1 Information System

The Market Surveillance Unit shall be responsible for developing an information system and criteria for evaluation that will permit it to effectively monitor the ISO Markets to identify and investigate abuses of that market, whether caused by exercises of market power or by other actions or inactions.

MMIP 4.1.2 Data Categories

To develop the information system set forth in MMIP 4.1.1, the Market Surveillance Unit shall initially develop, and shall refine on the basis of experience, a detailed catalog of all the categories of data it will have the means of acquiring, and the procedures it will use (including procedures for protecting confidential data) to handle such data.

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MMIP 4.1.3 Catalog of Market Monitoring Indices

The Market Surveillance Unit shall initially develop, and shall refine on the basis of experience, a catalog of the ISO Market monitoring indices that it will use to evaluate the data so collected.

MMIP 4.2 Evaluation of Information

MMIP 4.2.1 Ongoing Evaluation

The Market Surveillance Unit shall evaluate and reevaluate on an ongoing basis the data categories and market monitoring indices that it has developed under MMIP 4.1.2 and 4.1.3, and the information it collects and receives from various other sources, including and in particular the ISO's operation of the ISO Markets. Such ongoing evaluations shall provide the basis for its reporting and publication responsibilities as set forth in this Protocol, for recommendations on proposed changes to the ISO Tariff and ISO Protocols and other potential rules affecting the ISO Markets, and for the development of criteria or standards for the initiation of proposed corrective or enforcement actions. In evaluating such information, the Market Surveillance Unit may consult the ISO MSC or such external bodies as may be appropriate.

MMIP 4.2.2 Submission of Evaluation Results

The final results of the Market Surveillance Unit's evaluations shall routinely and promptly be submitted simultaneously to the ISO CEO and to the ISO MSC for comment.

MMIP 4.3 Review of Activity Rules

When an iterative bidding process is developed that requires the application of Activity Rules, whether developed by the ISO or the PX, the Market Surveillance Unit shall review such Activity Rules for their effectiveness and consistency with its market monitoring activities and standards. The Market Surveillance Unit may at that time, and from time to time thereafter based on its experience in monitoring the ISO Markets, propose that changes be made in such Activity Rules.

MMIP 4.4 Reports and Recommendations

MMIP 4.4.1 ISO CEO and Governing Board

On the basis of the evaluation conducted under MMIP 4.2 or the review conducted under MMIP 4.3, the Market Surveillance Unit shall prepare periodic reports, as required by the ISO CEO, and specific ad hoc reports as appropriate, for the ISO CEO and ISO Governing Board on the state of competition in or the efficiency of the ISO Markets; and on its monitoring activities, the results of its evaluation and review activities, and its development and implementation of recommendations. Where appropriate, the ISO Market Surveillance Unit may recommend actions to be taken, including the amendment of the ISO Tariff and ISO Protocols and corrective or enforcement action against specific entities. Such reports shall be made not less frequently than quarterly in the case of the ISO CEO and ISO MSC and annually in

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the case of the ISO Governing Board and shall contain such information and be in such form as specified by such entities. Such reports shall be made public and publicized as specified by such entities except to the extent that they contain confidential or commercially sensitive information or to the extent such entities determine that effective enforcement of the monitoring function dictates otherwise.

MMIP 4.4.2 Regulatory Agencies

As required in the ISO Tariff or by the ISO CEO and ISO Governing Board, or as required by the regulatory agency with jurisdiction over the matters in question, the Market Surveillance Unit shall prepare reports to the FERC and other regulatory agencies, which shall be reviewed and approved by the ISO CEO and Governing Board and then submitted as required. When publicly available reports are made to one regulatory agency with competent jurisdiction, such as the FERC, the Market Surveillance Unit may simultaneously make such reports available to other regulatory agencies with legitimate interests in their contents, such as the CPUC and CEC.

