

1 CATHERINE C. COLLINS
DANIEL T. LLOYD
2 JOHN R. MATSON III
KATHERINE WALSH
3 Office of Enforcement
Federal Energy Regulatory Commission
4 888 1st Street, N.E.
Washington, DC 20426
5 Telephone: 202-502-6572
Catherine.Collins@ferc.gov
6 Daniel.Lloyd@ferc.gov
Jay.Matson@ferc.gov
7 Katherine.Walsh@ferc.gov

8 Attorneys for Petitioner

9 IN THE UNITED STATES DISTRICT COURT
10 FOR THE EASTERN DISTRICT OF CALIFORNIA

11 FEDERAL ENERGY REGULATORY
COMMISSION,

12 Petitioner,

13 vs.

14 ETRACOM LLC and MICHAEL
15 ROSENBERG,

16 Respondents.

CASE NO.

PETITION FOR AN ORDER AFFIRMING THE
FEDERAL ENERGY REGULATORY
COMMISSION’S JUNE 17, 2016 ORDER
ASSESSING CIVIL PENALTIES AGAINST
ETRACOM LLC and MICHAEL ROSENBERG

JURY TRIAL DEMANDED

17
18 Petitioner Federal Energy Regulatory Commission (“FERC” or “Commission”), pursuant to
19 Federal Power Act (“FPA”) Section 31(d) (codified as 16 U.S.C. § 823b (2012)), petitions this Court for
20 an Order Affirming the Commission’s Order Assessing Civil Penalties against ETRACOM LLC
21 (“ETRACOM”), and Michael Rosenberg, which the Commission entered on June 17, 2016.

22 **JURISDICTION**

23 1. This Court has subject matter jurisdiction over this action pursuant to FPA Section
24 31(d)(3)(B). 16 U.S.C. § 823b(d)(3)(B). Respondents have sufficient contacts with the United States
25 such that they are each subject to personal jurisdiction in this Court pursuant to FPA Section 317, which
26 provides for nationwide service of process. 16 U.S.C. § 825p.

VENUE

1
2 2. Venue properly lies within the Eastern District of California pursuant to FPA Sections
3 31(d)(3)(B) and 317. 16 U.S.C. §§ 823b, 825p. In May 2011, Respondents engaged in an unlawful
4 scheme to manipulate electricity prices in the California wholesale electric market headquartered in
5 Folsom, California, within this District. In this market, bids and offers, as well as payments, are
6 processed through the market’s servers located in Folsom. Respondents traded virtual energy at a
7 specific location, the New Melones intertie, located on the border of Calaveras and Tuolumne Counties,
8 also within this District. Respondents artificially lowered energy prices at the New Melones intertie to
9 increase the profitability of an additional financial position they held between the New Melones intertie
10 and a second market location in Oakdale, California, also within this District. Respondents' unlawful
11 scheme caused harm throughout much of California, including in this District.

SUMMARY OF THE ACTION

12
13 3. This matter involves judicial review of civil penalties assessed by the Commission
14 against ETRACOM and its majority owner and primary trader, Michael Rosenberg, for engaging in an
15 unlawful fraudulent scheme to manipulate the wholesale electricity price at a location within the
16 California Independent System Operator (“CAISO”) market in May 2011.

17 4. Following an extensive investigation by the Commission’s Office of Enforcement
18 (“Enforcement”), briefing of the issues by Respondents and Enforcement before the Commission as part
19 of an adversarial adjudicative show cause proceeding, and an independent review by the Commission of
20 the administrative record, the Commission on June 17, 2016, issued an order finding that ETRACOM
21 and Rosenberg engaged in an unlawful, manipulative scheme to trade virtual supply at the New Melones
22 intertie at the border of the CAISO wholesale electricity market in order to affect wholesale power
23 prices and economically benefit ETRACOM’s Congestion Revenue Rights (“CRRs”) sourced at that
24 location in violation of the FPA’s prohibition of energy market manipulation, 16 U.S.C. § 824v(a), and
25 the corresponding prohibition in the Commission’s regulations, 18 C.F.R. § 1c.2 (2016). The
26 Commission’s Order Assessing Civil Penalties, 155 FERC ¶ 61,284 (2016) (“Order Assessing Civil
27 Penalties”), is attached as Exhibit 1.
28

1 implemented at the New Melones intertie in May 2011. Rosenberg is a U.S. citizen and currently
2 resides in San Juan, Puerto Rico.

3 **THE COMMISSION’S ANTI-MANIPULATION AUTHORITY**

4 9. The Commission’s core statutory mission under the FPA is to ensure that the wholesale
5 prices for the transmission and sale of electric energy in interstate commerce are just and reasonable. 16
6 U.S.C. §§ 824, 824d. In the wake of the Western Energy Crisis of 2000-2001 and the resulting unjust
7 and unreasonable rates caused by Enron Corporation’s manipulative schemes, Congress, through the
8 Energy Policy Act of 2005, Pub. L. 109-58 (“EPAAct 2005”), amended the FPA to give the Commission
9 two new enforcement tools. First, EPAAct 2005 gave the Commission the authority to assess substantial
10 civil penalties of up to \$1 million per day, per violation against any person who violates Part II of the
11 FPA or any rule or order thereunder. 16 U.S.C. § 825o-1(b); *see* 16 U.S.C. § 796(4) (defining “person”
12 to include an individual or corporation). Second, EPAAct 2005 provided additional authority to prohibit
13 market manipulation. In relevant part, FPA Section 222, 16 U.S.C. § 824v(a), makes it:

14 [U]nlawful for any entity . . . directly or indirectly, to use or employ, in
15 connection with the purchase or sale of electric energy . . . any
16 manipulative or deceptive device or contrivance (as those terms are used
17 in section 10(b) of the Securities Exchange Act of 1934 (15 U.S.C 78j(b)))
18 in contravention of such rules and regulations as the Commission may
19 prescribe as necessary or appropriate in the public interest or for the
20 protection of electric ratepayers.

21 10. After EPAAct 2005 became law, the Commission promulgated the Anti-Manipulation
22 Rule, 18 C.F.R. § 1c.2, which prohibits an entity from: (1) using a fraudulent device, scheme, or artifice,
23 or making a material misrepresentation or a material omission as to which there is a duty to speak under
24 a Commission-filed tariff, Commission order, rule, or regulation, or engaging in any act, practice, or
25 course of business that operates or would operate as a fraud or deceit upon any entity; (2) with the
26 requisite scienter; (3) in connection with the purchase or sale of electricity subject to the jurisdiction of
27 the Commission. 18 C.F.R § 1c.2; *Prohibition of Energy Market Manipulation, Order No. 670*, FERC
28 Stats. & Regs. ¶ 31,202 at P 49 (2006) (“Order No. 670”).

11. In Order No. 670, the Commission stated that it “defines fraud generally, that is, to
include any action, transaction, or conspiracy for the purpose of impairing, obstructing, or defeating a

1 well-functioning market. Fraud is a question of fact that is to be determined by all the circumstances of
2 a case.” *Id.* P 50.

3 12. One type of manipulation the Commission has consistently found to violate its
4 regulations is cross-product or related-position manipulation. In a cross-product manipulation scheme,
5 an entity trades in a Commission jurisdictional market in order to influence prices at a particular location
6 to benefit other positions whose value is in some measure tied to those prices. *See, e.g., BP America*
7 *Inc.*, 156 FERC ¶ 61,031 at P 16 (2016); *Barclays Bank PLC*, 144 FERC ¶ 61,041 at P 129 (2013);
8 *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056 at P 18 (2013); *Constellation Energy*
9 *Commodities Group, Inc.*, 138 FERC ¶ 61,168 at PP 11-17 (2012); *Energy Transfer Partners, L.P.*, 120
10 FERC ¶ 61,086 at PP 5-14 (2007).

11 **BACKGROUND ON THE RELEVANT MARKETS**

12 13. The nation’s wholesale electricity markets are overseen by independent system operators
13 (“ISOs”) that provide access to transmission lines and ensure the network reliably conducts electricity.
14 ISOs also conduct competitive auctions to set wholesale prices for electricity, measured in megawatts
15 (“MW”). Here, the relevant operator is CAISO. CAISO is headquartered in Folsom, CA and operates
16 the competitive wholesale electricity market in California. In CAISO, trading locations wholly within
17 its service territory are called “nodes” and trading locations at its borders with other service territories
18 are called “interties.”

19 14. Because of the unique characteristics of electricity, including inelastic demand and lack
20 of effective storage, suppliers in CAISO must generate the exact amount of power necessary to meet the
21 demand of utilities that buy power from CAISO for resale to end users.

22 15. CAISO uses day-ahead markets and real-time markets to balance supply and demand and
23 set wholesale prices for electricity. The day-ahead market schedules electricity production and
24 consumption on an hourly basis before the operating day (the day power actually flows to consumers),
25 whereas the real-time market reconciles any differences between the schedule in the day-ahead market
26 and the real-time demand.

27 16. CAISO markets use locational marginal pricing (“LMP”) to set wholesale electric energy
28 prices. Generally speaking, at any point in time, each node in CAISO could have a different LMP,

1 which reflects the value of energy at that location accounting for the patterns of demand, generation, and
2 the physical limits of the transmission system. LMP is calculated for each hour in both the day-ahead
3 and real-time market, and is set by optimizing supply offers and demand bids, submitted by both
4 physical and financial market participants.

5 17. Specifically, LMP consists of three components: (1) the system-wide energy price; (2)
6 the cost of congestion that results when a line is being used at its full capability; and (3) the cost of the
7 physical losses that naturally occur when some of the electricity traveling over the transmission system
8 turns into heat. The system wide energy price is the same at every location within the market and represents
9 the commodity value of power. However, congestion and transmission losses vary at each location. If
10 there were no congestion or transmission losses, power would be able to flow unencumbered from any
11 point to any point – i.e., the system would be unconstrained and consequently the LMP at each node on
12 the system would be identical. However, congestion occurs in certain directions due to physical limits
13 on the amount of electricity that can travel on certain transmission lines. That means the lowest cost
14 supply cannot always travel to, and therefore meet all the demand at, every location. This is reflected by
15 differences in the LMP and is referred to as the congestion component of LMP or the marginal cost of
16 congestion. Therefore, changes in congestion directly impact LMP.

17 18. While electricity products can be either physical or financial, ETRACOM exclusively
18 traded financial products. Physical products carry the obligation to deliver or receive physical electricity
19 at a particular location during a particular time. Financial positions do not entail physical obligations to
20 deliver or receive electricity. Rather, financial products only have an obligation to exchange payments at
21 settlement.

22 19. In CAISO, virtual transactions are financial positions in which market participants
23 arbitrage the difference between the day-ahead and real-time prices. They do so by making financial
24 sales or purchases in the day-ahead market with the explicit requirement to buy or sell it back in the real-
25 time market. Virtual supply transactions settle by receiving the day-ahead LMP and paying the real-
26 time LMP. Virtual demand transactions settle by paying the day-ahead LMP and receiving the real-time
27 LMP. Thus, a market participant like ETRACOM profits if it buys energy in the day-ahead market and
28 subsequently sells it back in the real-time market at a higher price. Conversely, a market participant

1 profits when it sells energy in the day-ahead market and buys it back in the real-time market at a lower
2 price.

3 20. Virtual supply and demand bids can influence LMP because virtual transactions are
4 evaluated in CAISO's day-ahead market process along with physical supply and demand transactions.
5 Thus, both physical and virtual bids can create or eliminate congestion on interties and therefore
6 increase or decrease the LMP.

7 21. At an intertie, power moving out of CAISO is considered an export; power moving into
8 CAISO is considered an import. A virtual demand bid is evaluated as an export because CAISO views
9 it as buying energy from CAISO. Conversely, a virtual supply offer at an intertie is evaluated as an
10 import because CAISO views it as selling energy to CAISO. Therefore, placing physical or virtual
11 supply at an intertie can create import congestion whereas placing physical or virtual demand at an
12 intertie can create export congestion. If an intertie is congested by exports, placing a virtual supply bid
13 (import) could relieve the congestion because the net flow would decrease or cancel out the exports. By
14 relieving the congestion, the virtual supply bid would lower the LMP by reducing the congestion
15 component of the LMP.

16 22. CAISO also offers longer-term financial products that entitle a holder to an hourly
17 payment if congestion occurs between two nodes in the direction specified in the contract, known as
18 congestion revenue rights ("CRRs"). Conversely, the holder incurs an hourly charge if congestion
19 occurs in the opposite direction as the CRR. Each CRR consists of two locations referred to as a source
20 node and sink node. A market participant purchasing a CRR, speculates that congestion will occur on
21 that path from the source node to the sink node. The higher the congestion, the higher the payment or
22 charge.

23 23. CRR positions are acquired via monthly, seasonal or long-term auctions and parties can
24 purchase and sell them in a secondary market. CRRs are available for on-peak or off-peak periods for a
25 minimum of a month-long term. Throughout the term of a CRR position, each hour of the day is
26 evaluated individually and is designated by the term "hour ending X." For example, hour ending 7
27 begins immediately after 6:00 and ends exactly at 7:00. On-peak hours are hours ending 7:00 to 22:00
28

1 Monday through Saturday and off-peak hours are hours ending 1:00 through 6:00, 23:00 and 24:00
2 Monday through Saturday and all hours on Sunday.

3 24. The New Melones intertie is located in eastern-central California and it interconnects
4 transmission between CAISO and the Sacramento Municipal Utility District/Western Area Power
5 Authority.

6 25. CRRs sourced at New Melones and sunk at nodes within CAISO would profit from
7 import congestion into CAISO. CRRs sourced at nodes within CAISO and sunk at New Melones would
8 profit from export congestion. For the relevant transactions detailed below, ETRACOM held CRR
9 positions sourced at New Melones and sunk at a node within CAISO and stood to profit from import
10 congestion.

11 **ENFORCEMENT'S INVESTIGATION OF RESPONDENTS**

12 26. In 2011, CAISO's Department of Market Monitoring ("DMM") referred this matter to
13 the Commission's Office of Enforcement alleging that ETRACOM's virtual trading from May 14-31,
14 2011 potentially violated the Commission's prohibition of electric energy market manipulation. As the
15 Commission requires, the DMM is an independent watchdog unit that, among other responsibilities,
16 seeks to detect (and to alert the Commission to) improper conduct by market participants. *See* 18 C.F.R.
17 § 35.28(g)(3)(iv).

18 27. Enforcement commenced an investigation of ETRACOM in July 2011. During the
19 investigation, Enforcement obtained and reviewed thousands of pages of responses to data requests and
20 analyzed hundreds of thousands of electricity trades. The documents reviewed included emails, instant
21 messages and other relevant information. Enforcement took sworn testimony of Rosenberg and an
22 additional ETRACOM contractor.

23 28. After an extensive review and analysis of the data, documents and testimony obtained in
24 the investigation, Enforcement determined that Respondents engaged in an unlawful scheme to
25 manipulate the wholesale electricity markets in California in May 2011 in violation of the Anti-
26 Manipulation Rule. Specifically, Enforcement determined that Respondents submitted virtual supply
27 transactions at the New Melones intertie in order to affect power prices and economically benefit
28 ETRACOM's CRRs sourced at that location.

1 29. Enforcement estimated that ETRACOM unjustly profited by at least \$315,072 and
2 harmed the market by at least \$1,514,207.

3 30. On July 17, 2014, pursuant to the Commission's policies, staff sent a 21-page letter to
4 Respondents detailing Enforcement staff's preliminary findings that Respondents had violated the Anti-
5 Manipulation Rule ("Preliminary Findings letter").

6 31. On September 30, 2014, Respondents submitted a response to the Preliminary Findings
7 letter including a lengthy expert report (totaling approximately 100 pages). Enforcement staff reviewed
8 this response and was not persuaded to revise its findings.

9 32. On July 27, 2015, pursuant to the Commission's rules and policies, the Commission
10 issued a public Notice of Alleged Violations summarizing Enforcement staff's allegations against the
11 Respondents. Enforcement then engaged Respondents in settlement negotiations but failed to reach an
12 agreement.

13 33. On July 31, 2015, Enforcement staff issued a letter to Respondents pursuant to 18 C.F.R.
14 § 1b.19 ("1b.19 Letter"), notifying them that Enforcement staff intended to recommend that the
15 Commission issue an Order to Show Cause. The 1b.19 Letter also informed Respondents that they each
16 may submit a response, which would be provided to the Commission at the same time as Enforcement
17 staff's recommendation.

18 34. On September 30, 2015, Respondents submitted a 58-page response to the 1b.19 letter.
19 The responses also included a 66-page expert affidavit and 36 attachments, including a large quantity of
20 data, totaling over 22 MB. Enforcement staff reviewed this response and was not persuaded to revise its
21 findings.

22 35. Enforcement, pursuant to Commission procedures, provided its Staff Report to the
23 Commission detailing Enforcement's findings and recommending the Commission issue an Order to
24 Show Cause against Respondents. Enforcement also provided the Commission with Respondents'
25 response to the 1b.19 letter (and all attachments).

26 **THE COMMISSION'S ADJUDICATIVE PROCEEDING**

27 36. On December 16, 2015, the Commission issued an Order to Show Cause, pursuant to
28 FPA Section 31(d)(1), 16 U.S.C. § 823b(d)(1), attaching the Staff Report. *ETRACOM LLC and*

1 *Michael Rosenberg*, 153 FERC ¶ 61,314 (2015) (“Order to Show Cause”) (attached as Exhibit 2 to this
2 Petition). The Commission provided Respondents with notice and opportunity for a public hearing and
3 ordered Respondents to show cause why they should not be found to have violated FPA Section 222, 16
4 U.S.C. § 824v, and the Anti-Manipulation Rule, assessed civil penalties of \$2,400,000 for ETRACOM
5 and \$100,000 for Rosenberg and ordered ETRACOM to disgorge \$315,072 in unjust profits.

6 37. Following the issuance of the Order to Show Cause, on December 21, 2015, Enforcement
7 filed with the Commission the documents produced by ETRACOM and third parties during the
8 investigation, non-public market data and Enforcement’s analysis. These documents included, but were
9 not limited to, all documents relied upon in the Staff Report. Enforcement supplemented this filing on
10 March 10, 2016 and April 15, 2016.

11 38. The Order to Show Cause also gave Respondents the choice of either a formal public
12 hearing on the record, before an Administrative Law Judge (“ALJ”) pursuant to FPA Section 31(d)(2),
13 or, alternatively, the procedures of FPA Section 31(d)(3)(B), which authorizes respondents to opt for a
14 procedure in which the Commission determines whether a violation occurred and whether to assess
15 penalties after reviewing the administrative record and the parties’ factual and legal submissions. 16
16 U.S.C. § 823b(d)(2); 16 U.S.C. § 823b(d)(3)(B).

17 39. On January 14, 2016, Respondents elected the determination of violations and penalties
18 by the Commission pursuant to FPA Section 31(d)(3)(B) and waived their opportunity for a formal
19 public hearing before an ALJ under FPA Section 31(d)(2), including the discovery rights afforded to
20 litigants in administrative proceedings at the Commission.

21 40. Respondents submitted an 89-page Joint Answer to the Order to Show Cause on February
22 16, 2016, including substantial factual and legal arguments supported by two expert affidavits totaling
23 176 additional pages. On March 17, 2016, Enforcement filed a 36-page Reply with 31 pages of
24 attachments. Order Assessing Civil Penalties P 11-38 (describing these submissions and other filings).

25 **THE COMMISSION’S ORDER FINDING RESPONDENTS VIOLATED THE**
26 **ANTI-MANIPULATION RULE**

27 41. Based on the extensive administrative record before it and the parties’ briefs, on June 17,
28 2016, the Commission issued an Order Assessing Civil Penalties against Respondents. The Order

1 Assessing Civil Penalties, attached as Exhibit 1, is expressly adopted and incorporated by reference in
2 this Petition. The Commission found that:

3 ETRACOM LLC (ETRACOM) and Michael Rosenberg (Rosenberg)
4 (collectively, Respondents) violated section 222 of the Federal Power Act
5 (FPA) and section 1c.2 of the Commission's regulations, which prohibit
6 energy market manipulation, through a scheme to submit virtual supply
7 transactions at the New Melones intertie (New Melones) at the border of
the California Independent System Operator (CAISO) wholesale electric
market in order to affect power prices and economically benefit
ETRACOM's Congestion Revenue Rights (CRRs) sourced at that
location.

8 Order Assessing Civil Penalties P 1 (citations omitted). The Commission explained in detail its findings
9 and analysis as to why Respondents were liable for violating FPA Section 222 (codified as 16 U.S.C. §
10 824v), and the Anti-Manipulation Rule.

11 42. In the Order Assessing Civil Penalties, the Commission assessed a civil penalty against
12 ETRACOM of \$2,400,000 and a civil penalty against Rosenberg of \$100,000. *Id.* PP 174-179, 184-193.
13 The Commission also ordered ETRACOM to disgorge unjust profits of \$315,072 plus applicable
14 interest. *Id.* PP 196-199.

15 **A. Respondents' Trading Activity**

16 43. The Commission found that while Enforcement and Respondents dispute how the data
17 and contemporaneous evidence should be interpreted, they generally agreed on the factual basis of
18 ETRACOM's virtual trading and CRR positions and the resulting profits and losses from those
19 positions. *Id.* P 45. Below is a summary of those facts.

20 44. In February 2011, ETRACOM held a CRR position of approximately 3 MW sunk at New
21 Melones and engaged in virtual trading at nine locations, not including New Melones. *Id.* P 42. In
22 March 2011, ETRACOM held an even smaller CRR position sunk at New Melones and engaged in
23 virtual trading at 19 locations, including New Melones. *Id.* P 43.