MMIP 4.4.3 ISO Market Surveillance Committee

All reports and recommendations to be made to the ISO CEO and ISO Governing Board under MMIP 4.4.1, or to regulatory agencies under MMIP 4.4.2, unless urgency requires otherwise, shall first be submitted to the ISO MSC for comments, which comments shall be reflected in the submittal to the ISO Governing Board. In addition, the Market Surveillance Unit may submit specific reports to the ISO MSC itself, as it considers appropriate. All final reports made to external regulatory agencies shall be simultaneously submitted to the ISO MSC.

MMIP 4.5 ISO Participants

MMIP 4.5.1 Collection of Data

The Market Surveillance Unit may request the submission of any information or data determined by the Market Surveillance Unit to be potentially relevant by ISO Participants, the PX or other entities whose activities may affect the operation of the ISO market. This data will be subject to due safeguards to protect confidential and commercially sensitive data. Failures by ISO Participants to provide such data shall be treated under MMIP 4.5.2. In the event of failures by other entities to provide such data, the Market Surveillance Unit may report the failure to the ISO CEO and Governing Board or the pertinent regulatory agency, as appropriate, after providing such entity the opportunity to respond in writing as to the reason for the alleged failure.

MMIP 4.5.2 Provision of Data by ISO Participants

Failure by an ISO Participant to provide information requested pursuant to MMIP 4.5.1, or otherwise to cooperate in the Market Surveillance Unit's data collection or investigation activities, may be treated as grounds for action against the ISO Participant entity concerned. Such action may lead to the imposition of such penalties or sanctions as are permitted under the ISO Tariff or related protocols approved by FERC

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and may include possible exclusion from the ISO Markets or termination of any relevant ISO agreements or certifications. Before any such action is taken, the ISO Participant shall be provided the opportunity to respond in writing as to the reason for the alleged failure.

MMIP 4.5.3 Dissemination of Data

ISO Participants may request that the ISO provide data that it has collected; and, upon approval of the ISO CEO and at his sole discretion, such data may, subject to constraints on the ISO's resources, be provided by the ISO subject to due safeguards to protect confidential and commercially sensitive data. Where such activity imposes a significant burden or expense on the ISO, the data may be provided on the condition that a reasonable contribution to the cost incurred by the ISO is made to the ISO by the requesting party.

MMIP 4.6 External Consulting Assistance and Expert Advice

In carrying out any of its responsibilities under this MMIP 4, including the development of an information system, market monitoring indices and evaluation criteria, and the catalogs associated therewith, and in its analysis and ongoing evaluation of these catalogs and of the Activity Rules under MMIP 4.3, the Market Surveillance Unit may hire consulting assistance subject to the budgetary approval of the ISO CEO and may seek such expert external advice as it believes necessary.

MMIP 4.7 Cooperation with PX Compliance Unit and Market Monitoring Committee

In carrying out its responsibilities under this Protocol, the Market Surveillance Unit may at its discretion consult or cooperate in the manner it considers most appropriate with the PX's Compliance Unit and Market Monitoring Committee, or other entities within the PX that fulfill the analogous market monitoring functions, with respect to the following:

- (a) exchange of data subject to any limitations on the ISO's ability to disclose commercially sensitive information from other Scheduling Coordinators to the ISO, monitoring methodologies and results, and information on corrective, referral or enforcement actions taken;
- (b) monitoring of market performance;
- (c) joint analysis of data, subject to any limitations on the ISO's ability to disclose commercially sensitive information from other Scheduling Coordinators to the ISO, and monitoring results of markets and Market Participant behavior;
- (d) investigations of specific market abuses; and
- (e) proposals for concerted action on enforcement measures, e.g., as to suspensions from trading.

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MMIP 4.8 Liability for Damages

As provided in Section 14.1 and 14.2 of the ISO Tariff, the Market Surveillance Unit, the ISO MSC, the ISO CEO and other ISO staff shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such ISO entities of their functions under this Protocol.