24 45. In April 2011, ETRACOM expanded its CRR position at New Melones to 20 MW in
25 both on-peak and off-peak hours, but reversed the direction of its position. ETRACOM's CRRs in April
26 were sourced at New Melones and sunk within CAISO, thus ETRACOM would profit from import
27 congestion into CAISO. Over the course of the month, ETRACOM's CRRs generated approximately
28

1 \$195,000 in profits. ETRACOM continued its virtual trading that month, expanding to 22 locations, but
2 did not engage in any virtual transactions at New Melones. *Id.* P 44.

3 46. In May, ETRACOM acquired larger CRR positions sourced at New Melones (35 MW
4 on-peak and 25 MW off-peak). From May 1-7, import congestion into CAISO appeared on the New
5 Melones intertie, resulting in a lower LMP at New Melones. This was consistent with ETRACOM's
6 expectations based on the direction of its CRRs. The CRR positions were overall profitable for the first
7 ten days of May, earning ETRACOM total revenue of \$147,388. *Id.* P 46.

8 47. From May 8-13, export congestion occurred at New Melones in most off-peak hours
9 resulting in a higher LMP. As a result, ETRACOM lost over \$23,624 on its monthly CRR positions
10 during hours with export congestion on those six days. *Id.* P 47.

11 48. From May 14-31, a period identified as the "Manipulation Period" by the Commission,
12 ETRACOM began a virtual trading strategy that Rosenberg developed. This strategy would ultimately
13 lead to ETRACOM losing over \$40,000 on its virtual trades, while profiting over \$500,000 on its CRR
14 positions during the same period. *Id.* P 50. In 96% of the hours ETRACOM's offers were accepted by
15 the market, or "cleared," its offers lost money. *Id.* P 50. On the first day of the strategy, May 14,
16 ETRACOM placed \$0 virtual supply offers at the New Melones intertie in hours ending 1-6 and 23-24,
17 which included all but one of the hours (hour ending 7) in which export congestion had appeared in
18 previous days. *Id.* P 48. A \$0 supply offer signals to the market that you are willing to sell electric
19 energy without getting paid for it. For those hours in which ETRACOM's offers cleared, the offers
20 were identical to the New Melones LMP of \$0, indicating that ETRACOM set the LMP. *Id.* In every
21 hour that ETRACOM placed its virtual supply offers on May 14, there was no resulting export
22 congestion, and ETRACOM's off-peak CRR position once again generated positive revenue. *Id.*
23 However, in hour ending 7, the only off-peak hour in which ETRACOM did not place virtual supply
24 offers, export congestion appeared and ETRACOM lost money on its CRR. *Id.*

25 49. On May 15, ETRACOM continued placing \$0 virtual supply offers in hours ending 1-6
26 and 23-24, but also added hour ending 7. ETRACOM's offers set the New Melones LMP to \$0 in five
27 hours (hours-ending 1, 2, 3, 6 and 7). *Id.* P 49. In the hours it submitted offers but did not set the LMP
28 it was because its offers did not clear. Once again, there was no resulting export congestion in all of the

1 hours that ETRACOM's \$0 virtual supply offers cleared, and ETRACOM's CRR positions generated
2 positive revenue. From May 14-15, ETRACOM suffered a net loss of \$52 on its virtual trades at New
3 Melones and earned \$28,059 on its CRRs. *Id.*

4 50. ETRACOM expanded its virtual supply trading at New Melones to nearly every hour
5 from May 16-31. During this period, ETRACOM offered more MWs of virtual supply at lower offer
6 prices than it did May 14-15, often near the lowest permissible bid of negative \$30. *Id.* P 50. Negative
7 supply offers are often uneconomic and signal to the market that you are willing to pay to sell. As
8 expected, ETRACOM's negative offers frequently set the LMP at negative values. All told,
9 ETRACOM lost a total of \$42,481 on their virtual trading at New Melones in May, with their virtual
10 transactions losing money in 379 out of 393 (96%) of the hours in which they cleared at New Melones
11 that month. *Id.* Despite mounting losses, ETRACOM continued trading its virtual supply strategy at
12 New Melones until May 31, when its monthly CRR positions expired.

13 51. While ETRACOM was losing money on its virtual supply transactions during the second
14 half of May, it more than doubled the revenue on its New Melones CRR positions. ETRACOM
15 averaged hourly CRR revenues of approximately \$1,198 between May 14 and 31 in the hours it was
16 placing virtual supply offers, more than twice its average hourly revenue of \$554 from May 1-13. *Id.* P
17 52. In May, ETRACOM earned over \$690,122 in total revenue from its New Melones CRR positions,
18 earning almost 75% of that total (\$517,423) during May 14-31, when it was implementing its virtual
19 trading strategy. *Id.*

20 **B. The Commission Found Respondents' Engaged in a Manipulative Scheme**

21 52. The Commission found Respondents intentionally engaged in an unlawful scheme in
22 May 2011 by engaging in virtual transactions at the New Melones intertie not for any legitimate reason,
23 such as arbitraging the difference between day-ahead and real-time prices, but rather with the intent to
24 artificially lower the New Melones day-ahead LMP to benefit its CRR positions. *Id.* PP 57 & 96. The
25 Commission frequently refers to schemes in which market participants improperly trade in one market
26 with the intent to move price to the benefit of positions in a related market as cross-market manipulation.
27 *Id.* P 97. In reaching this conclusion, as described below, the Commission found that the three elements
28 necessary for a manipulation violation had been met.

1 **1. Respondents' Conduct Constituted a Fraudulent Device, Scheme or Artifice**

2 53. The Commission found that, based on the totality of evidence, Respondents' virtual
3 trading constituted a device, scheme, or artifice to defraud the CAISO market and market participants.
4 As described in further detail below, the Commission reached this conclusion after considering the
5 evidence relating to: (i) the timing and pattern of Respondents' virtual transactions at New Melones
6 before and after the Manipulation Period; (ii) Respondents' consistent losses on its virtual supply
7 transactions at New Melones during the Manipulation Period; (iii) Respondents' communications,
8 testimony, and evidence substantiating the existence of a scheme to defraud; and (iv) Respondents'
9 failure to offer credible and relevant explanations for their virtual trading during the Manipulation
10 Period. *Id.* P 98.

11 54. The Commission found that Respondents' trading patterns before, during, and after the
12 Manipulation Period presented a clear picture of a manipulative trading scheme. As opposed to the
13 period prior to and after the Manipulation Period, the Commission found ETRACOM's trading pattern
14 during the Manipulation Period to be consistent with a trading strategy that was implemented to move
15 prices. *Id.* PP 99-100. Specifically, the Commission noted that ETRACOM's virtual trading was
16 initiated mid-month after five days of consecutive losses on ETRACOM's off-peak CRR position. *Id.* P
17 101. ETRACOM initially selected certain off-peak hours for its virtual trading strategy but then
18 expanded the strategy both by trading 24 hours a day and by increasing the amount of MWs it bid. *Id.*
19 Lastly, ETRACOM ceased trading at the end of the month, coincident with a substantial reduction in its
20 CRR positions at New Melones. *Id.* P 102.

21 55. The Commission reviewed the trade data associated with ETRACOM's virtual trading
22 strategy and found that ETRACOM's virtual trades during the Manipulation Period were uneconomic,
23 which supports the Commission's conclusion that Respondents' strategy was a manipulative scheme to
24 defraud. *Id.* PP 103-104. ETRACOM's trades were consistently unprofitable and ETRACOM could
25 not reasonably have expected them to be profitable given historical market prices. *Id.* P 103. The
26 Commission found Respondents to be indifferent to its virtual trading losses, and instead to have
27 prioritized the profitability of its CRR positions that benefited from the lower prices. *Id.* P 111.
28

1 56. In addition to the trading pattern and data that clearly illustrated the manipulative scheme,
2 the Commission was persuaded by various contemporaneous communications and other evidence that
3 further substantiated Respondents' manipulative scheme and showed that Respondents had a continuing
4 and disproportionate focus on their trading at New Melones. *Id.* P 108. Specifically, the Commission
5 cited evidence establishing that Respondents closely tracked ETRACOM's performance at New
6 Melones; were aware of their virtual trading losses at New Melones; and were aware that their virtual
7 trades impacted price. *Id.* PP 106-112.

8 57. Lastly, the Commission considered Respondents primary explanations for their virtual
9 trading, that ETRACOM's virtual trading was based on an expectation of a large scale hydro event and
10 that market flaws and software errors were to blame, and found them unsupported by the evidence. *Id.*
11 PP 113-131.

12 **2. Respondents Acted with the Requisite Scierter**

13 58. The Commission found that Respondents acted with the requisite scierter in connection
14 with their scheme. *Id.* PP 149-158. Specifically, the Commission found sufficient evidence
15 demonstrating Respondents' manipulative intent from the characteristics of the scheme itself, as well as
16 the contemporaneous IM communications, testimony, trade data, and other evidence, and the absence of
17 market fundamentals underlying the virtual trading at issue. This evidence satisfies the scierter element
18 by showing that Respondents: (1) traded virtuals at New Melones in a consistently uneconomic manner
19 with knowledge that they were losing money on that trading; (2) traded virtuals in ways that differed
20 from their virtual trading at other locations; and (3) understood that their virtual trading at New Melones
21 was setting or depressing the LMP at New Melones and that their CRRs benefited from a lower LMP at
22 New Melones. *Id.* P 150.

23 59. First, as described above, Respondents engaged in virtual trading in a consistently
24 uneconomic manner with knowledge that they were losing money on that trading. Respondents
25 consistently lost money on their \$0 or negatively priced virtual supply offers at New Melones despite
26 receiving feedback from daily reports that such offers were consistently unprofitable. *Id.* P 151.
27 Further, IM communications confirm that Rosenberg and other ETRACOM partners and consultants
28 were aware of ETRACOM's virtual trading losses at New Melones and discussed those losses with each

1 other. *Id.* ETRACOM endured its losses on its virtual trading because it expected to—and actually
2 did—profit from the resulting gains to its CRR position. *Id.* P 152.

3 60. Second, after analysis of ETRACOM’s trading, the Commission found that Respondents’
4 virtual trading at New Melones during the Manipulation Period differed significantly from their virtual
5 trading at other locations. *Id.* PP 153-154. Unlike Respondents’ trading at other locations, ETRACOM
6 began trading at New Melones mid-month, submitted virtual supply offers 24 hours a day and abruptly
7 stopped its virtual trading at the end of May. *Id.* P 153. The Commission found that unlike
8 Respondents’ trading at New Melones, ETRACOM’s trading at the other nodes appeared to be sensitive
9 to losses and justified based on price signals. *Id.* P 154. The Commission found that Respondents’
10 uneconomic virtual trading strategy at New Melones coincided with the profitability of ETRACOM’s
11 CRRs, further demonstrating the manipulative intent of their trading strategy. *Id.* P 155. Based on the
12 distinct characteristics of Respondents’ virtual trading strategy, the Commission concluded that
13 ETRACOM’s virtual trading strategy was motivated by their desire to affect prices in order to profit on
14 their CRR positions and not by legitimate purposes. *Id.*

15 61. Lastly, the Commission found that Respondents understood that their virtual trading at
16 New Melones was setting or depressing the LMP at New Melones and that their CRRs benefited from a
17 lower day-ahead LMP at New Melones. *Id.* P 156. The Commission noted evidence establishing that
18 Rosenberg tracked the impact of Respondents’ virtual trading strategy through a spreadsheet that
19 specifically highlighted the hours in which ETRACOM’s offers equaled the LMP. *Id.* The Commission
20 also found that Respondents knew that their CRR positions sourced at New Melones benefited from a
21 lower day-ahead LMP and were monitoring the profitability of those CRR positions frequently. *Id.* P
22 157.

23 3. Respondents’ Manipulative Scheme Involved Jurisdictional Transactions

24 62. The Commission found Respondents’ manipulative scheme involved conduct “in
25 connection with” transactions subject to the Commission’s jurisdiction. The Commission has broad
26 authority under FPA Section 201(b)(1), over “the transmission of electric energy in interstate commerce
27 and . . . the sale of electric energy at wholesale in interstate commerce” 16 U.S.C. § 824(b)(1).
28 The Commission also has a responsibility under FPA Sections 205(a)-(b) to ensure that rates and

1 charges for transmission and wholesale power sales are just and reasonable and not unduly
2 discriminatory or preferential. 16 U.S.C. § 824(d)(a)-(b). Virtual trades conducted under a Commission
3 approved tariff, such as those submitted by Respondents, are integral to the operation and settlement of
4 Commission-jurisdictional wholesale markets. Order Assessing Civil Penalties P 162. Virtual trades
5 affect the market clearing price for wholesale power and fall under the Commission's jurisdiction. *Id.* P
6 163.

7 **C. The Commission Determined Appropriate Civil Penalties and Disgorgement**

8 63. Having concluded that Respondents engaged in manipulation, the Commission assessed
9 penalties of \$2,400,000 for ETRACOM and \$100,000 for Rosenberg. *Id.* PP 174, 193.

10 64. The Commission found these penalties to be statutorily authorized under the FPA and
11 appropriate in this case. The Commission determined the penalty amounts recommended by
12 Enforcement were well below the maximum penalty amounts authorized by the FPA. *Id.* PP 165-66,
13 179. The Commission further determined that the penalty against ETRACOM was within the range
14 provided by the Commission's Penalty Guidelines, a framework based on the corporate fine provisions
15 of the United States Sentencing Guidelines that the Commission uses in determining potential civil
16 penalty amounts for organizations. *Id.* P 174-79; *see Enforcement of Statutes, Orders, Rules, and*
17 *Regulations*, 132 FERC ¶ 61,216 (2010). The Commission's Penalty Guidelines do not apply to
18 individuals; therefore, in assessing a penalty against Rosenberg the Commission considered several
19 factors including the seriousness of the violation and any mitigating factors consistent with its *Revised*
20 *Policy Statement on Enforcement*. 123 FERC ¶ 61,156 (2008).

21 65. Lastly, the Commission ordered ETRACOM to disgorge all of its profits, plus interest,
22 from the manipulative scheme, estimated at \$315,072. Order Assessing Civil Penalties PP 196-200.
23 The Commission adopted Enforcement's calculation of disgorgement, which separates ETRACOM's
24 legitimate and fraudulently obtained profits by extrapolating ETRACOM profits from May 8-13 through
25 the end of May to estimate what profits would have been had ETRACOM not engaged in manipulation.
26 *Id.* PP 197-198.

JURY DEMAND

1
2 66. The Commission respectfully submits that this Court can and should affirm the penalty
3 assessment without modification following a review of the Commission’s Order Assessing Civil
4 Penalties and the administrative record presented to the Commission during the penalty assessment
5 process.

6 67. Should the Court determine; however, that its review of the Order Assessing Penalties
7 requires a trial on any issue, the Commission, pursuant to Rule 38 of the Federal Rules of Civil
8 Procedure, demands a trial by jury on all issues triable as such.

CLAIM FOR RELIEF

9
10 (Against All Respondents for Violating FPA Section 222, 16 U.S.C. § 824v, and the
11 Commission’s Anti-Manipulation Rule, 18 C.F.R. § 1c.2)

12 68. The Commission repeats each and every allegation set forth in Paragraphs 1 through 67,
13 inclusive, as if set forth fully herein.

14 69. Respondents used or employed a fraudulent device, scheme, or artifice, or engaged in an
15 act, practice, or course of business that operates or would operate as a fraud or deceit, with scienter, in
16 connection with electric energy subject to the jurisdiction of the Commission in contravention of FPA
17 Section 222, 16 U.S.C. § 824v, and the Commission’s Anti-Manipulation Rule, 18 C.F.R. § 1c.2
18 promulgated to implement that section of the FPA. Each manipulative trade conducted by Respondents
19 during the Manipulation Period constitutes a separate violation of FPA Section 222, 16 U.S.C. § 824v,
20 and the Commission’s Anti-Manipulation Rule, 18 C.F.R. § 1c.2.

21 70. Accordingly, the Commission is entitled to an Order from this Court affirming its
22 assessment of civil penalties against Respondents under FPA Section 31, 18 U.S.C. § 823b(d)(3)(B), and
23 ordering Respondent ETRACOM to disgorge its unjust profits.

REQUESTED RELIEF

WHEREFORE, the Commission respectfully requests that this Court:

- (A) Enter an order and judgment affirming the Commission’s assessment of a \$2,400,000 civil penalty against Respondent ETRACOM.
- (B) Enter an order and judgment affirming the Commission’s assessment of a \$100,000 civil penalty against Respondent Rosenberg.
- (C) Enter an order requiring Respondent ETRACOM to disgorge \$315,072, plus interest, in unjust profits obtained as a result of its illegal manipulative scheme.
- (D) Order such other and further relief as may be necessary and appropriate.

DATED: August 17, 2016

FEDERAL ENERGY REGULATORY COMMISSION

LARRY PARKINSON
Director, Office of Enforcement

LEE ANN WATSON
Deputy Director, Office of Enforcement

COURTNEY SPIVEY URSCHEL
Acting Director, Division of Investigations

By: /s/ Catherine C. Collins
CATHERINE C. COLLINS
DANIEL T. LLOYD
JOHN R. MATSON III
KATHERINE WALSH
Office of Enforcement
Federal Energy Regulatory Commission
888 1st Street, N.E.
Washington, DC 20426
Telephone: 202-502-6572
Catherine.Collins@ferc.gov
Daniel.Lloyd@ferc.gov
Jay.Matson@ferc.gov
Katherine.Walsh@ferc.gov

Attorneys for Petitioner

EXHIBIT 1

155 FERC ¶ 61,284
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

ETRACOM LLC and Michael Rosenberg

Docket No. IN16-2-000

ORDER ASSESSING CIVIL PENALTIES

(Issued June 17, 2016)

TABLE OF CONTENTS

	<u>Page Numbers</u>
I. Background.....	- 2 -
A. Relevant Entities.....	- 2 -
B. The CAISO Market	- 3 -
C. Products: CRRs and Virtual Transactions.....	- 4 -
II. Procedural History	- 6 -
III. Discussion.....	- 9 -
A. Procedural Matters.....	- 9 -
1. Investigative Materials	- 9 -
2. Unauthorized Pleadings.....	- 10 -
3. Request for Rehearing of May 6, 2016 Order	- 12 -
B. Substantive Matters	- 15 -
1. Standard of Review	- 15 -
2. Findings of Fact – Relevant Virtual Trading Conduct and CRR Positions .	- 16 -
a. Pre-Manipulation Period	- 16 -
b. Manipulation Period	- 18 -
c. Post-Manipulation Period.....	- 23 -
3. Determination of Violations	- 23 -
a. Fraudulent Device, Scheme or Artifice or Course of Business that Operated as a Fraud.....	- 23 -
b. Scierter	- 57 -
c. In Connection with a Jurisdictional Transaction.....	- 68 -
4. Remedies and Sanctions.....	- 69 -

1. In this order, we find that ETRACOM LLC (ETRACOM) and Michael Rosenberg (Rosenberg) (collectively, Respondents) violated section 222 of the Federal Power Act (FPA)¹ and section 1c.2 of the Commission's regulations,² which prohibit energy market manipulation, through a scheme to submit virtual supply transactions at the New Melones intertie (New Melones) at the border of the California Independent System Operator (CAISO) wholesale electric market in order to affect power prices and economically benefit ETRACOM's Congestion Revenue Rights (CRRs) sourced at that location. In light of the seriousness of these violations, we find that it is appropriate to assess civil penalties pursuant to section 316A of the FPA³ in the following amounts: \$2,400,000 against ETRACOM and \$100,000 against Rosenberg. The Commission further directs ETRACOM to disgorge unjust profits, plus applicable interest, pursuant to section 309 of the FPA,⁴ in the following amount: \$315,072.

I. Background

A. Relevant Entities

2. ETRACOM LLC is a financial trading company formed in 2008.⁵ In 2011, ETRACOM had three members who owned and operated the company.⁶ ETRACOM also contracted with a few consultants.⁷ ETRACOM operates only in the CAISO, trading exclusively in two products: (1) CRRs and (2) virtual supply bids and virtual demand bids, also known as virtual transactions or convergence bidding.⁸ ETRACOM first traded in CAISO in November 2008 by trading CRRs in CAISO's annual CRR auction.⁹

¹ 16 U.S.C. § 824v(a) (2012).

² 18 C.F.R. § 1c.2 (2015) (Anti-Manipulation Rule).

³ 16 U.S.C. § 825o-1 (2012).

⁴ *Id.* § 825h.

⁵ Tr. 21:6-7 (Rosenberg).

⁶ *Id.* at 51:15-20.

⁷ *Id.* at 43:15-18.

⁸ *Id.* at 38:25-39:1, 40:1-3.

⁹ *Id.* at 25:6-10.

ETRACOM began trading in virtual supply and demand in February 2011, when CAISO first introduced convergence bidding.¹⁰

3. Michael Rosenberg is a founding member of ETRACOM and has about a 75 percent interest in the company.¹¹ He is responsible for developing ETRACOM's trading strategies and data analysis.¹² Rosenberg holds bachelor's and graduate degrees in physics, as well as a certificate in finance from the Cox School of Business at Southern Methodist University.¹³ Rosenberg has extensive industry experience: before founding ETRACOM, he worked for several power and gas companies, including three years as a Manager of Market Assessment at ISO New England, Inc. and two years as a Manager of Quantitative Analysis at Pacific Gas & Electric Company.¹⁴

B. The CAISO Market

4. CAISO operates a competitive wholesale electricity market that uses locational marginal prices (LMP) for settlements of purchases and sales at specific locations.¹⁵ Locations inside the CAISO market are called nodes and locations at the borders are called interties. The LMP at each location consists of three components: (i) energy price (which is the same at all locations); (ii) the cost of congestion, which reflects the added cost of meeting demand at a location that, due to constraints in the transmission system, cannot be met by dispatching power from lower-cost generators located outside the constrained area; and (iii) the cost of physical transmission line losses.¹⁶

5. During the period relevant to this matter, CAISO operated three market processes: (i) the day-ahead market, which produced power schedules and LMPs for each hour of the following day; (ii) the hour-ahead, called the Hour Ahead Scheduling Process (HASP), which ran every 15 minutes in advance of the real-time; and (iii) the real-time,

¹⁰ Tr. 68:15-21 (Rosenberg).