MMIP 5 ISO MARKET SURVEILLANCE COMMITTEE

MMIP 5.1 Establishment

There shall be established on or before ISO Operations Date an ISO Market Surveillance Committee (ISO MSC), whose role it shall be to provide independent external expertise on the ISO market monitoring process as described in this Protocol and, in particular, to provide independent expert advice and recommendations to the ISO CEO and Governing Board. Members of the Committee are not employees or agents of the ISO. Members are not available to provide expert witness services to the ISO or any other party in a FERC proceeding relating to the ISO, except to the extent that the ISO MSC makes an advance determination that providing such service is not inconsistent with the independence of the ISO MSC.

MMIP 5.2 Composition

MMIP 5.2.1 Qualifications

The ISO MSC shall comprise a body of three or more independent and recognized experts whose combined professional expertise and experience shall encompass the following:

- MMIP 5.2.1.1** economics, with emphasis on antitrust, competition, and market power issues in the electricity industry;
- MMIP 5.2.1.2** experience in operational aspects of generation and transmission in electricity markets;
- MMIP 5.2.1.3** experience in antitrust or competition law in regulated industries; and
- MMIP 5.2.1.4** financial expertise relevant to energy or other commodity trading.

MMIP 5.2.2 Criteria for Independence

Each member of the ISO MSC must meet the following criteria for independence in order to be appointed:

- MMIP 5.2.2.1** no material affiliation, through employment, consulting or otherwise, with any Market Participant or affiliate thereof consistent with the pertinent FERC Standards of Conduct; and
- MMIP 5.2.2.2** no material financial interest in any Market Participant or affiliate thereof consistent with the pertinent FERC Standards of Conduct.

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MMIP 5.3 Appointments to the ISO MSC

For each position on the ISO MSC, the ISO CEO shall conduct a thorough search and requisite due diligence to develop a nomination to the ISO Governing Board, which nomination shall be consistent with meeting the combined professional expertise and experience of the ISO MSC set forth in MMIP 5.2.1 and with the criteria for independence set forth in MMIP 5.2.2. The ISO Governing Board shall expeditiously consider such nominations. If the nomination is approved, the ISO CEO shall appoint the candidate so nominated to the ISO MSC. If the nomination is rejected, the ISO CEO shall expeditiously proceed to develop another nomination in accordance with this MMIP.

MMIP 5.4 Compensation and Reimbursements

Members of the ISO MSC shall be compensated on such basis as the ISO Governing Board shall from time to time determine.

Members of the ISO MSC shall receive prompt reimbursement for all expenses reasonably incurred in the execution of their responsibilities under this MMIP 5.

MMIP 5.5 Liability for Damages

As provided in Section 14.1 and 14.2 of the ISO Tariff, the Market Surveillance Unit, the ISO MSC, the ISO CEO and other ISO staff shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such ISO entities of their functions under this Protocol.

MMIP 6 SPECIFIC FUNCTIONS OF ISO MARKET SURVEILLANCE COMMITTEE (ISO MSC)

MMIP 6.1 Information Gathering and Evaluation Criteria

The ISO MSC shall review the initial catalogs of information and data and of evaluation criteria developed by the Market Surveillance Unit pursuant to MMIP 4 and shall propose such changes, additions or deletions to such catalogs or items therein as it sees fit. In so doing, the ISO MSC shall have full discretion to specify database items or evaluation criteria for inclusion in the pertinent catalog.

MMIP 6.2 Evaluation of Information

The ISO MSC may, upon request of the Market Surveillance Unit, the ISO CEO or the ISO Governing Board, or on its own volition, evaluate such information or data, including as may be collected by the Market Surveillance Unit on the basis of the evaluation criteria developed by the Market Surveillance Unit or on such further articulated evaluation criteria developed by the ISO MSC. In carrying out such evaluations, the ISO MSC may consult the PX's Compliance Unit and Market Monitoring Committee with respect to any matter relating to such evaluations.

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MMIP 6.3 Reports and Recommendations

MMIP 6.3.1 Required Reports

All evaluations carried out by the ISO MSC pursuant to MMIP 6.2, and any recommendations emanating from such evaluations, shall be embodied by the ISO MSC in written reports to the ISO CEO and ISO Governing Board and shall be made publicly available subject to due restrictions on dissemination of confidential or commercially sensitive information. The ISO MSC may submit any report to FERC, subject to due restrictions on dissemination of confidential or commercially sensitive information.

MMIP 6.3.2 Additional Reports

The ISO MSC may make such additional reports and recommendations as it sees fit relating to the monitoring program referred to in this Protocol, the analysis of information, the evaluation criteria or any corrective or enforcement actions proposed by the Market Surveillance Unit or proposed of its own volition.

MMIP 6.4 Publication of Reports and Recommendations

Upon request of the ISO MSC, the ISO CEO shall publish reports and recommendations of the ISO MSC or incorporate them, if consistent, into the ISO's own reports or recommendations.

MMIP 7 IMPLEMENTATION OF RECOMMENDATIONS

MMIP 7.1 Plan and Activity Rule Changes

Upon recommendation of the ISO CEO, acting on the advice of the Market Surveillance Unit, or based on the independent recommendation of the ISO MSC, the ISO Governing Board may make such changes as it believes are appropriate to any ISO Protocol or Agreement or to any Activity Rules applicable in accordance with MMIP 9.

MMIP 7.2 Tariff Changes

Upon recommendation of the ISO CEO, acting on the advice of the Market Surveillance Unit, or based on the independent recommendation of the ISO MSC, the ISO Governing Board shall consider and may adopt proposed ISO Tariff changes in accordance with MMIP 9.

MMIP 7.3 Sanctions and Penalties

Upon recommendation of the ISO CEO, acting on the advice of the Market Surveillance Unit, or based on the independent recommendation of the ISO MSC, and after an audit by the Market Surveillance Unit the ISO Governing Board may impose such sanctions or penalties as it believes necessary and as are permitted under the ISO Tariff and related protocols approved by FERC; or it may make any such referral to such regulatory or antitrust agency as it sees fit to recommend the imposition of sanctions and penalties. The audit by the Market Surveillance Unit shall investigate whether the abuse or

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behavior identified meets the criteria for and has such effect as to warrant the sanctions or penalties recommended.

MMIP 8 PUBLICATION OF INFORMATION

MMIP 8.1 Market Monitoring Data and Indices

The ISO Market Surveillance Unit shall, pursuant to MMIP 4.1, develop a catalog of data and indices. Upon approval of the ISO CEO, such catalogs shall be duly published on the ISO Home Page and disseminated to all ISO Participants.

MMIP 8.2 Regular Information Publication

The following information shall be published by the ISO Market Surveillance Unit, in a medium and form helpful to Market Participants, on a regular basis:

MMIP 8.2.1.1 Market Clearing Prices for Energy;

MMIP 8.2.1.2 Market Clearing Prices for Ancillary Services;

MMIP 8.2.1.3 Aggregate Supply and Demand for each Zone;

MMIP 8.2.1.4 Congestion and Congestion costs;

MMIP 8.2.1.5 Generation Unit and transmission line outages; and

MMIP 8.2.1.6 Hydro-electric Generation

MMIP 8.3 Reports to Regulators

The Market Surveillance Unit shall develop a schedule, format and proposed table of contents for the annual reports to FERC, and such other reports as may be required by FERC, which shall be submitted as a proposal to the ISO CEO and ISO MSC. Upon approval of such proposal, the Market Surveillance Unit shall proceed to prepare such reports according to such schedule for approval and submission by the ISO CEO to the Governing Board and to the regulatory agency concerned.

MMIP 9 AMENDMENTS

If the ISO determines a need for an amendment to this Protocol, the ISO will follow the requirements as set forth in Section 16 of the ISO Tariff.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the restricted service list compiled by the Presiding Administrative Law Judge in this proceeding.

Dated at Washington, DC, this 20th day of March, 2003.

A handwritten signature in black ink that reads "J Philip Jordan". The signature is written in a cursive style with a horizontal line underneath the name.

J. Philip Jordan
(202) 295-8465