¹¹ *Id.* at 51:15-20.

¹² *Id.* at 26:7-21.

¹³ *Id.* at 12:3-13:5.

¹⁴ *Id.* at 14:8-18:5.

¹⁵ *See* CAISO, Electronic Tariff, app. C, Fifth Replacement (CAISO Tariff).

¹⁶ *Id.*

which ran every five minutes.¹⁷ In addition, CAISO set an LMP for each internal and intertie price node in each of these market processes.

6. The New Melones intertie is located in eastern central California, and it interconnects transmission between CAISO's balancing area authority and the Sacramento Municipal Utility District/Western Area Power Authority (WAPA) balancing authority area.¹⁸ WAPA owns the physical scheduling rights to the New Melones intertie,¹⁹ which has a maximum capacity of 384 MW,²⁰ and uses its scheduling rights to import generation from a hydroelectric power generating resource into CAISO's balancing authority area. Due to WAPA's scheduling rights, in 2011 it was the only entity that CAISO permitted to submit bids for physical imports or exports at New Melones; however, other entities were permitted to submit virtual bids.²¹

C. Products: CRRs and Virtual Transactions

7. CRRs are financial instruments that settle at an amount equal to the difference in day-ahead congestion costs between two locations.²² CAISO offers monthly and seasonal CRRs for purchase in competitive annual and monthly auctions. Monthly CRRs have a term of one month and seasonal CRRs have a term of three months. CRRs are differentiated by time of use periods (on-peak and off-peak) for each day covered by the

¹⁷ See *Cal. Indep. Sys. Operator Corp.*, 143 FERC ¶ 61,087, at PP 3-4 (2013); CAISO Business Practice Manual for Market Operations, Section 2.3 (version 18, May 18, 2011).

¹⁸ CAISO Department of Market Monitoring (DMM) Referral to Office of Enforcement, Attach. 1 at 1 (Jul. 29, 2011) (DMM Referral).

¹⁹ *Id.*

²⁰ *Id.*

²¹ CAISO implemented virtual bidding, both at interties and internal nodes, on February 1, 2011. See *Cal. Indep. Sys. Operator Corp.*, 133 FERC ¶ 61,039, at P 121 (2010) (Convergence Bidding Order), *order on reh'g*, 134 FERC ¶ 61,070 (2011), *order on reh'g*, 136 FERC ¶ 61,056 (2011). In September 2015, the Commission ordered CAISO to remove its tariff provisions allowing virtual bidding at the interties. *Cal. Indep. Sys. Operator Corp.*, 152 FERC ¶ 61,234 (2015).

²² See CAISO Tariff § 36; CAISO Business Practice Manual for Congestion Revenue Rights, Section 1.3 (version 9, Mar. 24, 2011) (CRR BPM).

CRR.²³ Each CRR consists of a source node and sink node, which designates the direction of the CRR. The holder receives a payment if the congestion in a given hour is in the same direction as the CRR and the holder incurs a charge if congestion occurs in the opposite direction.²⁴ The per-MW payment or charge is equal to the marginal cost of congestion at the sink minus the marginal cost of congestion at the source for each hour in the day-ahead market.²⁵

8. In the CAISO market, virtual transactions are a mechanism for market participants to make financial sales or purchases of energy in the day-ahead market with the explicit requirement to buy or sell it back in the real-time market.²⁶ An accepted virtual demand bid is equivalent to buying energy at a node in the day-ahead market, with the obligation to sell the same energy back in the real-time market.²⁷ A market participant makes money if it buys energy at a lower price in the day-ahead market than it subsequently sells the energy back in the real-time. Conversely, a virtual supply bid is equivalent to the sale of energy at a node in the day-ahead market with the obligation to buy that energy back in the real-time market. A market participant makes money when it sells the energy at a higher price in the day-ahead market than the price at which it buys the energy back in the real-time.

9. Interties represent the border between CAISO and a neighboring balancing authority area. At an intertie, power leaving CAISO is considered an export, and power entering CAISO is considered an import. A virtual demand bid at an intertie is treated as an export because it represents a market participant selling or supplying energy from the CAISO into another balancing authority area. Conversely, a virtual supply bid at an intertie is treated as an import because it represents a market participant purchasing energy that comes into CAISO from another balancing authority area. During the

²³ See CAISO Tariff §§ 36.2.5, 36.2.6, 36.2.7.

²⁴ CRR BPM at § 1.3.

²⁵ *Id.*

²⁶ California ISO, *Convergence Bidding*, <http://www.caiso.com/informed/Pages/StakeholderProcesses/CompletedStakeholderProcesses/ConvergenceBidding.aspx> (last visited Apr. 12, 2016); see CAISO Tariff § 31.

²⁷ See *Cal. Indep. Sys. Operator Corp.*, 137 FERC ¶ 61,157, at P 2 (2011).

relevant time period, virtual transactions at the interties settled off of the difference between LMPs in the day-ahead and HASP.²⁸

10. Virtual bids can influence a CRR position because virtual supply and demand transactions are evaluated in CAISO's day-ahead market process along with physical power supply and demand transactions.²⁹ Consequently, both types of transactions can create congestion on transmission constraints, including interties, and both can eliminate congestion on these constraints.³⁰ Thus, if an intertie is congested by exports, placing a virtual supply bid (import) could relieve the congestion, as the net flow (meaning the net cleared imports and exports) would decrease or cancel out the exports. By relieving the congestion, the virtual supply bid would therefore lower the LMP by reducing the congestion cost component of LMP. The lowered LMP, in turn, would impact the profitability of CRRs and other products that settle off of the LMP.³¹

II. Procedural History

11. CAISO's Department of Market Monitoring (DMM) referred this matter to the Commission's Office of Enforcement (OE) on July 29, 2011, alleging that ETRACOM's virtual bidding behavior from May 14 to 31, 2011, potentially violated FERC's prohibition of electric energy market manipulation.

12. OE Staff conducted an investigation, obtaining responses to data requests, taking sworn testimony of witnesses, and analyzing trading, market, and pricing data.

13. On July 17, 2014, OE Staff issued a preliminary findings letter to ETRACOM and Rosenberg, explaining the factual and legal bases for its preliminary findings of violations. ETRACOM and Rosenberg responded on September 30, 2014.

14. OE Staff and Respondents conducted settlement negotiations, but they were unsuccessful. On July 27, 2015, the Office of the Secretary issued a Notice of Alleged

²⁸ *Id.* CAISO no longer utilizes HASP prices for settling virtual transactions. Instead, as of May 1, 2014, virtual transactions in CAISO settle against 15-minute real-time market prices. *See Cal. Indep. Sys. Operator Corp.*, 146 FERC ¶ 61,204 (2014).

²⁹ *Cal. Indep. Sys. Operator Corp.*, 149 FERC ¶ 61,093, at P 3 (2014).

³⁰ *See id.* P 4; CAISO Business Practice Manual for Market Operations, §§ 2.2.4 Congestion Revenue Rights, § 3.1 Model Description (version 45, Mar. 31, 2016).

³¹ *See Cal. Indep. Sys. Operator Corp.*, 149 FERC ¶ 61,093 at P 4.

Violations. On July 31, 2015, OE Staff provided ETRACOM and Rosenberg written notice, pursuant to 18 C.F.R. § 1b.19 (2015), of OE Staff's intent to recommend that the Commission issue an Order to Show Cause. ETRACOM and Rosenberg responded on September 30, 2015.

15. On December 16, 2015, the Commission initiated the instant proceeding by issuing an Order to Show Cause to ETRACOM and Rosenberg.³² The Enforcement Staff Report and Recommendation (Staff Report) attached to the order alleged that ETRACOM and Rosenberg violated the Commission's Anti-Manipulation Rule and the FPA by placing uneconomic virtual transactions at the New Melones intertie with the intent to benefit related CRR positions between May 14 and 31, 2011. The Staff Report recommended that the Commission assess civil penalties in the amount of \$2,400,000 against ETRACOM and \$100,000 against Rosenberg, and order ETRACOM to disgorge \$315,072 plus interest in unjust profits.³³

16. The Order to Show Cause directed the Respondents to file an answer within 30 days showing why (1) they should not be found to have violated section 1c.2 of the Commission's regulations and section 222 of the FPA by submitting virtual supply transactions at the New Melones intertie in order to affect power prices and economically benefit ETRACOM's CRRs sourced at that location; (2) ETRACOM should not pay a civil penalty of \$2,400,000; (3) Rosenberg should not pay a civil penalty in the amount of \$100,000; and (4) ETRACOM should not disgorge \$315,072 plus interest in unjust profits. The Order to Show Cause also stated that Respondents could, within 30 days, elect either an administrative hearing before an Administrative Law Judge (ALJ) at the Commission prior to the assessment of a penalty pursuant to section 31(d)(2) of the FPA or, if the Commission finds a violation, a penalty assessment by the Commission pursuant to section 31(d)(3)(A) of the FPA. The Order to Show Cause further allowed OE Staff to file a reply within 30 days of the filing of Respondents' answer.

17. On December 21, 2015, OE Staff filed non-public investigative materials, including the investigative documents relied on in the Staff Report. On March 10, 2016, OE Staff filed additional non-public investigative materials. On April 21, 2016, the Commission's Deputy Secretary directed OE Staff to correct the administrative record by filing copies of certain documents that appeared to have been unintentionally omitted. In response, OE Staff filed additional documents on April 25, 2016, explaining that the documents had all been submitted to OE Staff by ETRACOM and that OE Staff had inadvertently omitted them when filing the administrative record.

³² *ETRACOM LLC and Michael Rosenberg*, 153 FERC ¶ 61,314 (2015).

³³ Staff Report at 1, 42.

18. On December 22, 2015, Respondents filed an unopposed motion for extension of time to respond to the Order to Show Cause. Specifically, Respondents requested an extension until February 16, 2016, to file their answer, and an extension until March 17, 2016, for OE Staff to submit its reply. Respondents also stated that they had entered into a tolling agreement with OE Staff, under which the tolling term began on January 16, 2016, and extended through the date on which the Respondents filed their Answer, plus an additional 21 days. The Commission granted the requested extension of time on December 31, 2015.

19. On January 14, 2016, Respondents submitted a joint notice of their election under section 31(d)(3) of the FPA and the Order to Show Cause, electing a penalty assessment if the Commission finds a violation.

20. On February 16, 2016, Respondents electronically filed a joint answer to the Order to Show Cause (Answer), including the affidavit of Shaun D. Ledgerwood (Ledgerwood Affidavit). Appendix B of the Ledgerwood Affidavit is a List of Exhibits. Respondents filed the exhibits listed in Appendix B three days late, on February 19, 2016.

21. On March 4, 2016, Respondents filed a Motion of ETRACOM LLC and Michael Rosenberg to Require Disclosure of Certain Materials and Information, or in the Alternative, for Issuance of a Subpoena (Motion to Require Disclosure). The motion requested that the Commission require CAISO to provide information relating to price formation for convergence bidding at the New Melones intertie and alleged market design flaws and software pricing and modeling errors. On March 17, 2016, CAISO submitted comments on the Motion to Require Disclosure. OE Staff filed an answer to the Motion to Require Disclosure on March 21, 2016. On May 6, 2016, the Commission denied Respondents' Motion to Require Disclosure, and rejected CAISO's comments.³⁴ On June 3, 2016, Respondents filed a Request for Rehearing of the May 6, 2016 Order.

22. On March 17, 2016, OE Staff filed its reply to Respondents' Answer (Staff Reply). Thereafter, on April 19, 2016 Respondents filed a Motion Seeking Leave to File Answer and Answer to Staff Reply of ETRACOM LLC and Michael Rosenberg (Respondents' Sur-Reply). OE Staff filed an answer on April 22, 2016 to Respondents' Sur-Reply. On May 3, 2016, Respondents filed a Submission under 18 C.F.R. § 1b.18 (2015), attaching an Affidavit of Dr. Ronald R. McNamara. OE Staff filed an answer to Respondents' Submission on May 4, 2016.

³⁴ *ETRACOM LLC and Michael Rosenberg*, 155 FERC ¶ 61,149 (2016) (May 6, 2016 Order).

23. On May 13, 2016, in response to the Commission's May 6, 2016 Order, Respondents submitted a letter in which they discuss their election under FPA § 31(d)(3), but they do not request any action from the Commission. Respondents do not seek to revoke their election at this time and provide no legal or factual support for a hypothetical future petition to revoke. The Commission therefore has no basis for deciding whether it would allow any future petition to revoke.

III. Discussion

A. Procedural Matters

1. Investigative Materials

24. Respondents raise a procedural objection about the underlying OE investigation in their joint Answer.³⁵ Respondents allege that this enforcement proceeding is tainted by OE Staff's undue delay in providing them an unredacted copy of the DMM Referral and a December 2013 Memorandum from the DMM. Respondents also contend that OE Staff has a duty to "search the files" of the DMM because CAISO and the DMM are part of the OE "prosecution team."³⁶

25. We reject Respondents' assertions. OE Staff provided Respondents with an unredacted copy of the DMM Referral in July 2014, almost 20 months before Respondents submitted their Answer.³⁷ OE Staff provided Respondents the DMM Memorandum in August 2015, six months before Respondents submitted their Answer.³⁸ Therefore, we find that Respondents were not prejudiced by the timing of the disclosure. As for each party's duty, we find that OE Staff is not required to search the files of CAISO, the CAISO DMM, or any other third party for potentially exculpatory information.³⁹ Respondents err in suggesting that CAISO or the DMM should be treated

³⁵ Answer at 81-83.

³⁶ *Id.* at 83.

³⁷ Staff Reply at 32.

³⁸ *Id.*

³⁹ See *Policy Statement on Disclosure of Exculpatory Materials*, 129 FERC ¶ 61,248, at P 11 (2009).

as an arm of the Commission in the context of investigations because they clearly are separate entities from the Commission.⁴⁰

2. Unauthorized Pleadings

26. With regard to Respondents' Sur-Reply, the Commission hereby denies the motion and declines to consider the pleading. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2015), prohibits an answer to an answer unless otherwise ordered by the decisional authority. We are not persuaded to accept Respondents' answer and will, therefore, reject it.

27. We also reject Respondents' May 3, 2016 Submission. Section 1b.18 of our regulations pertains to the right to submit documents, statements of facts, or memoranda of law during the course of investigations; it does not address submissions in this order to show cause proceeding, which the Commission instituted pursuant to Rule 209(a)(2) of the Commission's Rules of Practice and Procedure.⁴¹ Although an investigation may continue after the issuance of an Order to Show Cause,⁴² it does not follow that Section 1b.18 allows submission of additional materials to the Commission in this proceeding, outside of the Order to Show Cause's procedural framework. We have made clear that a Section 1b.18 "submission may be made at any time during an investigation, *up to the point at which our procedures regarding Orders to Show Cause come into play, which*

⁴⁰ See, e.g., *Elec. Power Supply Ass'n v. FERC*, 391 F.3d 1255, 1260 (D.C. Cir. 2004); *Cal. Indep. Sys. Operator Corp. v. FERC*, 372 F.3d 395, 397-98, 404 (D.C. Cir. 2004).

⁴¹ 18 C.F.R. § 385.209(a)(2) (2015) ("The Commission may initiate a proceeding against a person by issuing an order to show cause."); *ETRACOM*, 153 FERC ¶ 61,314 at P 1, ordering paras. (A)–(E) (acting pursuant to Rule 209(a)(2) and directing specific procedures); see also *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156, at P 37 (2008) ("[A]n Order to Show Cause commences a Part 385 proceeding.").

⁴² See *Barclays Bank PLC*, 143 FERC ¶ 61,024, at P 33 (2013) (*Barclays*). *Barclays* found that the Commission retained its investigatory authority during the pendency of an Order to Show Cause proceeding, but did not address whether any of the Commission's Part 1b regulations governing investigations were applicable to an Order to Show Cause proceeding. See *id.*

follow specific rules. . .”⁴³ Specifically, subpart B of the Commission’s Rules of Practice and Procedure, which includes Rule 213, applies to an Order to Show Cause.⁴⁴

28. In the Order to Show Cause, we provided a procedural schedule allowing Respondents to file Answers to the Order to Show Cause and OE Staff to file a Reply within specific timeframes.⁴⁵ Respondents state that Dr. McNamara’s affidavit “responds to the position newly raised by OE Staff in its Reply to ETRACOM’s Answer. . . .”⁴⁶ Accordingly, we will construe Respondents’ request to submit Dr. McNamara’s affidavit as a second motion for leave to answer OE Staff’s Reply. Such answers are generally prohibited under the Commission’s Rules of Practice and Procedure.⁴⁷ For the same reasons we reject Respondents’ unauthorized Sur-Reply, we deny them leave to file the May 3, 2016 Submission. Finally, we note that a contrary ruling would create a situation where a Respondent could potentially avoid resolution of a pending Order to Show Cause by continually filing new materials under Section 1b.18. We decline to adopt a reading of the Commission’s procedural rules that would permit such an inefficient result.⁴⁸

29. As part of our adjudication of this matter, we have considered all accepted pleadings and attachments, as well as the investigative materials submitted to the Commission.

⁴³ *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at P 27 (emphasis added); *see also id.* P 39 (an Order to Show Cause “proceeding will continue . . . in accordance with any additional procedures set forth by the Commission in orders issued in the particular proceeding”).

⁴⁴ 18 C.F.R. § 385.201 (2015) (“This subpart applies to any pleading, tariff or rate filing, notice of tariff or rate examination, order to show cause, intervention, or summary disposition.”).

⁴⁵ *ETRACOM*, 153 FERC ¶ 61,314 at ordering paras. (A)–(E).

⁴⁶ Respondents’ May 2, 2016 Motion for Leave to Answer Staff’s Reply at 2.

⁴⁷ 18 C.F.R. § 385.213(a)(2) (2015) (Rule 213(a)(2)).

⁴⁸ We need not, and do not, decide whether Part 1b has no application to Order to Show Cause proceedings here. Rather, we simply conclude that Section 1b.18 does not allow Respondents to circumvent the procedural framework contained in the Order to Show Cause and in the Commission’s Rules of Practice and Procedure, including Rule 213(a)(2).

30. Additionally, we will accept Respondents' late-filed exhibits because they provide information assisting our decision-making process.

3. Request for Rehearing of May 6, 2016 Order

31. The May 6, 2016 Order denied Respondents' March 4, 2016 Motion to Require Disclosure, which sought information and documents from CAISO. Respondents' June 3, 2016 request for rehearing does not cite any authority in our Rules of Practice and Procedure for the filing, but provides a statement of issues and specification of errors consistent with the requirements for a request for rehearing under Rule 713.⁴⁹

32. We have noted that rehearing is improper in the eight other penalty assessment proceedings under FPA section 31(d)(3) (16 U.S.C. § 823b(d)(3)) that exercise our authority under EPAct 2005.⁵⁰ Denial of a request for rehearing is a jurisdictional prerequisite for appeal of a Commission decision to a United States circuit court of appeals.⁵¹ As we have explained in our prior orders, under FPA section 31(d)(3), review of a Commission order assessing civil penalties is undertaken by the appropriate United States district court if the penalty is unpaid.⁵² In the district court enforcement proceeding, respondents are free to raise any alleged Commission errors, including issues of fact and law. Following the district court process, respondents can appeal to the circuit courts.⁵³ Where the procedures of FPA section 31(d)(3) have been elected, direct appeal

⁴⁹ Request for Rehearing at 3-4 (citing 18 C.F.R. § 385.713). Rule 713 is generally applicable to all proceedings, including those initiated by orders to show cause.

⁵⁰ See *Coaltrain Energy, L.P.*, 155 FERC ¶ 61,204, at P 365 (2016); *City Power Mktg., LLC*, 152 FERC ¶ 61,012 at P 275 (2015) (*City Power*); *Houlian Chen*, 151 FERC ¶ 61,179, at P 193 (2015); *Maxim Power Corp.*, 151 FERC ¶ 61,094, at P 155 (2015); *Barclays Bank PLC*, 144 FERC ¶ 61,041, at P 152 (2013); *Richard Silkman*, 144 FERC ¶ 61,164, at P 96 (2013); *Competitive Energy Servs., LLC*, 144 FERC ¶ 61,163, at P 104 (2013); *Lincoln Paper & Tissue, LLC*, 144 FERC ¶ 61,162, at P 80 (2013).

⁵¹ 16 U.S.C. § 825l(a).

⁵² *Id.* § 823b(d)(3)(B); see *Process for Assessing Civil Penalties*, 117 FERC ¶ 61,317, at P 5 (2006); *City Power*, 152 FERC ¶ 61,012 at P 275.

⁵³ *City Power*, 152 FERC ¶ 61,012 at P 275.

of a Commission order to the circuit courts would be inconsistent with the statute. Therefore, Respondents' request for rehearing is dismissed.⁵⁴

33. The Commission may, in its discretion, construe improper requests for rehearing as motions for reconsideration, and we do so here.⁵⁵ We will exercise our discretion and will treat Respondents' filing as a motion for reconsideration of the May 6, 2016 Order. So construed, we deny Respondents' motion for the reasons that follow.

34. In the May 6, 2016 Order, the Commission explained that whether to grant the Motion to Require Disclosure was an issue committed to the Commission's discretion and declined to exercise its discretion.⁵⁶ It did so for three reasons: (1) the requested information was unnecessary based on the voluminous record and the arguments made by Respondents' in their Answer;⁵⁷ (2) the Motion to Require Disclosure was untimely;⁵⁸ and (3) Respondents had opted out of an administrative hearing, which provides for

⁵⁴ In addition, rehearing is improper because the May 6, 2016 Order was a procedural order, not a final order. *See* 18 C.F.R. § 385.713(a)(1). *See also* *AG Hydro, LLC*, 146 FERC ¶ 61,080, at P 1 (2014); *San Diego Gas & Elec. Co.*, 145 FERC ¶ 61,136, at P 1 (2013); *Mobil Exploration & Producing N. America, Inc.*, 42 FERC ¶ 61,305, at P 1 (1988); *Papago Tribal Util. Auth. v. FERC*, 628 F.2d 235, 238-240 (D.C. Cir. 1980) (only final orders are subject to appeal to circuit courts); *Pub. Serv. Co. of N.M. v. FPC*, 557 F.2d 227, 232-233 (10th Cir. 1977) (rehearing and judicial review of procedural or interlocutory orders is improper).

⁵⁵ *See Gulf Oil Corp.*, 28 FERC ¶ 61,192 (1984) (treating a request for rehearing of a non-final order as motion for reconsideration); *KN Energy, Inc.*, 26 FERC ¶ 61,095 (1984) (treating untimely requests for rehearing as motions for reconsideration). Motions for reconsideration are permitted under Rule 212 of the Rules of Practice and Procedure. *See* 18 C.F.R. § 385.212.

⁵⁶ May 6, 2016 Order at P 11.

⁵⁷ May 6, 2016 Order at P 8.

⁵⁸ May 6, 2016 Order at P 9. Respondents waited until after their Answer to the Order to Show Cause had been filed on February 16, 2016 to seek Commission authority to obtain information from CAISO, even though they allege that the information was vital to their defense and they knew in October 2015 that CAISO refused to provide the information.

discovery.⁵⁹ Respondents' newest pleading assigns error only to the first and last of these determinations.

35. First, Respondents argue that the May 6, 2016 Order incorrectly found that Respondents "elected to forego discovery" before an ALJ by choosing the procedures of FPA section 31(d)(3) and that the Commission did not sufficiently "consider and address the nature of the election."⁶⁰ Respondents disagree with the Commission's interpretation of FPA section 31(d)(3) and the role that the district courts will play when asked for "an order affirming the assessment of the civil penalty." The Commission's position has been made clear in every district court enforcement proceeding where the issue of interpreting FPA section 31(d)(3) has been raised.⁶¹ The Commission's position is that the "authority to review de novo" provided by statute under FPA section 31(d)(3) provides substantial procedural discretion to the district court based upon the particular circumstances of the case. In some cases, the court may decide that a review of the order itself and of the record of the administrative proceeding provides a sufficient basis for determination. But, in other cases, the court has discretion to decide that supplemental evidence is needed and that discovery is warranted.

36. In the May 6, 2016 Order, the Commission provided Respondents an opportunity to rescind their election based on their assertion that they required discovery, so that they could be afforded discovery by an ALJ at the hearing should the ALJ find the requested discovery relevant.⁶² Respondents chose to proceed with their election and not an ALJ hearing.

37. Second, Respondents argue that the May 6, 2016 Order failed to acknowledge the necessity of the requested information, asserting that "[u]nderstanding the scope of the market design flaws and software errors is critical to the alleged manipulation and the

⁵⁹ May 6, 2016 Order at P 10-11.

⁶⁰ Request for Rehearing at 4.

⁶¹ See, e.g., Opposition to Affirm Civil Penalties at 4, *FERC v. Barclays Bank PLC*, 105 F. Supp. 3d 1121 (E.D.Cal 2015); Brief on Points and Authorities at 16-17, *FERC v. Houlian Chen*, (E.D.Va. No. 3:15-cv-00452); Brief on Authority to Review De Novo at 16-17, *FERC v. Silkman*, ---F. Supp. 3d---, 2016 WL 1430009 (D. Mass. Apr. 11, 2016); Opposition to Motion to Dismiss at 36, *FERC v. City Power Marketing, LLC*, (D.D.C. No. 1:15-cv-1428).

⁶² See May 6, 2016 Order at n.26.

calculations of alleged disgorgement and market harm . . .”⁶³ and that these issues were not “fully and adequately developed”⁶⁴ by the record in this matter. Respondents’ arguments largely repeat assertions made in the Motion to Require Disclosure. For the reasons expressed in the May 6, 2016 Order,⁶⁵ we disagree. In addition, as noted *infra* in this Order, we now find that the information sought from CAISO was not relevant to this proceeding.⁶⁶ As the Commission explains herein, proof of a “well-functioning market” is not a prerequisite to a finding of manipulation;⁶⁷ Respondents did not need to understand all of the reasons for export congestion in order to implement the alleged manipulative scheme;⁶⁸ and Respondents’ allegations that CAISO violated its tariff are not material to Respondents’ alleged misconduct.⁶⁹

38. For the reasons discussed above, although we exercise our discretion to construe Respondents’ request for rehearing as a motion for reconsideration, we deny the motion.

B. Substantive Matters

1. Standard of Review

39. Section 222 of the FPA makes it unlawful for any entity to use a deceptive or manipulative device in connection with the purchase or sale of electric energy or the transmission of electric energy subject to the Commission’s jurisdiction.⁷⁰ The Commission implemented this prohibition through Order No. 670, which adopted the Anti-Manipulation Rule. That rule, among other matters, prohibits any entity from: (1) using a fraudulent device, scheme, or artifice, or making a material misrepresentation or a material omission as to which there is a duty to speak under a Commission-filed

⁶³ *Id.* at 6.

⁶⁴ *Id.* at 5.

⁶⁵ May 6, 2016 Order at P 8.

⁶⁶ We declined to opine on this issue in the May 6, 2016 Order. *See* May 6, 2016 Order at n. 26.

⁶⁷ *See infra* P 120-21.

⁶⁸ *See infra* P 124-25.

⁶⁹ *See infra* P 128.

⁷⁰ 16 U.S.C. § 824v(a) (2012).

tariff, Commission order, rule, or regulation, or engaging in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity; (2) with the requisite scienter; (3) in connection with the purchase, sale, or transmission of electric energy subject to the jurisdiction of the Commission.⁷¹

40. Pursuant to section 316A(b) of the FPA, the Commission may assess a civil penalty of up to \$1 million per day, per violation against any person who violates Part II of the FPA (including section 222 of the FPA) or any rule or order thereunder.⁷² In determining the amount of a proposed penalty, section 316A(b) requires the Commission to consider “the seriousness of the violation and the efforts of such person to remedy the violation in a timely manner.”⁷³

41. As discussed below, we find that Respondents violated section 222(a) of the FPA and section 1c.2 of the Commission’s regulations by engaging in fraudulent virtual supply transactions at the New Melones intertie at the border of the CAISO wholesale electric market to affect power prices and economically benefit ETRACOM’s CRRs sourced at that location.

2. Findings of Fact – Relevant Virtual Trading Conduct and CRR Positions

a. Pre-Manipulation Period

42. Respondents’ virtual trading conduct and CRR positions at New Melones prior to the May 14, 2011 through May 31, 2011 time period (Manipulation Period) are undisputed by Respondents and OE Staff.⁷⁴ In February 2011, ETRACOM held about a

⁷¹ 18 C.F.R. § 1c.2 (2015); *Prohibition of Energy Market Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202, at P 49, *reh’g denied*, 114 FERC ¶ 61,300 (2006); *see also City Power*, 152 FERC ¶ 61,012 at P 39; *Houlian Chen*, 151 FERC ¶ 61,179, at P 35 (2015) (*Chen*).

⁷² 16 U.S.C. § 825o-1(b) (2012). Under section 3 of the FPA, “‘person’ means an individual or a corporation.” *Id.* § 796(4).

⁷³ 16 U.S.C. § 825o-1(b).

⁷⁴ *See* Staff Report at 7; Answer at 12, 14.

3 MW CRR position sinking at New Melones,⁷⁵ which meant that ETRACOM would profit from export congestion. February 2011 was the first month that virtual trading was introduced in CAISO. ETRACOM began engaging in virtual trading at nine locations, but not New Melones.⁷⁶

43. In March 2011, ETRACOM reduced its net on-peak CRR position sunk at New Melones to about 1 MW.⁷⁷ ETRACOM also engaged in virtual transactions at 19 locations, including New Melones.⁷⁸ Based on our review of the trading data, ETRACOM's cleared virtual transactions at New Melones in March 2011, which were mainly virtual supply trades ranging from 1 MW to 3 MWs at prices ranging from negative \$45 to \$87, were consistent with the trading strategies it had implemented at other locations in terms of size and hours, and were also consistent with ETRACOM's overall strategy in the CAISO market.⁷⁹ For the entire month of March, ETRACOM lost \$2,029 on its virtual transactions at New Melones.⁸⁰

44. In April 2011, ETRACOM expanded its CRR strategy at New Melones to 20 MW in both on-peak and off-peak hours, but reversed the direction of its position.⁸¹ ETRACOM's CRRs in April were sourced at New Melones and sunk within CAISO, thus ETRACOM would profit from import congestion into CAISO. Over the course of

⁷⁵ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETRACOM company data – New Melones Only.xlsx (CRR Tab).

⁷⁶ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETR00001 (DR7).csv.

⁷⁷ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

⁷⁸ ETR00001 (DR7).csv.

⁷⁹ *Id.*; *see also* Tr. 107:17-108:3 (Rosenberg) (describing March 2011 trading strategy); Answer at 14.

⁸⁰ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, Hourly Virtual PNL_March-July2011_NM.xlsx (March Tab); *see* Answer at 14 (“ETRACOM lost about \$2,000 on its virtual trading in March . . .”).

⁸¹ ETRACOM company data – New Melones Only.xlsx (CRR Tab); Answer at 12.

the month, ETRACOM's CRRs generated approximately \$195,000 in profits.⁸² ETRACOM continued its virtual trading that month, expanding to 22 locations, but did not engage in any virtual transactions at New Melones.⁸³

b. Manipulation Period

45. Although OE Staff and Respondents dispute how the data and contemporaneous evidence should be interpreted,⁸⁴ Respondents and OE Staff are largely in agreement about Respondents' actual virtual trading activity during May 2011, the resulting profits and losses from such activity, the size of Respondents' CRR positions sourced at New Melones during May 2011, and the resulting profits and losses from the CRR positions.

46. Following its profits in April 2011 from CRRs sourced at New Melones and sunk at an internal node within CAISO, ETRACOM acquired larger CRR positions in that same direction for May 2011. The positions were larger than prior months and were approximately 35 MW on-peak and 25 MW off-peak.⁸⁵ From May 1-7, only import congestion into CAISO appeared on the New Melones intertie,⁸⁶ which was consistent with ETRACOM's expectations based on the direction of its CRRs. The CRR positions

⁸² OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, Hourly CRR Revenue_March-June2011_NM.xlsx (April 2011 Tab, Column N); Answer at 13 (citing same).

⁸³ ETR00001 (DR7).csv; Answer at 14.

⁸⁴ For example, OE Staff asserts that Respondents' virtual trading during May 2011 can be summarized by four "phases," including a second phase (May 8-13) in which ETRACOM "assess[ed] the situation" and did not place any virtual trades, and a third phase, which OE Staff calls the "test period" for ETRACOM's scheme (May 14-15), in which ETRACOM placed \$0 virtual supply offers in mostly off-peak hours. Staff Report at 15-18. Respondents dispute OE Staff's characterization of the different phases and of ETRACOM's intent in placing the trades. *See, e.g.*, Answer at 57-59 (disputing that May 14 and 15 were a "trial period").

⁸⁵ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

⁸⁶ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Columns D and E).

were overall profitable for the first ten days of May, earning ETRACOM total revenue of \$147,388.⁸⁷

47. From May 8-13, export congestion occurred at New Melones in most off-peak hours.⁸⁸ As a result, ETRACOM lost over \$23,624 on its monthly CRR positions during hours with export congestion on those six days.⁸⁹ The export congestion was discussed in instant message and email communications by ETRACOM employees/contractors, who expressed confusion as to why the export congestion was occurring. On May 10, Mike Davis, a contractor for ETRACOM who was responsible for analytical support,⁹⁰ noted in an instant message that “Melon[e]s did not bind in [i]mport today.”⁹¹ Two days later, Arie Kapulkin, a co-owner and member of ETRACOM who was responsible for developing ETRACOM’s IT infrastructure, expressed confusion, stating in an instant message: “MELONES imports make sense, exports do not.”⁹² The following day, May 13, Davis again noted in an instant message that “melon[e]s reversed in early morning.”⁹³ Later that day, Rosenberg contacted a former colleague at Pacific Gas & Electric Company, requesting more information about why the “curious phenomenon” of export congestion was occurring on the New Melones intertie.⁹⁴ Ultimately, ETRACOM was never able to determine the cause of the export congestion.⁹⁵

⁸⁷ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Rows 2-11).

⁸⁸ Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Columns D and E).

⁸⁹ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 Phase 2 Tab, Column L).

⁹⁰ *See* Tr. at 44:23-45:3 (Rosenberg) (describing Davis’ role).

⁹¹ Instant Message (IM) from Mike Davis (5/10/2011 12:07:22 PM) (ETR01478).

⁹² IMs from Arik Kapulkin (5/12/2011 3:03:02 PM and 3:03:10 PM) (ETR01490).

⁹³ IM from Mike Davis (5/13/2011 11:29:03 AM) (ETR01494).

⁹⁴ Email from Michael Rosenberg to John Chiara (May 13, 2011 2:30 PM) (ETR00020). Respondents acknowledge that ETRACOM expressed “confusion” about the export congestion during this time period. Answer at 58.

⁹⁵ *See* Tr. 120:2-121:13 (Rosenberg).

48. From May 14-15, ETRACOM began a virtual trading strategy developed by Rosenberg.⁹⁶ On May 14, ETRACOM placed \$0 virtual supply offers at the New Melones intertie in hours ending 1-6 and 23-24, which included all but one of the hours (hour-ending 7) in which export congestion had appeared in previous days.⁹⁷ For those hours in which ETRACOM's offers cleared, the offers were identical to the New Melones LMP of \$0, indicating that ETRACOM was the marginal bidder and that its bids set the LMP.⁹⁸ In every hour that ETRACOM placed its virtual supply offers on May 14, there was no resulting export congestion, and ETRACOM's off-peak CRR positions once again generated positive revenue.⁹⁹ However, in hour-ending 7, the only off-peak hour in which ETRACOM did not place virtual supply offers, export congestion appeared and ETRACOM lost money on its CRRs.¹⁰⁰

49. On May 15, ETRACOM continued placing \$0 virtual supply offers in hours-ending 1-6 and 23-24, but also added hour-ending 7.¹⁰¹ ETRACOM's offers cleared in four hours (hours-ending 1, 2, 6, and 7), setting the New Melones LMP at \$0. In addition, ETRACOM's \$0 virtual supply offer was equal to the LMP in hour-ending 3 because it was the next economic bid, even though it did not clear.¹⁰² Once again, there was no resulting export congestion in all of the hours that ETRACOM's \$0 virtual supply

⁹⁶ *Id.* at 102:18-103:9. ETRACOM had not traded virtuals at New Melones since March 2011.

⁹⁷ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, CAISO_bid_data_May2011_NewMelones.xlsx (Bid data Tab).

⁹⁸ CAISO_bid_data_May2011_NewMelones.xlsx (Bid data Tab) (compare Columns I and L in hours when ETRACOM cleared (Column J)).

⁹⁹ Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Column E); Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 Phase 3 Tab, Column J).

¹⁰⁰ Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Column E); Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 Phase 3 Tab, Column J, Row 8).

¹⁰¹ CAISO_bid_data_May2011_NewMelones.xlsx.

¹⁰² *Id.* (Bid Data Tab) (compare I and L in hours when ETRACOM cleared (Column J)).

offers cleared, and ETRACOM's CRR positions generated positive revenue.¹⁰³ From May 14-15, ETRACOM suffered a net loss of \$52 on its virtual trades at New Melones¹⁰⁴ and earned \$28,059 on its CRRs.¹⁰⁵

50. ETRACOM expanded its virtual supply trading at New Melones to nearly every hour from May 16-31. During this period, ETRACOM offered more MWs of virtual supply at lower offer prices than it did May 14-15, often near the offer floor of negative \$30.¹⁰⁶ All told, ETRACOM lost a total of \$42,481 on their virtual trading at New Melones in May,¹⁰⁷ with their virtual transactions losing money in 379 out of 393 (96%) of the hours in which they cleared at New Melones that month.¹⁰⁸

51. During this time period, ETRACOM's employees took note of the consistent virtual trading losses at New Melones through internal instant messages. On May 16, ETRACOM contractor Mike Davis noted, "We lost \$800 on Melon[e]s but made back \$200 on some evening trades."¹⁰⁹ On May 20, Davis once again reported on the losses at New Melones, expressing more concern to Rosenberg: "Yesterday Melon[e]s cost us about \$2K – continue with it?"¹¹⁰ Despite these losses, ETRACOM continued trading its

¹⁰³ Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Column E); Hourly CRR Revenue_March-June 2011_NM.xlsx (May 2011 PHASE 3 Tab, Column J).

¹⁰⁴ Hourly Virtual PNL_March-July 2011_NM.xlsx (May 2011 Tab, Column Y, Rows 2 and 3).

¹⁰⁵ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 PHASE 3 Tab, Column N).

¹⁰⁶ CAISO_bid_data_May2011_NewMelones.xlsx; *see Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1021 (2006) (directing CAISO to clarify that bids below negative \$30/MWh are subject to cost verification); *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313, at PP 328, 334-335 (2007) (accepting CAISO revised tariff provision regarding negative \$30/MWh offer floor).

¹⁰⁷ Hourly Virtual PNL_March-July 2011_NM.xlsx (May 2011 Tab, Column Y, Row 20).

¹⁰⁸ *Id.* (May 2011 Tab, Columns X-Z, Row 24).

¹⁰⁹ IM from Mike Davis (5/16/2011 9:47:36 PM) (ETR01506-08).

¹¹⁰ IM from Mike Davis (5/20/2011 7:33:20 AM) (ETR01509-11).

virtual supply strategy at New Melones until May 31, when its monthly CRR positions expired.

52. While ETRACOM was losing money on its virtual supply transactions during the second half of May, it more than doubled the profits on its New Melones CRR positions. ETRACOM averaged hourly revenues of about \$1,198 between May 14 and 31 in the hours it was placing virtual supply offers.¹¹¹ In comparison, from May 1-13, ETRACOM's average hourly revenue on its New Melones CRR positions was \$554.¹¹² In May, ETRACOM earned over \$690,122 in total revenue from its New Melones CRR positions, earning almost 75% of that total (\$517,423) during May 14-31,¹¹³ when it was implementing its virtual trading strategy.

53. Based on our review of the data, we find that when ETRACOM engaged in its virtual trading at New Melones during the second half of May, congestion disappeared in those hours at New Melones, and ETRACOM's CRR positions sourced at New Melones returned to profitability.¹¹⁴

54. Based on our review of the trade data, we also find that ETRACOM's virtual trading at New Melones during May 2011 differed from its trading at all 21 other locations where it was also trading virtuals. At the other locations, ETRACOM cleared virtual bids/offers starting on May 1, but New Melones was the only location where ETRACOM began trading mid-month and then encompassed all hours for an extended period.¹¹⁵ New Melones was also the only location where ETRACOM submitted

¹¹¹ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Rows 36-37). Hourly revenue represents the difference between the congestion component at the sink minus the congestion component at the source for each hour. CAISO Tariff § 36.2.1; CRR BPM, Section 1.3 (version 18, Nov. 1, 2014).

¹¹² Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Row 36).

¹¹³ *Id.* (May 2011_all days Tab, Column P).

¹¹⁴ See CAISO_bid_data_May2011_NewMelones.xlsx (Bid Data Tab); Shadow_Prices_May_2011_NM.xlsx (Column E); Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P).

¹¹⁵ See OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, Etracom_May_2011_Virtuals-ALL LOCATIONS.pdf; Etracom_May_2011_Virtuals – all locations – graph data.xlsx.

continuous virtual bids/offers for 24 hours a day.¹¹⁶ At the other locations, ETRACOM cleared virtual supply or demand on intermittent days but in similar hours.¹¹⁷

c. Post-Manipulation Period

55. For June 2011, ETRACOM held considerably smaller CRR positions sourced at New Melones than it had in May.¹¹⁸ ETRACOM attempted to expand its CRR positions through bidding and attempted bilateral transactions, but was unsuccessful due to a more competitive market and higher prices.¹¹⁹ During June, ETRACOM not only reduced significantly its virtual trading activity at New Melones, but changed its patterns. ETRACOM cleared no virtual supply offers that month, and only cleared virtual *demand* bids in seven individual hours, all of which were on June 7, for a total loss of about \$54.¹²⁰

3. Determination of Violations

a. Fraudulent Device, Scheme or Artifice or Course of Business that Operated as a Fraud

56. Fraud is the first element necessary to establish a violation of the Commission's Anti-Manipulation Rule.¹²¹ Fraud is a question of fact that must be determined based on the particular circumstances of each case.¹²² The Commission has explained that, under the Anti-Manipulation Rule, fraud includes, but is not limited to, "any action, transaction,

¹¹⁶ *See id.*

¹¹⁷ *See id.*

¹¹⁸ ETRACOM company data – New Melones Only.xlsx (CRR Tab). ETRACOM's CRR positions sourced at New Melones in June were 7.24 MW on-peak and 7.79 MW off-peak.

¹¹⁹ Tr. 134:1-135:23 (Rosenberg); *see* Answer at 13 (explaining that ETRACOM cleared fewer CRR volumes for June 2011 and was unsuccessful in purchasing volumes bilaterally).

¹²⁰ Hourly Virtual PNL_March-July2011_NM.xlsx (June 2011 Tab).

¹²¹ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 49.

¹²² *Id.* P 50.

or conspiracy for the purpose of impairing, obstructing, or defeating a well-functioning market.”¹²³ Section 222 of the FPA states:

It shall be unlawful for any entity . . . directly or indirectly, to use or employ, in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission, any manipulative or deceptive device or contrivance . . . in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of electric ratepayers.¹²⁴

57. In light of the broad language of section 222 of the FPA, our use of the term “well-functioning market” is not limited just to consideration of price or economically efficient outcomes in a market.¹²⁵ Instead, we view the term to also broadly include consideration of “such rules and regulations as the Commission may prescribe as necessary or appropriate,”¹²⁶ which necessarily includes the rates, terms, and conditions of service in a market. OE Staff alleges that, from May 14, 2011 through May 31, 2011, Respondents engaged in a fraudulent device, scheme or artifice in violation of FPA section 222 and the Commission’s Anti-Manipulation Rule.¹²⁷ As discussed below, based on the totality of evidence, we find that Respondents’ virtual trading during the Manipulation Period constituted a device, scheme, or artifice to defraud the CAISO market and market participants. We find OE Staff’s arguments are persuasive. The evidence demonstrates that ETRACOM submitted continuous and uneconomic virtual supply offers at the New Melones intertie with the intent to artificially lower power prices to economically benefit ETRACOM’s CRR positions, and we find those actions to constitute fraud. In addition, we have considered Respondents’ arguments and defenses and find them unpersuasive.

¹²³ *Id.*

¹²⁴ 16 U.S.C. § 824v (2012); *see also id.* §§ 824d, 824e.

¹²⁵ *See City Power*, 152 FERC ¶ 61,012 at P 59; *Chen*, 151 FERC ¶ 61,179 at P 49.

¹²⁶ 16 U.S.C. § 824v(a) (2012).

¹²⁷ *See, e.g.*, Staff Report at 15-23 (detailing OE Staff’s finding regarding ETRACOM’s manipulative scheme).

i. Respondents' Answer

58. Respondents claim that their virtual supply transactions were not fraudulent. Respondents assert that CAISO's flawed market design and software pricing and modeling errors led to an uncompetitive and dysfunctional market at New Melones that sent incorrect price signals and caused unforeseeable outcomes. Respondents claim that their trades during the relevant period were rational responses to those flaws at New Melones, which Respondents assert was not a "well-functioning market."¹²⁸

59. Respondents explain that in May 2011, market participants, including ETRACOM, were unaware that New Melones was a fully encumbered intertie, meaning that only WAPA could incur and pay for congestion. Due to the encumbrance, Respondents state, any virtual trade submitted, regardless of size, could set the LMP and cause congestion, even when transmission capacity was not constrained and when no physical power flowed.¹²⁹ According to Respondents, despite the undisclosed encumbrance, CAISO permitted market participants to purchase CRRs. Respondents assert that in doing so, CAISO essentially declared the presence of "phantom congestion," which causes congestion to occur in the market model when the actual physical flows are below the limit in the market model.¹³⁰ Respondents assert that the phantom congestion caused a CRR revenue deficiency, which ultimately led CAISO to discontinue the CRR market at New Melones in July 2011, and the virtual bidding market in August 2011.¹³¹ Respondents aver that had the market operated properly, ETRACOM's small offers would not have set the price or created congestion, and therefore would not have impacted its CRRs.¹³²

60. Respondents also explain that, unbeknownst to them and other market participants, there was a "software pricing error" or "modeling error" at New Melones. This error caused the intertie price to be set incorrectly at \$0, rather than at the bid price, if the lowest-price virtual supply offer was positive and only virtual supply offers were present.¹³³ Respondents claim that this error caused market participants such as

¹²⁸ Answer at 2, 30-31.

¹²⁹ *Id.* at 1.

¹³⁰ Answer at 8 & n.38.

¹³¹ *Id.* at 1-2.

¹³² *Id.* at 10.

¹³³ *Id.*

ETRACOM to submit virtual supply offers at \$0 or negative prices to maximize the chances of clearing the market.

61. Respondents conclude that because ETRACOM was unaware of the market design flaw and software errors at New Melones in May 2011, OE Staff's allegations are little more than "fraud by hindsight." Specifically, Respondents claim that absent knowledge of such errors, it is implausible that ETRACOM could have conceived that its 1-5 MW virtual supply offers could set the price, reverse export congestion to become import congestion, and impact its CRRs, given the characteristics at the intertie.¹³⁴ Respondents assert that doing so would require a net "swing" of near 400 MW.¹³⁵ Respondents also assert that OE Staff is incorrect to claim that the actual size of the constraint limit is irrelevant because there is a significant expectation difference for reversing flow on a transmission line depending on its capacity limit.¹³⁶ According to Respondents, an entity does not engage in manipulation when it could not have reasonably known that its actions were causing the alleged market harm.¹³⁷ Respondents aver that the Commission should analyze Respondents' trading activity from a "forward-looking chronological perspective," in which ETRACOM believed that the New Melones intertie was well-functioning and competitive.¹³⁸

62. Respondents also claim that even if the evidence shows that ETRACOM generally knew that its virtual supply offers were marginal in some hours, this does not show that ETRACOM knew or reasonably could have known that its 1 MW virtual offers had an impact on the congestion at New Melones.¹³⁹ According to Respondents, none of the IMs cited by OE Staff show that ETRACOM knew of the impact of its virtual trading strategy at New Melones. Instead, Respondents argue that the IMs instead show that ETRACOM considered its hydro strategy at New Melones before there was export congestion and that ETRACOM was focused on its virtual trading losses at New

¹³⁴ *Id.* at 45-48.

¹³⁵ *Id.* at 46.

¹³⁶ *Id.*

¹³⁷ Answer at 45 (citing *N.Y. Indep. Sys. Operator, Inc.*, 128 FERC ¶ 61,049 (2009), *order granting clarification*, 128 FERC ¶ 61,239 (2009)).

¹³⁸ Answer at 48.

¹³⁹ *Id.* at 49.

Melones, seriously considering stopping the strategy at times.¹⁴⁰ Respondents also argue that ETRACOM's CRR revenues in the second half of May were not extraordinary, and thus OE Staff's allegations that ETRACOM must have seen the impact of its virtual trading on its CRR positions are unsupported.¹⁴¹

63. Respondents assert that their CRR and virtual trading strategies in May 2011 were rooted in their legitimately held view of market fundamentals and technical indicators, which led them to expect rare hydro conditions in that month that would make their virtual supply offers profitable. Respondents explain that, in early 2011, multiple authorities forecasted record hydro runoff in the Pacific Northwest and Sierra Nevada Mountains during the spring months, which was fueled by record snow accumulation during the winter.¹⁴² As May 2011 approached, Respondents observed continued day-ahead congestion at the New Melones intertie, which appeared to intensify during the first two weeks of May. Respondents claim they viewed the congestion as a technical indicator, consistent with the prevailing hydro forecasts, that the market anticipated imminent and significant congestion in the HASP at the New Melones intertie.¹⁴³

64. As a result, Respondents assert that all ETRACOM knew each day when submitting its virtual supply bids was that: (1) the imminent congestion event could cause HASP prices to move significantly downward; (2) virtual supply positions (including \$0 and negatively priced virtual supply positions) would likely be highly profitable if such price movements occurred; and (3) clearing virtual supply at the intertie was a necessary condition to profit from this scenario.¹⁴⁴ Respondents acknowledge that the type of congestion that would benefit this strategy did not materialize until July 2011, instead of in May as ETRACOM had expected.¹⁴⁵ But according to Respondents, at worst, ETRACOM mistimed a legitimate strategy. Respondents claim that market data

¹⁴⁰ *Id.* at 49-50.

¹⁴¹ *Id.* at 50-51.

¹⁴² *Id.* at 34-35.

¹⁴³ Answer at 35.

¹⁴⁴ *Id.* at 38.

¹⁴⁵ *Id.* at 35.

demonstrates their strategy would have been profitable a short time later in the 2011 hydro season, as well as nearly all of the time in the two years prior to 2011.¹⁴⁶

65. According to Respondents, although many of ETRACOM's virtual supply offers lost money in May 2011, its trading strategy was economic when assessed on a day-to-day basis and considering its views of market conditions at the time it placed the bids.¹⁴⁷ Respondents assert that ETRACOM, rationally, did not view as conclusive the prior days' losses and instead continued to trade at the intertie because it believed it stood to profit when the expected hydro event occurred. Respondents cite IMs such as Rosenberg's May 20, 2011 IM stating "not sure, I am thinking we should stop putting positions on Melon until the auction end," as contemporaneous evidence that ETRACOM considered the profitability of the strategy and that Rosenberg was willing to consider stopping the strategy.¹⁴⁸

66. Respondents claim that trade data also confirms the economic and rational nature of ETRACOM's virtual trading at New Melones. For example, other market participants set the LMP at New Melones with negatively priced virtual demand bids in 43.5% of the hours between May 16 and May 31, which Respondents claim would have confirmed its hydroelectric strategy and indicated that the intertie was competitive.¹⁴⁹

67. Respondents describe multiple ETRACOM communications that, they assert, demonstrate that ETRACOM based its virtual trading activity at the New Melones intertie in May 2011 on its view of market fundamentals and conditions.¹⁵⁰ Respondents also point to several documents in which ETRACOM discussed and showed concern for its virtual losses as proof that it was guided by a stand-alone, profit-seeking motive.¹⁵¹ Respondents assert that the documents cited by OE Staff at most show that ETRACOM

¹⁴⁶ *Id.* at 35-37.

¹⁴⁷ *Id.* at 38.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 39.

¹⁵⁰ *Id.* at 40-41.

¹⁵¹ *Id.* at 41-42.

engaged in sound trading and risk management practices by periodically monitoring the status of its positions and related market conditions.¹⁵²

68. According to Respondents, ETRACOM's June 2011 trading activity confirms the legitimate nature of its May 2011 trading activity. ETRACOM still expected day-ahead import congestion at New Melones, although ETRACOM secured fewer volumes of CRR positions for June, due to a more competitive CRR market at New Melones that month. After the June CRR auction was complete, Respondents assert that they finally had an opportunity to examine their virtual trading strategy at New Melones and, in view of their virtual trading losses in May and the non-occurrence of the expected hydro event, discontinued the strategy.¹⁵³ ETRACOM explains that it pursued a different virtual trading strategy in June, in which it bid virtual *demand*. Respondents claim that this shift confirms that ETRACOM did not believe its virtual bids affected its CRR position, because virtual demand would have hurt its CRR positions. Thus, Respondents aver that the June demand bids show that ETRACOM had no knowledge that its previous offers set the price, caused congestion, and therefore impacted its CRR positions in May.¹⁵⁴

69. Respondents assert that OE Staff mischaracterizes, misstates, and mis-cites the evidentiary record throughout the Staff Report, leading to unreasonable outcomes in light of the evidence presented. Respondents attach an appendix to their Answer summarizing what they consider to be OE Staff's most significant errors.¹⁵⁵

70. Respondents argue that the CAISO Market Monitor, in its referral and December 2013 memorandum, and the Staff Report rely on contradictory logic and have established an "impossible-to-defend manipulation standard riddled with inconsistencies."¹⁵⁶ For example, Respondents aver that OE Staff and the DMM claim that a legitimate hydro strategy would have continued into June, yet inconsistently criticize ETRACOM for incurring losses for too long and changing its strategy in June.¹⁵⁷ According to Respondents, a presumption of transactional legitimacy must be afforded to

¹⁵² *Id.* at 43.

¹⁵³ *Id.*

¹⁵⁴ *Id.* at 43-44.

¹⁵⁵ Answer at 77, app. A.

¹⁵⁶ *Id.* at 77.

¹⁵⁷ *Id.* at 77-78.

ETRACOM's trading strategy, and OE Staff must demonstrate that ETRACOM did not intend for its virtual bids to be profitable on a stand-alone basis and that it intentionally used those bids to benefit its financially leveraged CRR positions—which OE Staff failed to do.¹⁵⁸

71. Respondents offer several “additional reasons” for terminating this proceeding. Respondents assert that CAISO violated its own tariff and the filed rate doctrine. Specifically, Respondents argue that CAISO violated section 27.1.1 and Appendix C of its tariff, which stipulated how it should have calculated LMPs for New Melones.¹⁵⁹ According to Respondents, such violations arose because CAISO erroneously considered New Melones to be part of a constrained path and because of CAISO's software errors. Respondents also claim that CAISO likely violated formula rates in its tariff for the settlement of virtual awards and CRR markets.¹⁶⁰

72. According to Respondents, an enforcement proceeding under these circumstances is unprecedented because: (1) OE Staff relies solely on trading and market data to make its case without any contemporaneous “speaking documents;” (2) unlike prior cases involving RTO/ISO market design flaws and errors, the market dysfunction here was unknown and unknowable to ETRACOM during the time of the alleged manipulation; (3) ETRACOM's trading at New Melones was consistent with its prior activity in the CAISO markets and contemporaneous activity at other locations at CAISO; and (4) prior enforcement cross-market and electric cases included allegations that the traders were aware of market design flaws and took affirmative steps to exploit them, whereas here, ETRACOM had no knowledge of the market design flaws at the time of the alleged manipulation.¹⁶¹

73. Respondents assert that in addition to proving fraud and intent, OE Staff must also prove causation—i.e., that ETRACOM's activity caused the alleged harm.¹⁶²

¹⁵⁸ *Id.* at 79.

¹⁵⁹ *Id.* at 84-85.

¹⁶⁰ *Id.* at 85.

¹⁶¹ Answer at 86 (citing *Constellation Energy Commodities Group, Inc.*, 138 FERC ¶ 61,168 (2012) (*Constellation*); *MISO Virtual & FTR Trading*, 146 FERC ¶ 61,072 (2014); *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056 (2013) (*Deutsche Bank*)).

¹⁶² Answer at 33-34, 69-72.

Respondents explain that their asserted loss causation requirement is rooted in securities law precedent.¹⁶³ According to Respondents, CAISO's market flaws and software errors caused the market harm alleged here because they grossly distorted the market at New Melones, caused flawed LMP calculations and incorrect allocation of CRRs, and resulted in CAISO's violating its own tariff.¹⁶⁴ Respondents assert that ETRACOM's virtual trading behavior was in response to the false signals sent by the flawed market.¹⁶⁵ As a result, they argue, unlike in the *City Power* or *Maxim* matters, OE Staff cannot reasonably argue that ETRACOM's trades at New Melones interfered with a well-functioning market.¹⁶⁶ Respondents argue that Commission precedent requires that when a market participant's trading activity responds to a flawed or poorly considered market design, such behavior is not manipulative and the proper solution is to change the market design.¹⁶⁷

74. Respondents argue that ETRACOM's virtual supply offers at New Melones were incentivized by the export congestion triggered by market pricing errors, by the software pricing error, and by other errors at the intertie that led to seemingly arbitrary and anomalous pricing at New Melones.¹⁶⁸ Thus, it would be unfair and inconsistent with Commission precedent to make ETRACOM the "scapegoat" for the market design flaws and errors. Respondents argue that OE Staff have the burden of showing that such flaws did not cause the harms OE Staff attributes to ETRACOM, and that these flaws and errors did not influence ETRACOM's pricing decisions in support of a legitimate strategy.¹⁶⁹ Respondents assert that OE Staff has failed to meet that burden.

¹⁶³ *Id.* at 33.

¹⁶⁴ *Id.* at 72.

¹⁶⁵ *Id.* at 69-72.

¹⁶⁶ *Id.* at 72 (citing *City Power*, 152 FERC ¶ 61,012 at P 104; *Maxim Power Corp.*, 151 FERC ¶ 61,094, at P 5 (2015)).

¹⁶⁷ *Id.* at 72 (citing *Blumenthal v. ISO New England Inc.*, 135 FERC ¶ 61,117 (2011); *N.Y. Indep. Sys. Operator, Inc.*, 128 FERC ¶ 61,049, *order granting clarification*, 128 FERC ¶ 61,238 (2009)).

¹⁶⁸ Answer at 73-75.

¹⁶⁹ *Id.* at 75.

75. Finally, Respondents claim that OE Staff has made two critical admissions that undermine its case: (1) that ETRACOM did not know that the intertie was unencumbered, and therefore ETRACOM would not have known about the many resulting problems identified; and (2) that the software pricing error could “explain why ETRACOM’s offers were zero or negative,” which justifies a “significant component” of ETRACOM’s trading activity at New Melones, including ETRACOM’s increased losses and the exacerbated congestion caused by the encumbrance flaw.¹⁷⁰

ii. OE Staff Report and Reply

76. OE Staff asserts that in May 2011, after ETRACOM’s New Melones CRR positions became unprofitable due to unexpected export congestion, Rosenberg developed a manipulative scheme in which ETRACOM submitted \$0 or negative virtual supply offers to lower the day-ahead LMP at New Melones. The lower day-ahead LMP created import congestion at New Melones, which increased the profitability of ETRACOM’s CRR positions.¹⁷¹ OE Staff avers that ETRACOM’s virtual trades were unprofitable when considered on a stand-alone basis and timed such that they could only have been intended to benefit its CRR positions.¹⁷²

77. OE Staff argues that the best way to understand ETRACOM’s scheme is to examine the price formation at New Melones before and after ETRACOM began its manipulative virtual trading. OE Staff describes four different “phases” of ETRACOM’s scheme.

78. According to OE Staff, the first and second phases (May 1-7 and May 8-13) demonstrate the effect of import congestion at New Melones prior to ETRACOM’s implementing its manipulative scheme. From May 1-7, other market participants’ virtual supply offers were always less than the cost of energy in CAISO (plus the loss component). Thus, there was a surplus of cheap (virtual) energy offered from New Melones to serve the more expensive CAISO market, which created import congestion.

¹⁷⁰ *Id.* at 76-77.

¹⁷¹ Staff Report at 15. ETRACOM’s CRR positions in May were sourced at New Melones and sunk within CAISO; thus, the lower the price at New Melones relative to the price in CAISO, the greater ETRACOM’s profits on its CRR positions. *Id.* at 3.

¹⁷² Staff Report at 15.

ETRACOM did not place any virtual trades during this phase, but its CRR positions benefited from the import congestion.¹⁷³

79. OE Staff asserts that in the second phase, May 8-13, WAPA began scheduling 1 MW of net physical exports during mostly off-peak hours, which became the binding limit or maximum volume allowed to flow across the constraint at New Melones in the export direction.¹⁷⁴ In most hours during this phase, high-priced uncleared virtual supply bids set the LMP at New Melones and created export congestion in most hours. OE Staff asserts that ETRACOM did not know the cause of the export congestion but knew that its CRR position in off-peak hours had become unprofitable due to the export congestion.¹⁷⁵ OE Staff claims ETRACOM did not place any virtual trades during this phase because it was still assessing the situation.¹⁷⁶ OE Staff avers that Rosenberg developed the CRR strategy and virtual trading scheme in response to the export congestion and losses ETRACOM experienced during the second phase.¹⁷⁷

80. OE Staff argues that the third and fourth phases (May 14-15 and May 16-31) demonstrate that ETRACOM's virtual trading scheme lowered the day-ahead LMP at New Melones. According to OE Staff, May 14-15 served as the test period for the manipulative scheme. ETRACOM placed \$0 virtual supply offers in mostly off-peak hours, which were essentially offers of "free" virtual energy from New Melones into CAISO.¹⁷⁸ ETRACOM's offers frequently set the New Melones LMP at \$0 because ETRACOM was either the marginal virtual supply offeror or the next economic bid. OE Staff asserts that ETRACOM's scheme created import congestion, which benefited ETRACOM's CRR positions.¹⁷⁹

81. OE Staff posits that during the fourth phase, after seeing that it could effectuate a \$0 LMP at New Melones during the third phase, ETRACOM expanded its virtual trading

¹⁷³ *Id.* at 16.

¹⁷⁴ *Id.* at 16-17.

¹⁷⁵ *Id.* at 17.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

¹⁷⁸ *Id.* at 17-18.

¹⁷⁹ *Id.* at 18.

strategy to all hours of the day and also began making virtual supply offers below \$0. In other words, ETRACOM was willing to pay to provide virtual energy. OE Staffs asserts that bid data shows that, during this phase, ETRACOM was willing to sell at least a portion of its MWs between -\$28 and -\$30 (the offer floor) in 94% of the hours in which it placed an offer. According to OE Staff, ETRACOM frequently set the New Melones LMP by being the virtual supply offeror or the next economic bid.¹⁸⁰

82. OE Staff asserts that ETRACOM's negative virtual supply offers drove down the day-ahead LMP at New Melones, which was \$34/MWh lower during the second half of May than it had been during the test period of May 14-15. According to OE Staff, ETRACOM was the only entity offering negative virtual supply at New Melones because price signals did not indicate that negative supply was profitable.¹⁸¹ OE Staff asserts that by the end of May, ETRACOM had driven the LMP at New Melones so low that it attracted an increase in negative virtual demand bids,¹⁸² which at times exceeded the volume of virtual supply offers and therefore set the LMP. According to OE Staff, as a result of both ETRACOM's virtual supply offers and the resulting negative virtual demand bids, the price difference between New Melones and the system energy cost (and loss component) was even wider. OE Staff states that the result was greater import congestion and increased profits to ETRACOM's CRR positions.¹⁸³

83. OE Staff asserts that Rosenberg and ETRACOM tracked their virtual trading strategy at New Melones in May 2011 through a spreadsheet and daily reports, and thus knew that ETRACOM was losing money on its virtual transactions at New Melones.¹⁸⁴ OE Staff asserts that ETRACOM employees discussed their performance at New Melones "almost daily" through instant messages, showing a disproportionate interest in New Melones, which was only one of almost 300 locations where ETRACOM was actively trading virtuals or holding CRR positions in May.¹⁸⁵ OE Staff also asserts that

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at 21.

¹⁸² Virtual demand bids were profitable for the bidders because ETRACOM was willing to pay an entity to "buy" virtual energy.

¹⁸³ Staff Report at 21.

¹⁸⁴ *Id.* at 19.

¹⁸⁵ *Id.* at 19-20.

ETRACOM's losses at New Melones ranged from \$871 and \$5,851 per day and could not be overlooked.¹⁸⁶

84. OE Staff asserts that ETRACOM was also tracking the performance of its CRR positions. OE Staff claims that internal communications indicate that ETRACOM viewed its virtual trading losses as tolerable because their gains on their CRR positions were much greater.¹⁸⁷ OE Staff points to an IM communication from May 20, 2011, in which Davis and Rosenberg acknowledged that New Melones was continuing to bind in all hours in the import direction. According to OE Staff, Rosenberg knew the export congestion at New Melones had been eliminated because of his virtual supply offers and that ETRACOM's CRR positions benefited as a result.¹⁸⁸

85. OE Staff notes that ETRACOM ceased its virtual trading at New Melones on May 31, 2011.¹⁸⁹ According to OE Staff, abandoning this strategy after two weeks is inconsistent with ETRACOM's claim that its trades were designed to capture congestion caused by an anticipated hydro event. OE Staff asserts that the only material difference on June 1 (as compared to May 31) was that ETRACOM had a substantially smaller-sized CRR position at New Melones.¹⁹⁰

86. OE Staff finds ETRACOM's alleged expectation of profit from negative HASP prices due to an imminent hydroelectric event to be unreasonable. OE Staff concludes that given the difficulty in predicting the timing of a hydro event, the uncertain payout, and the fact that a significant hydro event was not likely to occur at all, ETRACOM's claimed motivation behind its trading strategy was implausible.¹⁹¹

87. According to OE Staff, ETRACOM's assertion that there was increasing day-ahead import congestion in early May, indicating an imminent hydro event, is unsupported and contradicted by the data.¹⁹² OE Staff asserts that only after May 16,

¹⁸⁶ *Id.* at 20.

¹⁸⁷ *Id.* at 20-21.

¹⁸⁸ *Id.* at 21.

¹⁸⁹ *Id.* at 22.

¹⁹⁰ Staff Report at 22.

¹⁹¹ *Id.* at 26-32.

¹⁹² *Id.* at 26; Staff Reply at 9-10.

2011, was there a clear trend of increasing import congestion at New Melones—a trend that is attributable to ETRACOM’s own virtual bidding strategy.¹⁹³ OE Staff also contends there is no support, including in the various forecasts and IMs and emails cited by ETRACOM, that a large scale hydro event was poised to begin in mid-May.¹⁹⁴

88. As part of its explanation as to why Respondents’ hydro defense is implausible and unsupported by the evidence, OE Staff explains that Respondents conflate high snow pack and reservoir levels with the imminent occurrence of a historic hydro runoff event.¹⁹⁵ OE Staff asserts that absent the occurrence of an accelerating factor like warm rain, snow pack will melt gradually throughout the spring and summer season. Thus, the NOAA long-term seasonal forecasts that Respondents cite would not form a reasonable basis for ETRACOM or any market participant to speculate in the day-ahead market that HASP prices will drop significantly the following day.¹⁹⁶ According to OE Staff, Respondents offer no credible evidence that they reasonably expected the snow pack to melt at an accelerated rate in mid-May 2011. For example, they fail to specify whether such rain was forecasted to occur in the Sierra Nevada region near the New Melones Reservoir prior to their virtual trading. OE Staff claims that contemporaneous weather forecasts, which show either no precipitation on many days or *more* snow (which would make a runoff event in the immediate future less likely to occur), refute Respondents’ hydro event theory rather than support it.¹⁹⁷

89. OE Staff also counters Respondents’ claims that conditions in July 2011 and in other timeframes between 2011 and 2015 demonstrate that ETRACOM’s virtual trading strategy at New Melones was legitimate albeit mistimed. OE Staff avers that physical conditions at the New Melones Reservoir and prices at the New Melones intertie show that a large scale historical HASP hydro event did not occur in July 2011.¹⁹⁸ OE Staff contends that ETRACOM’s calculations purporting to demonstrate that its virtual trading strategy would have been profitable during the July 8 through July 22, 2011 timeframe to be misleading. Specifically, OE Staff asserts that ETRACOM’s calculations assume a

¹⁹³ Staff Report at 26.

¹⁹⁴ *Id.* at 27-29.

¹⁹⁵ Staff Reply at 7.

¹⁹⁶ *Id.*; Staff Report at 28.

¹⁹⁷ Staff Reply at 6-8.

¹⁹⁸ *Id.* at 8.

clearing price that is far too high because they ignore that ETRACOM's negative supply offers often set the price at the offer floor.¹⁹⁹ Under OE Staff's recalculations, ETRACOM would have lost money had it implemented its strategy during this timeframe. OE Staff found similar flaws with Respondents' calculations showing that ETRACOM's strategy might have been profitable during other periods between 2011 and 2015 at New Melones.²⁰⁰ Finally, OE Staff finds ETRACOM's explanation for why it expected a hydro event to occur at New Melones, as opposed to other comparable locations in CAISO, to be implausible.²⁰¹

90. OE Staff disagrees with Respondents' claim that certain IMs demonstrate that ETRACOM based its virtual trading activity at New Melones on its view of market fundamentals and conditions and lacked manipulative intent. Instead, OE Staff argues that the cited IMs are either unrelated to Respondents' virtual trading, support OE Staff's conclusions regarding the manipulative scheme, are unsupported by the evidence, or are simply inconclusive.²⁰²

91. OE Staff counters Respondents' claims that market design flaws are responsible for ETRACOM's conduct or market harm.²⁰³ OE Staff argues that these arguments have no bearing on what is at issue in this proceeding—whether ETRACOM engaged in intentional manipulative conduct—and ETRACOM does not and cannot link these flaws to a legitimate explanation for its trading.²⁰⁴ OE Staff also argues that CAISO's decision to discontinue offering CRR positions and virtual trading at New Melones occurred after ETRACOM's conduct in May 2011 and is thus irrelevant to ETRACOM's conduct here.²⁰⁵

92. OE Staff also disagrees with Respondents' claims that the software pricing error at New Melones drove its virtual trading because it led ETRACOM to believe it must place

¹⁹⁹ *Id.* at 8-9.

²⁰⁰ *Id.* at 9.

²⁰¹ Staff Report at 31-32.

²⁰² Staff Reply at 17-19.

²⁰³ Staff Report at 32-33; Staff Reply at 20-21.

²⁰⁴ Staff Report at 32.

²⁰⁵ *Id.* at 32-33.

\$0 or negative offers to clear virtual supply at New Melones. OE Staff questions why this error would have influenced ETRACOM during two weeks in May but not during the other five-plus months the error was present. OE Staff explains that the software error does not explain why ETRACOM submitted virtual offers to begin with, nor does it explain why ETRACOM persisted in sustaining money-losing virtual trades.²⁰⁶

93. OE Staff argues that ETRACOM's assertion that OE Staff must prove causation—that the harms would not have occurred but for ETRACOM's trades—is both unfounded and inconsistent with Commission precedent.²⁰⁷ OE Staff quotes Order No. 670 for the proposition that proving loss causation is not required, asserting that the Commission's anti-manipulation authority extends to attempted or unsuccessful manipulation. According to OE Staff, Respondents mistakenly “attempt to foist unique legal requirements for private securities plaintiffs onto the Commission's application of the Anti-Manipulation Rule.”²⁰⁸ OE Staff argues that even if causation were an element of a manipulation claim, obvious causation exists here because ETRACOM's virtual trading artificially depressed congestion and distorted prices at New Melones in May 2011, resulting in overpayments to New Melones CRR source holders.²⁰⁹

94. OE Staff disagrees with Respondents' assertions that OE Staff must first prove that the New Melones intertie was “well-functioning” as a prerequisite to proving a manipulation claim.²¹⁰ OE Staff asserts that Respondents have misread the Commission's definition of “fraud” and the “well-functioning market” language in Order No. 670 as limiting the reach of the Anti-Manipulation Rule to only those Commission jurisdictional markets without flaws.²¹¹ Instead, OE Staff asserts that the “well-functioning market” language refers to any Commission jurisdictional market operating under a tariff that the Commission has found to be just and reasonable.²¹² According to OE Staff, there is no perfect market, and even a well-functioning market can have flaws

²⁰⁶ *Id.* at 33.

²⁰⁷ Staff Reply at 3-5.

²⁰⁸ *Id.* at 4.

²⁰⁹ *Id.* at 4-5.

²¹⁰ *Id.* at 5-6, 21-24.

²¹¹ *Id.* at 5, 23.

²¹² *Id.* at 5.

and be susceptible to manipulation. Otherwise, no claim for manipulation could exist because any market susceptible to manipulation could, by implication, be considered not “well-functioning.”²¹³ OE Staff argues that market participants that manipulate the market can be charged with manipulation, regardless of whether they created or simply exacerbated the situation.²¹⁴ OE Staff argues that, here, Respondents’ activity impaired the functioning of the Commission’s jurisdictional markets.

95. In response to Respondents’ “fraud by hindsight theory,” OE Staff argues that Respondents need not have known of the market flaws to engage in manipulation. OE Staff claims that the evidence demonstrates that Respondents *ex ante* developed, tested, and implemented a virtual supply strategy at New Melones to influence congestion to benefit its CRRs sourced at that location; Respondents’ *post hoc* justifications are inconsistent with the contemporaneous evidence and Rosenberg’s testimony.²¹⁵ According to OE Staff, Respondents’ cross-product manipulation is fully in line with the type of activity that the Commission and numerous federal courts have found constitutes manipulation.

iii. Commission Determination

96. We find, based on the totality of evidence presented, that Respondents engaged in a fraudulent device, scheme, or artifice to defraud the CAISO market and market participants. As discussed in greater detail below, we find that: (1) Respondents’ arguments are not persuasive; and (2) there is sufficient evidence that Respondents’ actions violated section 222 of the FPA and the Anti-Manipulation Rule. The preponderance of the evidence demonstrates that Respondents engaged in virtual transactions at the New Melones intertie during the Manipulation Period not for legitimate reasons, but rather to lower the New Melones day-ahead LMP to the benefit of ETRACOM’s CRR positions.

97. The Commission has consistently found to be manipulative “cross-market” schemes in which market participants improperly trade in one market with the intent to

²¹³ *Id.* at 5-6, 22-24.

²¹⁴ *Id.* at 24-25 (citing *Kohen v. Pac. Invest. Mgmt. Co., LLC*, 244 F.R.D. 469, 484 (N.D. Ill. 2007)).

²¹⁵ Staff Reply at 29. OE Staff points out that even Respondents’ witness Hogan begins by stating that he does not opine on the intentions or state the rationale of Rosenberg’s trading during the relevant period. *Id.* (citing Hogan Aff. ¶ 3).

move prices in a particular direction to the benefit of positions in a related market.²¹⁶ In doing so, the Commission has relied on a number of indicia of manipulation, such as: a consistent pattern of trading in a direction that would tend to move the price to the benefit of a related financial position; trading that is uneconomic in nature; changes in trading behavior during periods when manipulation is alleged as compared to trading during other time periods when manipulation is not alleged; the failure of a company to adequately explain the relevant positions and trading behavior; and communications among traders substantiating the scheme.²¹⁷ We find that these indicia are present here and demonstrate that Respondents engaged in cross-market manipulation.

98. During the Manipulation Period, ETRACOM submitted \$0 or negative virtual supply offers that lowered the day-ahead LMP at New Melones and created import congestion into CAISO to the benefit of ETRACOM's CRR positions. As described in further detail below, among the evidence we have considered in reaching this conclusion is: (i) the timing and pattern of Respondents' virtual transactions at New Melones—which was in a direction that would tend to move the New Melones price downward to the benefit of ETRACOM's CRR positions during May 2011—as compared to their virtual trading patterns before and after the Manipulation Period; (ii) Respondents' consistent losses on its virtual supply transactions at New Melones during the Manipulation Period; (iii) Respondents' communications, testimony, and evidence substantiating the existence of a scheme to defraud; and (iv) Respondents' failure to offer credible and relevant explanations for their virtual trading during the Manipulation Period.

(a) Trading Pattern

99. We find that Respondents' trading patterns before, during, and after the Manipulation Period present a clear picture of a manipulative trading scheme. Specifically, as discussed below, Respondents' virtual trading at New Melones before and after May 2011 was markedly different from their virtual trading during the

²¹⁶ See, e.g., *MISO Cinergy Hub Transactions*, 149 FERC ¶ 61,278, at P 18 (2014); *Direct Energy Servs., LLC*, 148 FERC ¶ 61,114, at P 15 (2014); *MISO Virtual & FTR Trading*, 146 FERC ¶ 61,072, at P 13 (2014); *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056, at P 18 (2013); *Constellation Energy Commodities Group, Inc.*, 138 FERC ¶ 61,168 (2012); see also *Barclays Bank PLC*, 144 FERC ¶ 61,041, at P 16 (2013) (*Barclays*); *Brian Hunter*, 135 FERC ¶ 61,054, order denying reh'g, 137 FERC ¶ 61,146 (2011), rev'd sub nom. *Hunter v. FERC*, 711 F.3d 155 (D.C. Cir. 2013); *Energy Transfer Partners L.P.*, 128 FERC ¶ 61,269 (2009).

²¹⁷ See *Barclays*, 144 FERC ¶ 61,041 at PP 7, 32.

Manipulation Period. The timing and patterns of ETRACOM's trading demonstrate that during the Manipulation Period, ETRACOM moved away from trading virtuals and CRRs at New Melones independently and instead placed virtual supply offers at New Melones that tended to move day-ahead LMP prices downward and halt the unexpected export congestion that materialized at New Melones, which returned its CRRs to profitability.

100. ETRACOM's virtual trading at New Melones prior to the Manipulation Period was consistent with a virtual trading strategy that was independent from its CRR strategy. In February 2011, ETRACOM held a small CRR position sinking at New Melones, but did not engage in any virtual trading there.²¹⁸ In March 2011, ETRACOM reduced its net on-peak CRR position to about 1 MW, and engaged in virtual trading there, but that trading appeared consistent with ETRACOM's other virtual trading strategies in other locations and lost about \$2000 over the course of the whole month.²¹⁹ In April 2011, ETRACOM expanded its CRR positions, and reversed their direction so that they were sourced at New Melones, and thus would benefit from import congestion into CAISO.²²⁰ However, ETRACOM did not engage in any virtual transactions at New Melones that

²¹⁸ ETRACOM company data – New Melones Only.xlsx (CRR Tab); ETR00001 (DR 7).csv.

²¹⁹ ETRACOM company data – New Melones Only.xlsx (CRR Tab); ETR00001 (DR 7).csv; Hourly Virtual PNL_March-July2011_NM.xlsx (March Tab); *see app.* The Appendix was developed by Commission decisional staff using data provided in the evidentiary record at ETR00001 (DR 7).csv. The Appendix compares ETRACOM's net virtual positions in MWhs (as indicated by the blue lines) to its net CRR positions in MWhs (as indicated by the gray lines) at all 165 locations where ETRACOM had either virtual or CRR positions between February and July 2011, including at New Melones, which appears on page 67. In March, ETRACOM almost always placed virtual transactions in the opposite direction of its CRRs. However, there are three locations that demonstrate a different pattern. At "CAPTJACK_5_N512" (page 13) and "MALIN_5_N101" (page 62), ETRACOM held CRR positions both sourcing and sinking at those nodes. ETRACOM traded virtual supply at these nodes in hours when it had a CRR position that would benefit from the virtual transactions *and* in hours when it had a CRR position that would be harmed by the virtual transactions. At "SUMMIT_ASR-APND" (page 148), ETRACOM held a very small CRR position and traded virtual supply at volumes larger than its CRR position.

²²⁰ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

month.²²¹ For the first seven days of May 2011, a month in which ETRACOM had expanded its CRR positions sourced at New Melones from the previous month, ETRACOM appeared to follow the same pattern, profiting from import congestion on those CRR positions without trading any virtuals at the same location.²²²

101. ETRACOM's pattern pivoted on May 14, 2011. After losing money on its off-peak CRR positions for five days in a row due to unexpected export congestion, ETRACOM began placing \$0 virtual supply offers in certain, limited hours.²²³ For two days, ETRACOM's cleared virtual trades lost money (in sum), but its off-peak CRR positions became consistently profitable.²²⁴ ETRACOM ultimately expanded its virtual trading to all hours for all remaining days in the month—offering larger MWs of virtual supply at even lower offer prices.²²⁵ For the remainder of the month, ETRACOM continued accumulating losses on its virtual trading while its CRR positions became dramatically profitable.²²⁶

102. As soon as the month was over and ETRACOM no longer held such large CRR positions at New Melones, ETRACOM abruptly changed its virtual trading activity at New Melones. ETRACOM cleared no virtual supply offers in the entire month of June 2011, and instead cleared virtual *demand* bids in only seven hours.²²⁷

²²¹ ETR00001 (DR 7).csv.

²²² Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Rows 2-8); CAISO_bid_data_May2011_New Melones.xlsx (Bid data Tab).

²²³ CAISO_bid_data_May2011_New Melones.xlsx (Bid data Tab).

²²⁴ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab); Hourly CRR Revenue_March-June 2011_NM.xlsx (May 2011 PHASE 3 Tab).

²²⁵ CAISO_bid_data_May2011_New Melones.xlsx (Bid data Tab).

²²⁶ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab); Hourly CRR Revenue_March-June 2011_NM.xlsx (May 2011_all days Tab).

²²⁷ Hourly Virtual PNL_March-July2011_NM.xlsx (June 2011 Tab).

(b) **Unprofitability of Respondents' virtual supply transactions**

103. We find that Respondents' virtual supply transactions during the Manipulation Period were uneconomic. Specifically, we find that Respondents' \$0 and negatively-priced virtual supply offers at New Melones were consistently unprofitable when considered on a stand-alone basis and resulted in ETRACOM frequently setting and depressing the New Melones day-ahead LMP by being either the marginal virtual supply offer or the next economic bid. The depressed LMP prices caused Respondents to lose money on their virtual supply offers, which are only profitable when the day-ahead LMP is higher than the HASP LMP. These unprofitable virtual supply offers, however, created import congestion and thereby made Respondents' CRR positions sourced at New Melones profitable. We agree with CAISO's DMM that these consistently unprofitable virtual offers "could not have been expected to be profitable given historical market prices."²²⁸ They were, however, highly profitable when their effects on ETRACOM's CRR positions were considered.

104. The Commission has previously noted that while "'profitability is not determinative on the question of manipulation and does not inoculate trading from any potential manipulation claim,' it 'is an indicium to be considered among the overall facts that the Commission examines when considering a potential violation of its Anti-Manipulation Rule, but standing alone it is neither necessary nor dispositive.'"²²⁹ Here, we find Respondents' virtual trading strategy at New Melones was uneconomic, which supports our conclusion that Respondents' virtual trading was a scheme to defraud.

²²⁸ DMM Referral at 1.

²²⁹ *Chen*, 151 FERC ¶ 61,179 at P 77 (quoting, respectively, *Deutsche Bank*, 142 FERC ¶ 61,056 at P 20 and *Barclays*, 144 FERC ¶ 61,041 at P 43); *see also City Power*, 152 FERC ¶ 61,012 at P 101 (holding in a matter involving gaming of market rules that respondents' trading "was uneconomic, which supports the conclusion that a course of business and a scheme to defraud existed."); *Competitive Energy Servs., LLC*, 144 FERC ¶ 61,163, at P 43 (2013) (*CES*), *Richard Silkman*, 144 FERC ¶ 61,164, at P 43 (2013) (*Silkman*), *Lincoln Paper & Tissue, LLC*, 144 FERC ¶ 61,162, at P 30 (2013) (respondents' decision to curtail power from a generator over a five-day period "was uneconomic given [its] ability and established practice of generating electricity [from that generator] at lower cost"). The Commission has also approved a number of settlements based in part upon a finding that the respondent engaged in uneconomic trading. *See, e.g., MISO Cinergy Hub Transactions*, 149 FERC ¶ 61,278 (2014); *Direct Energy Servs., LLC*, 148 FERC ¶ 61,114 (2014); *MISO Virtual & FTR Trading*, 146 FERC ¶ 61,072 (2014); *Constellation*, 138 FERC ¶ 61,168 (2012).

105. Respondents do not dispute that their virtual trading at New Melones was unprofitable, but argue that ETRACOM's trading strategy nevertheless was economic considering its views of market conditions at the time it placed the bids and when its trading is assessed on a day-to-day basis. As we discuss in further detail below, we find no credible evidence that Respondents' virtual trading during the Manipulation Period was based on its expectation of an imminent large-scale hydro event. We also find that CAISO market design flaws and software errors do not explain Respondents' unprofitable virtual trading during the Manipulation Period. Rather, we find that the only credible reason that ETRACOM endured average daily losses of about \$2,360 per day on its virtual trading during the Manipulation Period²³⁰ is that it expected to—and actually did—profit from the resulting gains to its CRR position.

(c) **Communications, testimony, and other evidence demonstrate the existence of a scheme to defraud**

106. We find that Respondents' communications, testimony, and other evidence support our conclusion that Respondents engaged in virtual trading during the Manipulation Period not to profit from the transactions, but rather to lower the day-ahead LMP at New Melones to increase the profitability of ETRACOM's CRR positions.

107. As discussed above, in this case we find that the trading patterns and trade data are particularly probative of a classic cross-product manipulative scheme. Respondents' contemporaneous communications and other evidence further substantiate the manipulative scheme that is so clearly illustrated by the trading patterns and data. The evidence supports findings that Respondents closely tracked their performance at New Melones; were aware of their virtual trading losses at New Melones; and were aware that their virtual trades impacted prices.

108. The evidence demonstrates that both Rosenberg and ETRACOM employees paid close attention to their new trading strategy at New Melones during the second half of May 2011. Respondents' communications demonstrate that throughout the Manipulation Period, ETRACOM employees exchanged frequent IMs about ETRACOM's performance at New Melones.²³¹ These frequent communications indicate ETRACOM's

²³⁰ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab).

²³¹ See OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at ETRACOM Cited Instant Messages and E-mails, ETR01457-60; ETR01478-82; ETR01483-86; ETR01487-92; ETR01493-95; ETR01496-98; ETR01499-01505; ETR01506-08; ETR01509-11; ETR01512; ETR01515-19; ETR01525-31; ETR01539-44

continuing and disproportionate focus on the New Melones trading location, which was just one of almost 300 other locations at which ETRACOM was actively trading virtuals or holding CRR positions that month.

109. The evidence also demonstrates that ETRACOM maintained visibility on how its virtual trades performed at New Melones. Throughout May 2011, Rosenberg tracked the profitability of ETRACOM's virtual trading strategy through daily reports.²³² Thus, on a daily basis, ETRACOM reports revealed the mounting losses on ETRACOM's virtual trading strategy. Nevertheless, ETRACOM continued to offer virtual supply in the manner that it did for the remainder of the month without changing its strategy.

110. On May 15, the second day of the Manipulation Period, Rosenberg reported in an IM to his colleagues that "we[']re in good shape in CA" and directed his colleagues to review ETRACOM's "new strategies on vt in ca."²³³ Thus, Rosenberg is specifically referring to ETRACOM's new virtual trading strategy in CAISO on this date, consistent with our finding of a manipulative scheme.

111. And on May 20, Davis expressed concerns about the losses on ETRACOM's virtual supply positions, stating in an IM: "yesterday Melon[e]s cost us about \$2K." Rosenberg did nothing to mitigate the losses on ETRACOM's virtual supply positions.²³⁴ We find that these IMs, which demonstrate that ETRACOM was aware of and monitoring ETRACOM's virtual trading losses, are consistent with our finding of a manipulative scheme and our conclusion that ETRACOM was ultimately indifferent to its virtual trading losses at New Melones, and instead prioritized the profitability of its CRR positions, which ETRACOM was also tracking.²³⁵

(various May 2011 IMs from ETRACOM Employees/Contractors including communications on May 1, May 10-16, May 20-21, May 23, May 25, and May 30).

²³² Tr. 88:15-17; 184:4-185:13 (Rosenberg).

²³³ IM from Michael Rosenberg (5/15/2011 11:07:48 AM) (ETR01499-50). It appears that, in this particular IM, "vt" refers to virtual trading, and "ca" refers to CAISO.

²³⁴ IM from Mike Davis (5/20/2011 7:33:20 AM) (ETR01509-11).

²³⁵ Tr. 111:13-21 (Rosenberg); *see* OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETR00706.xlsx (Sheet 5 Tab).

112. The evidence also supports our finding that Respondents were aware that their virtual trading affected prices at New Melones. Rosenberg tracked the impact of ETRACOM's virtual trading strategy at New Melones using a spreadsheet, which compared the day-ahead price at New Melones to ETRACOM's offers and specifically highlighted the hours in which ETRACOM's offers equaled the LMP.²³⁶

(d) **Respondents' explanations for their trading patterns are not persuasive**

113. Respondents offer two principal explanations or defenses for their virtual trading pattern at New Melones: (1) that they expected a historic hydro run-off event in May 2011 that would make their low virtual supply offers at New Melones profitable; and (2) CAISO market design flaws and software errors incentivized their trading and are responsible for any market harms. As discussed below, we find that the evidence does not support Respondents' arguments.

(1) **Claimed imminent hydro event**

114. Respondents argue that their CRR and virtual trading strategies at New Melones can be explained by their legitimately held expectation of an "historic" and "rare" large-scale hydro event during May 2011.²³⁷ Respondents point to evidence of record snow accumulations during the previous winter and the expected resulting runoff, as well as their observation that there was day-ahead congestion at the New Melones intertie earlier in the spring, which appeared to intensify during the first two weeks of May.²³⁸ Based on those indicators, Respondents claim they anticipated imminent and significant congestion in the HASP at the New Melones intertie, which would cause HASP prices to move significantly below \$0, making Respondents' virtual positions profitable. We find no credible evidence to support this defense.

²³⁶ See, e.g., OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETR03140.xlsx; see also Tr. 138:25-139:18 (Rosenberg) (acknowledging that he compared the day-ahead New Melones prices with ETRACOM's cleared bids there and observed that ETRACOM's bids at New Melones were marginal for the "first days" of the May 17-31 time period).

²³⁷ See, e.g., Answer at 2, 15, 17.

²³⁸ Answer at 34-35.

115. Respondents offer evidence that multiple authorities forecasted abnormally high levels of hydro runoff and water levels at reservoirs in the Pacific Northwest and Sierra Nevada Mountains during the spring of 2011.²³⁹ Respondents also offer contemporaneous communications purportedly demonstrating that they discussed hydro conditions frequently prior to and during the Manipulation Period.²⁴⁰ But these forecasts and weather-related reports and discussions are not persuasive evidence that ETRACOM expected an *imminent, historic* hydro run-off event during the Manipulation Period. We agree with OE Staff that Respondents offer no evidence that ties their general hydro-event defense to the specific trading patterns in this case. Specifically, Respondents offer no evidence substantiating ETRACOM's claimed expectation of a significant hydro event beginning in mid-May 2011, such as evidence related to an expected accelerating event like warm rain. As Rosenberg himself was aware, absent the occurrence of some accelerating factor, snow pack will melt gradually throughout the spring and summer season.²⁴¹ However, there is simply no such evidence of an expected accelerating event in this record.

116. Respondents offer the affidavit of Dr. Arie Kapulkin, a "member-manager" of ETRACOM²⁴² who serves in an advisory and consultative role in ETRACOM's trading of CRRs and virtual trades in the CAISO markets.²⁴³ Dr. Kapulkin testifies that ETRACOM's virtual trading was motivated by its hydro strategy, and also testifies as to his and Rosenberg's expectation in late April and early May that substantial snowpack melting was "likely" during May.²⁴⁴ We do not find Dr. Kapulkin's after-the-fact testimony persuasive or credible in light of: (1) the contrary contemporaneous NOAA

²³⁹ *Id.* at 34-35.

²⁴⁰ *Id.* at 40-41.

²⁴¹ OE Staff Second Supplemental Submission of Non-Public Investigative Materials, Apr. 25, 2016, Email from Michael Rosenberg to Fred Jin (6/23/2011 12:02 PM) (ETR01053-54) ("In CA, unless there is some exceptional event[,] the hydro will be slow melting on major interties . . .").

²⁴² Kapulkin Aff. ¶ 1.

²⁴³ Kapulkin Aff. ¶ 4.

²⁴⁴ *Id.* ¶ 12.

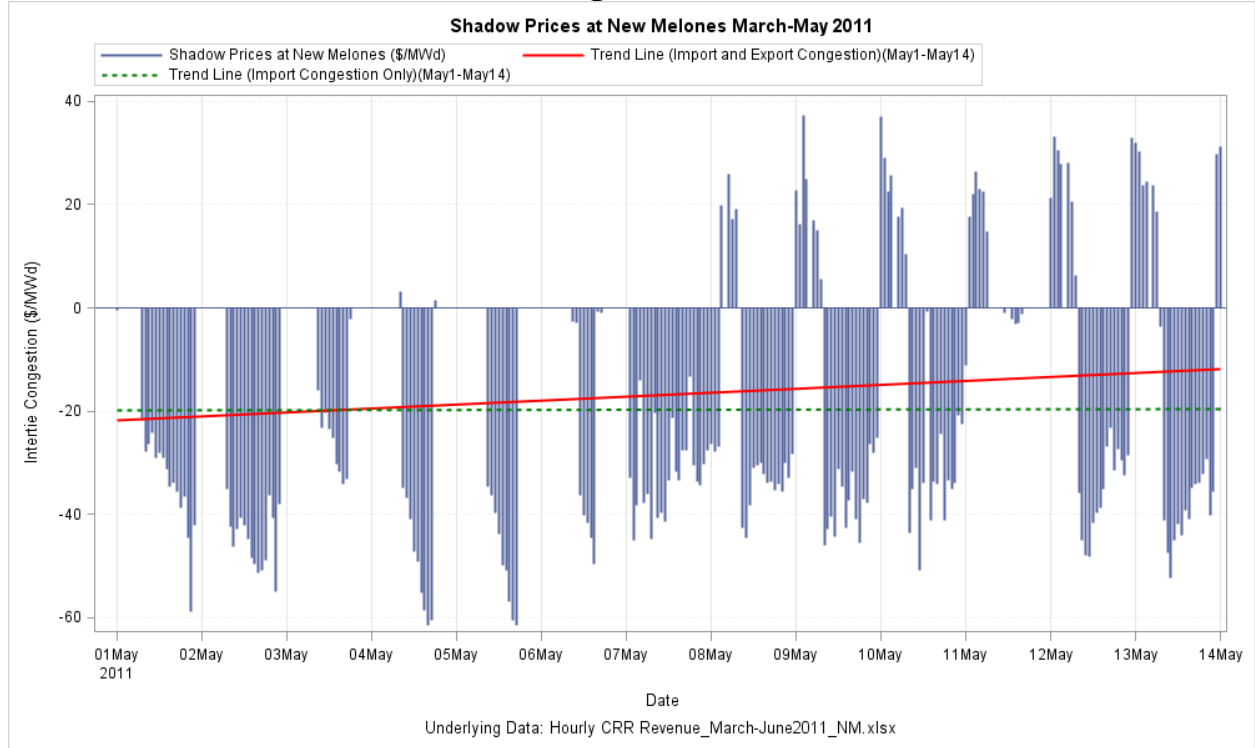
weather forecasts indicating frequent snow in the West (rather than melting) during May 2011;²⁴⁵ and (2) our finding that the market data in the record do not support Respondents' hydro theory as they claim. Respondents have asserted that ETRACOM observed consistent day-ahead congestion at New Melones, which intensified in the first two weeks of May 2011, and thus indicated to Respondents (along with hydro forecasts) that the market anticipated significant congestion in the HASP at the intertie. However, as indicated by the green dotted trend line in Figure 1 below,²⁴⁶ import congestion did not increase in the weeks leading up to the Manipulation Period. Instead, it remained fairly steady. When export congestion is considered as part of the overall congestion pattern during this time period, import congestion is actually *decreasing*, as indicated in the red trend line in Figure 1. A trend of increasing import congestion only occurred *after* May 16, when Respondents' trading put downward pressure on day-ahead LMP prices.²⁴⁷ Thus, we reject Respondents' assertion that increasing day-ahead import congestion at New Melones led them to believe a major hydro event was imminent and thus motivated their virtual trading at New Melones during the Manipulation Period.

²⁴⁵ See Staff Reply at Attach. A. We also reject Respondents' assertions that due to an El Niño event in 2011, they expected high hour-ahead import congestion over New Melones. See, e.g., Ledgerwood Aff. ¶ 51 (citing ETRACOM Narrative Response to FERC Data Request 3, at 2 (Jan. 31, 2012)). Publicly available NOAA information indicates that, contrary to Respondents' assertions, there was no El Niño expected during any part of 2011. See NOAA, National Weather Service Climate Prediction Center, "ENSO Diagnostic Discussion Archive," available at http://www.cpc.ncep.noaa.gov/products/expert_assessment/ENSO_DD_archive.shtml.

²⁴⁶ Figure 1 was developed by Commission decisional staff using data in the evidentiary record.

²⁴⁷ See Staff Reply at 9-10.

Figure 1



117. In general, we find Respondents’ assertion that an imminent and historic hydro event motivated them to engage in a two-and-a-half week money-losing virtual trading strategy to be implausible and unsupported by the evidence. The more reasonable finding, supported by the preponderance of the evidence, is that ETRACOM’s consistent pattern of uneconomic virtual supply offers was part of a cross-market manipulative scheme.

(2) **Alleged market design flaws and software error**

118. Respondents argue that CAISO's flawed market design and software pricing and modeling errors are to blame for Respondents' virtual trading behavior and any resulting harms. Specifically, Respondents argue that market design flaws led to an uncompetitive and dysfunctional market at New Melones that sent incorrect price signals and caused unforeseeable outcomes. Respondents aver that, had the market operated properly, ETRACOM's small offers would not have set the price or created congestion, and there would not have been any impact on price.²⁴⁸ Respondents also claim that the software errors led them to place zero and negatively priced virtual supply offers. We find that, as with their hydro-event defense, Respondents fail to demonstrate that the flawed design was the cause of the virtual trading behavior in question. Market manipulation is not excused simply because there are market inefficiencies or even market dysfunction.²⁴⁹

119. As an initial matter, we reject Respondents' arguments that the "well-functioning market" language in Order No. 670 limits the reach of the Commission's Anti-Manipulation Rule to only those Commission jurisdictional markets without imperfections and requires OE Staff to demonstrate that the relevant market was well-functioning. Under the Anti-Manipulation Rule, fraud "*include[s]* any action, transaction, or conspiracy for the purpose of impairing, obstructing or defeating a well-functioning market."²⁵⁰ Nothing in the Anti-Manipulation Rule suggests that OE Staff is required to prove that the market in which the manipulation occurred was "well-functioning," nor does the alleged existence of market flaws serve as a defense to Respondents' manipulative trading behavior.

120. All markets, even generally well-functioning markets, can have flaws and be susceptible to manipulation. Neither the Commission, nor the operators of regulated

²⁴⁸ Answer at 10.

²⁴⁹ See *Lincoln Paper*, 144 FERC ¶ 61,162 at P 35 ("[E]ven assuming, *arguendo*, that certain features of the DALRP [Day-Ahead Load Response Program] . . . left the DALRP vulnerable to manipulation, that does not excuse the manipulation itself. . . . [the] scheme was not an inevitable result of the DALRP's structure at the time."); *CES*, 144 FERC ¶ 61,163 at P 48; *Silkman*, 144 FERC ¶ 61,164 at P 48 (same).

²⁵⁰ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 50 (emphasis added). We note that Order No. 670 states that fraud is "to include" such conduct affecting a well-functioning market. But Order No. 670 does not state that a finding of fraud under the Anti-Manipulation Rule is limited to such conduct.

organized markets, can anticipate and address (either by explicit prohibition or through market incentives) every possible manipulative activity.²⁵¹

121. Further, our conclusion that a flawed market can be manipulated is not new or surprising. It is widely understood that there were serious flaws in the California energy markets during the 2000-2001 energy crisis. Such flaws opened the door for certain market participants to commit fraud and to manipulate the markets, exacerbating market problems and causing great hardship to consumers.²⁵² It was largely in response to those

²⁵¹ The courts have found that the same is true for manipulation generally in the commodities and securities industries. *See, e.g., Santa Fe Indus., Inc. v. Green*, 430 U.S. 462, 477 (1977) (“No doubt Congress meant to prohibit the full range of ingenious devices that might be used to manipulate [] prices.”); *Cargill, Inc. v. Hardin*, 452 F.2d 1154, 1163 (8th Cir. 1971) (“We think the test of manipulation must largely be a practical one if the purposes of the Commodity Exchange Act are to be accomplished. The methods and techniques of manipulation are limited only by the ingenuity of man.”). *FERC v. Silkman*, ---F. Supp. 3d---, Nos. 13-13054-DPW, 13-13056-DPW, 2016 WL 1430009, at *17 (D. Mass. Apr. 11, 2016) (“As in any regulatory or statutory scheme, there is inevitably some tension between providing precise guidance and preserving the flexibility to address the often ingenious imaginations of those who would seek to evade regulatory strictures and take advantage of perceived loopholes” (citing *Affiliated Ute Citizens of Utah v. United States*, 406 U.S. 128, 151 (1972) (“prohibition on fraud should be read ‘not technically and restrictively, but flexibly to effectuate its remedial purposes.’”))).

²⁵² *See, e.g.,* Shaun Ledgerwood & Gary Taylor, *Enron’s California Schemes Haunt Regulators 15 Years Later*, RISK.NET (Jan. 14, 2016), <http://www.risk.net/energy-risk/opinion/2441392/enron-s-california-schemes-haunt-regulators-15-years-later> (“Many of Enron's strategies used uneconomic or otherwise fraudulent behavior to exploit illiquid prices or flawed market rules to benefit positions tied to the biased price or garner payments from the flawed rules.”); GARY TAYLOR, SHAUN LEDGERWOOD, ROMKAEW BROEHM & PETER FOX-PENNER, *MARKET POWER & MARKET MANIPULATION IN ENERGY MARKETS* 6 (Pub. Utilities Rep. Inc., 2015) (“[Y]ears of litigation have made clear that while market power and market design issues were factors at play during the [California Energy] Crisis, an important contributing cause was market manipulation using fraud-based schemes”); *id.* at 69 (“The roots of the [California Energy] Crisis were complex . . . Scarcity certainly contributed along with other factors we discuss, such as market design flaws and lack of demand response. Of particular importance, however, was supplier behavior that took advantage of these conditions. Numerous studies . . . have concluded that prices were elevated by strategies developed by Enron and other suppliers to manipulate the markets that are treated in later chapters.”).

events that Congress passed the Energy and Policy Act of 2005 (EPAct 2005) and section 222 of the FPA which, in particularly broad language, prohibits manipulation of our electricity markets.

122. Consistent with our precedent, the Commission looks at all facts and circumstances to determine whether Respondents engaged in manipulative behavior. Market circumstances, including circumstances that involve potential market “flaws,” can provide context for market participant behavior.²⁵³

123. Here, Respondents describe circumstances in which export congestion unexpectedly appeared at New Melones because the intertie was fully encumbered, and at New Melones the intertie price was set incorrectly at \$0 under certain circumstances. The evidence demonstrates that, in the wake of unexpected export congestion, Respondents placed \$0 and negatively priced virtual supply offers, often at or near the offer floor, which depressed the day-ahead LMP at New Melones and eliminated the unexpected export congestion. The evidence also demonstrates that this was a consistently money-losing virtual trading strategy that benefited Respondents’ CRR positions, and Respondents persisted with the strategy until their CRR position was reduced. Regardless of whether or not CAISO market flaws and software errors created false price signals and incentives for market participants to place \$0 or negative virtual supply bids, or even that there was “confusing” pricing at New Melones,²⁵⁴ the evidence demonstrates that Respondents knowingly engaged in money-losing virtual trading that affected prices and benefited their CRR positions. Respondents did not need to understand the exact reasons that export congestion appeared or why their \$0 negatively-

²⁵³ Here, the relevant circumstances include the uncertainties of how the newly implemented virtual bidding market feature would operate in practice, including potential misuse of virtual bidding to benefit a market participant’s CRRs. CAISO’s proposed market design included several features to detect, prevent, and remedy this form of manipulation, including position limits. The Commission found CAISO’s proposed phased approach to position limits “appropriately cautious” because this “additional safety net may be appropriate to prevent unforeseen and unintended market outcomes.” *Cal. Indep. Sys. Operator Corp.*, 133 FERC ¶ 61,039 at P 121. In approving CAISO’s design for virtual bidding, the Commission warned that “convergence bidding practices should not enhance the value of any financial products, be it a congestion revenue right or other product.” *Id.* P 154.

²⁵⁴ See Answer at 4, 30 (citing Hogan Aff. ¶¶ 3, 11-15, 17).

priced virtual offers were setting or depressing the day-ahead LMP to engage in the manipulative trading conduct described above.²⁵⁵

124. Respondents' specific claim that the software error is to blame for their \$0 and negatively priced virtual supply offers at New Melones and resulting losses, on the grounds that such bidding was required to maximize the chances of clearing the market, is unavailing. We agree with OE Staff that, although the alleged software error could explain some virtual supply offers at or below zero, a software error of that nature would not explain the specific and persistent manipulative trading pattern here. Such a software error would not explain why ETRACOM continued to submit money-losing virtual supply offers, often hitting or nearly hitting the offer floor, in virtually every hour during the Manipulation Period. As discussed in Part III.B.3.a.iii.(b) above, the evidence does not support a reasonable expectation that such transactions would be profitable.

125. We are not persuaded by Respondents' arguments that their virtual trading behavior at New Melones during the Manipulation Period was rendered permissible due to alleged market flaws.²⁵⁶ The Commission has broadly defined fraud to include all types of conduct that occurs outside of the genuine interplay of supply and demand.²⁵⁷ In accord, securities and commodities law establishes that injection of false supply or demand information is manipulation.²⁵⁸ Moreover, the fact that supposed market flaws

²⁵⁵ As we discuss in more detail in Part III.B.3.b, in our discussion of Respondents' requisite scienter, it is sufficient that Respondents understood that they were impacting the day-ahead LMP at New Melones, or *thought* that they were impacting the price through their virtual offers.

²⁵⁶ See, e.g., *Kohen v. Pac. Inv. Mgmt. Co., LLC*, 244 F.R.D. 469, 484-5 (N.D. Ill. 2007) (allowing a claim under the Commodities Exchange Act and accepting plaintiff's argument that "defendants intentionally exacerbated the [Treasury note futures contract] market, which was susceptible to price manipulation.").

²⁵⁷ See *City Power*, 152 FERC ¶ 61,012 at P 59 (citing 16 U.S.C. § 824v(a) (2012)).

²⁵⁸ See, e.g., *Santa Fe Indus. Inc. v. Green*, 430 U.S. 462, 476 (1977) ("practices . . . that are intended to mislead investors by artificially affecting market activity" constitute manipulation); *ATSI Commc'ns, Inc. v. Shaar Fund, Ltd.*, 493 F.3d 87, 100 (2d Cir. 2007) ("[t]he deception arises from the fact that investors are misled to believe 'that prices at which they purchase and sell securities are determined by the natural interplay of supply and demand, not rigged by manipulators'" (quoting *Gurary v. Winehouse*, 190 F.3d 37, 45 (2d Cir. 1999) (citations omitted)); *Chris-Craft Indus., Inc. v. Piper Aircraft*, 480 F.2d 341, 383 (2d Cir. 1973) ("The securities laws are designed to create investors

and errors were not transparent to market participants at the time does not change our findings here. Markets are rarely free of imperfections.²⁵⁹ Respondents misread our precedent in the *Deutsche Bank, Constellation, and MISO Virtual and FTR Trading* cases as somehow requiring that market participants have knowledge of any and all errors in the relevant markets as a prerequisite to a manipulation finding.²⁶⁰ These cases do not address the issue and thus do not support the conclusion that such knowledge is required. We expect market participants to abide by our Anti-Manipulation Rule at all times, notwithstanding any errors or flaws—actual or perceived, transparent or unknown—in the market.

126. We further find that CAISO’s decision to make changes to its CRR and virtual trading markets after the Manipulation Period is irrelevant to the matter at issue here: whether ETRACOM engaged in a manipulative scheme. As discussed above, market design flaws do not excuse manipulative conduct and sometimes provide the context for it. Moreover, it would be contrary to our statutory obligations, and impractical as a matter of policy, to only enforce the Anti-Manipulation Rule on market designs and circumstances that continue to exist. This is especially true when the market change is intended at least in part to limit the potential for manipulation.²⁶¹

markets where prices may be established by the free and honest balancing of investment demand with investment supply.”) (internal quotation marks and citations omitted); *CFTC v. Kraft*, ---F. Supp. 3d---, No. 1:15-cv-02881, 2015 WL 9259885, at *11 (N.D. Ill. Dec. 18, 2015) (Defendant “through its activities in the market, conveyed a false sense of demand, and the resulting prices in the market . . . were based not solely on the actual supply and demand in the market but rather were influenced by [Defendant’s] false signals of demand.”).

²⁵⁹ See, e.g., William W. Hogan, *Electricity Market Design Flaws and Market Manipulation*, at 6 (Feb. 3, 2014), available at https://www.hks.harvard.edu/fs/whogan/Hogan_MDFMM_02_03_14.pdf (“In practice, no market is perfect and no market design is without its defects.”).

²⁶⁰ See Answer at 86 (citing *Ledgerwood Aff.* ¶ 36, which discusses the *Deutsche Bank, Constellation, and MISO Virtual & FTR Trading* cases).

²⁶¹ See, e.g., *Competitive Energy Servs., LLC*, 144 FERC ¶ 61,163 at P 25; *Silkman*, 144 FERC ¶ 61,164 at P 25 (describing, in an order assessing civil penalties for manipulation, modification of market rules to limit potential for further fraudulent behavior by market participants).

127. Finally, Respondents assert that CAISO has violated its own tariff and the filed rate doctrine because of its software errors and because it erroneously considered New Melones part of a constrained path in its New Melones LMP calculation. This proceeding addresses whether Respondents violated the Commission's Anti-Manipulation Rule. As relevant here, we find that Respondents engaged in a manipulative scheme notwithstanding alleged market flaws. Whether CAISO violated its tariff or the filed rate doctrine is irrelevant to the matters before us.

(e) **Other defenses**

128. Respondents claim that OE Staff repeatedly mischaracterizes, misstates, and mis-cites the record in its Staff Report, leading to unreasonable outcomes in light of the evidence presented. Respondents and OE Staff may disagree with the conclusions that should be drawn from the record. Here, as in any other adjudication before the Commission, the Commission's determinations are based on its own review of the relevant pleadings and evidence, not either party's characterizations.

129. Respondents characterize OE Staff's allegations in this matter as "unprecedented," particularly in light of the lack of "speaking documents" suggesting that ETRACOM sought to game the markets.²⁶² We disagree. Under the Anti-Manipulation Rule, the element of fraud is a question of fact that must be determined based on the particular circumstances of each case.²⁶³ Here, the trading data provides a clear demonstration of ETRACOM's manipulative scheme. In particular, the trading data clearly reflects that, after export congestion materialized at New Melones and harmed Respondents' CRR positions, Respondents began a new, consistently money-losing virtual trading strategy during the Manipulation Period, in which they traded in a manner that drove down day-ahead LMP prices at New Melones and that benefited their CRR positions. The trading data also reflects that, when May 2011 ended and Respondents' CRR positions were much smaller, this trading strategy disappeared. And as discussed above, contemporaneous communications and documents substantiate our findings regarding this trading pattern. The trading data, coupled with the contemporaneous evidence, more than satisfies our preponderance of the evidence standard to establish a scheme to defraud.

130. Respondents also assert that OE Staff failed to prove that ETRACOM's activity caused the alleged market harm, and therefore no manipulation can be found, citing securities law precedent. We disagree. There is no requirement for OE Staff to prove

²⁶² Answer at 86.

²⁶³ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 50.

causation under our Anti-Manipulation Rule, nor is there a causation requirement for the Securities and Exchange Commission (SEC) when it seeks to prove a violation of its Rule 10b-5, upon which our Anti-Manipulation Rule was modeled.²⁶⁴ Respondents cite to case law and statutory authority that involve *private* securities litigation, in which loss causation is an element of a private securities claim. These authorities are inapplicable, as both FPA section 222 and the Commission’s Anti-Manipulation Rule explicitly reject private rights of action.²⁶⁵ We rely directly on language in Order No. 670 and SEC 10b-5 precedent finding that there is no such causation requirement. As long as all three elements of our Anti-Manipulation Rule are met, as we find here, our anti-manipulation authority extends even to attempted manipulation.²⁶⁶ In any case, as described below in Part III.B.4, we find that ETRACOM did cause market harm by increasing congestion levels at New Melones and distorting market prices. We also find that Respondents’

²⁶⁴ *Id.* P 48. Order No. 670 establishes that the Commission relies on SEC precedent under 10b-5 as guidance for its enforcement actions. Order No. 670 explains that under SEC precedent there is no requirement “to show reliance, loss causation or damages because ‘the Commission’s duty is to enforce the remedial and preventive terms of the statute in the public interest, and not merely to police those whose plain violations have already caused demonstrable loss or injury.’” *Id.*; *see also SEC v. Lee*, 720 F.Supp.2d 305, 325 (S.D.N.Y. 2010) (“Unlike private litigants, who must comply with the PSLRA [i.e., Private Securities Litigation Reform Act], the SEC is not required to prove investor reliance, loss causation, or damages in an action for securities fraud.”) (citing *SEC v. Simpson Capital Mgmt.*, 586 F. Supp. 2d 196, 201 (S.D.N.Y. 2008) (citing *SEC v. KPMG LLP*, 412 F. Supp. 2d 349, 375 (S.D.N.Y. 2006))).

²⁶⁵ FPA section 222 states that “[n]othing in this section shall be construed to create a private right of action.” 16 U.S.C. § 824v(b) (2012). Under the Commission’s Anti-Manipulation Rule, “[n]othing in this section shall be construed to create a private right of action.” 18 C.F.R. § 1c.2(b) (2015).

²⁶⁶ *Maxim Power Corp.*, 151 FERC ¶ 61,094, at P 7 n.5 (2015) (*Maxim Power*) (“Courts have long recognized that attempted manipulation and fraud are worthy of punishment in the same manner as successful schemes.”) (citing *Kuehnert v. Texstar Corp.*, 412 F.2d 700, 704 (5th Cir. 1969)); *see In re Tenaska Mktg. Ventures*, 126 FERC ¶ 61,040 (2009) (Commission approval of civil penalty and compliance reporting resulting from violations of 18 C.F.R. § 1c.1 in connection with attempt to engage in multiple affiliate bidding to impair the pro rata allocations in an auction).

causation arguments overlap with their market design and software errors arguments, which we address above.²⁶⁷

131. Finally, we reject Respondents' generalized claim that a finding of fraud would establish an "impossible-to-defend manipulation standard riddled with inconsistencies."²⁶⁸ The standard that we have applied to this case to determine whether there has been a violation of the Anti-Manipulation rule and section 222 of the FPA is the same standard that the Commission has applied to similar cases, and is consistent with applicable statutes and regulations.²⁶⁹ Based on the totality of evidence, we find that Respondents' virtual trading during the Manipulation Period constituted a device, scheme, or artifice to defraud the CAISO market and market participants.

b. Scienter

132. Scienter is the second element of the Commission's Anti-Manipulation Rule.²⁷⁰ For purposes of establishing scienter, Order No. 670 requires reckless, knowing, or intentional actions taken in conjunction with a fraudulent scheme, material misrepresentation, or material omission.²⁷¹

i. Respondents' Answer

133. Respondents assert that OE Staff did not meet its burden to prove that ETRACOM traded with scienter. First, Respondents argue that, unlike in other enforcement actions, OE Staff cites no contemporaneous evidence, speaking documents, or witness testimony demonstrating or suggesting that ETRACOM traded at New Melones with fraudulent

²⁶⁷ See *supra* Part III.B.3.a.iii.(d)(2).

²⁶⁸ Answer at 77-79.

²⁶⁹ See 16 U.S.C. § 824v(a) (2012); *City Power*, 152 FERC ¶ 61,012 at P 5 ("Based on the totality of the record in this proceeding, we find that Respondents' Loss Trades during the Manipulation Period violated section 222 of the FPA and the Anti-Manipulation Rule."); *Chen*, 151 FERC ¶ 61,179 at P 4.

²⁷⁰ See Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 49.

²⁷¹ *Id.* PP 52-53; see also *Investigation of Terms and Conditions of Public Utility Market-Based Rate Authorizations*, 105 FERC ¶ 61,218, at P 43 (2003) (finding that scienter "will be based on a consideration of the facts and circumstances of the conduct at issue to determine its purpose and intended or foreseeable result.").

intent. According to Respondents, substantial contemporaneous evidence supports just the opposite, ETRACOM's pursuit of a legitimate stand-alone profit motive.²⁷²

134. Respondents dispute OE Staff's conclusion that ETRACOM's virtual trading activity was intentionally uneconomic.²⁷³ According to Respondents, on a day-to-day basis, ETRACOM's trading was economically rational, and the losses ETRACOM incurred in May 2011 at New Melones were small in comparison to the scale of profits and losses experienced by its virtual trading portfolio over time. Respondents find OE Staff's assertion that ETRACOM expressed little concern about the virtual trading losses to be untrue, as demonstrated by contemporaneous evidence showing that Rosenberg seriously considered stopping the trades at New Melones on May 20, and given that some of ETRACOM's offers from May 14-15 (what OE Staff refers to as the "test period") made money on those days.²⁷⁴ Respondents also argue that export congestion gave ETRACOM the opportunity to profit twice: through a day-ahead payment for offering supply at potentially positive prices and through the hydro strategy when the HASP price cleared lower than the day-ahead price. Thus, Rosenberg's argument that export congestion, which resulted in higher day-ahead prices, incentivized ETRACOM's virtual supply bids is complementary—not inconsistent—with ETRACOM's hydro event explanation.²⁷⁵

135. Respondents argue that ETRACOM's selection of New Melones for its hydroelectric strategy, as opposed to other locations, is not evidence of manipulative intent.²⁷⁶ Respondents explain that ETRACOM implemented similar strategies at other locations during May and June 2011. Respondents also claim that OE Staff ignores Rosenberg's testimony that in May 2011, ETRACOM understood New Melones to be the optimal location at which to employ its hydro strategy, as well as various third-party hydro forecasts forecasting significantly increased water flows beginning in mid-May 2011 at the New Melones Reservoir. Finally, Respondents argue that it is unfair to criticize ETRACOM for not implementing its hydro strategy elsewhere, even if those

²⁷² Answer at 51-52.

²⁷³ *Id.* at 52-54.

²⁷⁴ Answer at 52-53.

²⁷⁵ *Id.* at 53-54, 57.

²⁷⁶ *Id.* at 54.

other locations were potentially more profitable, as ETRACOM's trading activity at New Melones was legitimate given its view of market conditions.²⁷⁷

136. Respondents assert that the timing of ETRACOM's trades was consistent with legitimate trading activity.²⁷⁸ Respondents dispute OE Staff's characterization of May 14-15 as the "test period" for ETRACOM's manipulative strategy, finding that at the time, it would have been impossible for ETRACOM to conceive of reversing export congestion and creating import congestion with a single MW of virtual supply, among other reasons. Respondents also argue that it was entirely consistent with ETRACOM's other trading activity to begin a strategy mid-month, expand the strategy after a "test period," and then end the strategy at the end of the month.²⁷⁹ Further, Rosenberg offered explanations as to why he ended the strategy at the end of the month.²⁸⁰

137. Respondents argue that ETRACOM's trading activity at New Melones in May 2011 was entirely consistent with its trading activity at other locations before, during, and after its hydro strategy at New Melones, as evidenced by multiple examples from February to July 2011. Respondents also argue that trading mid-month and expanding trades to all hours cannot create import congestion in a well-functioning market.²⁸¹

138. Respondents assert that OE Staff's conclusion that an anticipated hydro event was "implausible" requires perfect hindsight and unreasonably demands perfect trading knowledge from traders. Respondents dispute OE Staff's use of historical HASP prices as evidence of ETRACOM's low supply offers, and contend that ETRACOM's expectation of the hydro event was reasonable.²⁸²

139. Respondents argue that OE Staff circularly proves intent by assuming guilt.²⁸³ Specifically, Respondents assert that the increasing day-ahead import congestion in May was a technical indicator that supported Respondents' anticipation of a significant hydro

²⁷⁷ *Id.* at 54-56.

²⁷⁸ *Id.* at 56-60.

²⁷⁹ Answer at 57-59.

²⁸⁰ *Id.* at 60.

²⁸¹ *Id.* at 60-65.

²⁸² *Id.* at 65-68.

²⁸³ *Id.* at 66, 79.

event, yet OE Staff argues that the increase in congestion was due to ETRACOM's own trading. According to Respondents, OE Staff assumes that ETRACOM knew its trades caused the congestion, which is an "unreasonable inference since such an event would not occur in a well-functioning market and all indications are that ETRACOM did not believe its trades singularly caused congestion."²⁸⁴

ii. OE Staff Report and Reply

140. OE Staff avers that ETRACOM pursued its uneconomic virtual trading strategy at New Melones in May 2011 with the intent to lower the day-ahead LMP to benefit its CRR positions. OE asserts that scienter is established in this case by: (1) the uneconomic nature of ETRACOM's virtual trades; (2) the location, timing, and distinctiveness of its trades when compared to its CRR position; and (3) the implausible nature of ETRACOM's hydro event explanation.²⁸⁵

141. First, OE Staff asserts that, contrary to ETRACOM's contentions, ETRACOM was not responding to price signals during the Manipulation Period and its trading was not economic. OE Staff explains that ETRACOM's virtual trading as a whole was uneconomic because market prices in early May made it obvious that absent a dramatic change in conditions, negatively priced virtual supply offers would lose money. OE Staff asserts that this fact was known to ETRACOM prior to initiating its trading strategy and throughout May 2011.²⁸⁶ OE Staff also asserts that ETRACOM's virtual trades consistently lost money throughout the entire trading period. OE Staff also explains that ETRACOM need not set the price in every hour to engage in manipulation and that ETRACOM's behavior drove market conditions during the entire May 14-31 period, regardless of whether its offers set price.²⁸⁷ According to OE Staff, the only way ETRACOM's trades would have been profitable was if HASP prices dropped below ETRACOM's -\$30/MWh offer price, which was unlikely notwithstanding ETRACOM's assertion that a hydro event was imminent and would lead to significantly negative prices.²⁸⁸

²⁸⁴ *Id.* at 79.

²⁸⁵ Staff Report at 23.

²⁸⁶ *Id.* at 23.

²⁸⁷ *Id.* at 34-35.

²⁸⁸ *Id.* at 23.

142. OE Staff finds no other reason for ETRACOM to select New Melones as the location for its virtual trading strategy other than an attempt to manipulate the LMP to benefit its CRR positions. ETRACOM's purported hydro related strategy would not only apply to New Melones, and in fact, there were many other potentially more profitable locations that ETRACOM could have chosen for such a strategy besides New Melones.²⁸⁹

143. In addition, OE Staff claims that the timing associated with ETRACOM's virtual trading strategy is also indicative of ETRACOM's intent. ETRACOM's strategy began only a few days after ETRACOM discovered that the profitability of its CRR positions was being adversely affected by export congestion. Further, ETRACOM's virtual trading during the test period specifically targeted the eight hours that had experienced the export congestion, using hour-ending 7 as a control variable to test the impact of its trading strategy in countering the export congestion. According to OE Staff, ETRACOM's expansion of its virtual trading strategy starting on May 16, even after sustaining net losses, demonstrates that ETRACOM viewed its strategy as successful during the test period and worthy of expansion. OE Staff concludes that ETRACOM's impact on the day-ahead LMP and its associated CRR profitability motivated its expansion. Finally, OE Staff asserts that ETRACOM abruptly ended its virtual trading strategy on the same day that its CRR positions that benefited from the strategy substantially decreased, as ETRACOM no longer had the incentive to continue its manipulative strategy.²⁹⁰

144. Second, OE Staff asserts that ETRACOM's virtual trading at New Melones in May 2011 was anomalous compared to its trading at other locations. For example, it was the only strategy that began mid-month and encompassed all hours for an extended period.²⁹¹ In response to Respondents' assertions that ETRACOM's trades at other locations in May and June and at New Melones in June establish legitimate trading at New Melones in May 2011, OE Staff disagrees because ETRACOM's experts are providing a post hoc rationalization without first hand contemporaneous knowledge of the event. OE Staff also disputes Respondents' interpretation of the trading data. According to OE Staff, ETRACOM's trading at other nodes in May and June 2011 and at New Melones in June 2011 does not establish legitimate intent for Respondents' virtual trading at New Melones in May 2011. OE Staff disagrees with Respondents that ETRACOM's trading at New Melones in June 2011 demonstrates that ETRACOM did

²⁸⁹ *Id.*

²⁹⁰ Staff Report at 24.

²⁹¹ *Id.*

not understand the relationship between its virtual trading and CRR positions in May 2011.²⁹²

145. OE Staff argues that ETRACOM understood and intended its virtual trading to impact its CRR positions. First, ETRACOM tracked the relationship between its virtual offer prices and the cleared LMP, and was aware that its negative bids set the day-ahead price. And Rosenberg understood that negative LMPs at New Melones caused ETRACOM's CRR positions to profit, and was able to, and did, track the profitability of ETRACOM's CRR positions. Thus, Rosenberg would have realized that ETRACOM's virtual trading behavior was causing the dramatic increase in the profitability of ETRACOM's CRR position.²⁹³ Second, OE Staff explains that although ETRACOM may not have known that the line was fully encumbered, ETRACOM still knew that the line was at its limit and that small virtual transactions would have an effect on prices.²⁹⁴

146. OE Staff disputes Respondents' contention that its CRR profits were not extraordinary and that ETRACOM would not notice the positions' gains.²⁹⁵ OE Staff also argues that ETRACOM's virtual trading strategy at New Melones in June 2011 is inconsistent with its hydro event theory.²⁹⁶

147. Further, OE Staff disputes Respondents' assertion through expert testimony that it is implausible that ETRACOM could have formed an expectation that its 1-5 MW virtual supply offers could set the price, reverse export congestion to become import congestion, and impact its CRRs because of the line's import limit of 384 MW. According to OE Staff, what is relevant is at the time Respondents engaged in their virtual supply trading strategy, ETRACOM and Rosenberg knew that the New Melones line was at its limit, regardless of what that limit was, because they had observed congestion at the intertie before May 14 and 15. According to OE Staff, Respondents also knew or should have known, based on readily observable flow data and market conditions, that there was congestion on the line even when the physical import or export limit had not been reached.²⁹⁷ OE Staff claims that the record evidence shows that Respondents had reason

²⁹² Staff Reply at 12-16.

²⁹³ Staff Report at 35.

²⁹⁴ *Id.* at 36.

²⁹⁵ *Id.* at 36-37; Staff Reply at 19-20.

²⁹⁶ Staff Report at 37.

²⁹⁷ Staff Reply at 25-26.

to know that a small number of virtual supply transactions would have an effect on congestion and related LMP pricing to the benefit of their CRRs, and that they became aware that their virtual trading was in fact impacting congestion and affecting LMP prices at New Melones in May 2011. According to OE Staff, the Commission has rejected incorporating a specific intent standard into the Anti-Manipulation Rule, and thus all OE Staff must show is that Respondents generally intended to influence congestion at the New Melones intertie. OE Staff thus does not have to separately prove that Respondents intended specifically the precise impact on (*e.g.*, reversal of) congestion, that Respondents intended to affect the price in all hours; or that Respondents' trading caused harm.²⁹⁸

148. OE Staff disagrees with Respondents' characterization of their negative supply offers as passive price-taking offers that were not intentionally placed to affect price. According to OE Staff, Respondents fail to acknowledge that all offers demonstrate an active willingness to pay and contribute to price formation. Respondents also disregard evidence that establishes their willingness to continuously pay in the day-ahead market at lower and lower prices, as well as their knowledge of their direct effect on price.²⁹⁹

iii. Commission Determination

149. We find that Respondents acted with the requisite scienter in connection with their scheme. We find sufficient evidence demonstrating Respondents' manipulative intent from the scheme itself and the contemporaneous IM communications, testimony, trade data, and other evidence, and the absence of market fundamentals underlying the virtual trading at issue. Further, it is well-established that "[t]he presence of fraudulent intent is rarely susceptible of direct proof, and must instead be established by legitimate inferences from circumstantial evidence. These inferences are based on the common knowledge of the motives and intentions of men in like circumstances."³⁰⁰ Indeed, the Commission has specifically recognized that "intent must often be inferred from the facts and circumstances presented."³⁰¹

²⁹⁸ Staff Reply at 27-29.

²⁹⁹ *Id.* at 19.

³⁰⁰ *United States v. Sullivan*, 406 F.2d 180, 186 (2d Cir. 1969) (citing *Connolly v. Gishwiller*, 162 F.2d 428, 433 (7th Cir. 1947)); accord *Thomas v. Doyle*, 187 F.2d 207, 208 (D.C. Cir. 1950).

³⁰¹ *Investigation of Terms and Conditions of Public Utility Market-Based Rate Authorizations*, 105 FERC ¶ 61,218 at P 43.

150. As discussed below, we find that Respondents, individually and together, knowingly and intentionally participated in a manipulative scheme to place uneconomic virtual trades to suppress the day-ahead LMP at New Melones for the purpose of profiting on their CRR positions, thereby harming the CAISO market and other market participants. This evidence satisfies the scienter element by showing that Respondents: (1) traded virtuals at New Melones in a consistently uneconomic manner with knowledge that they were losing money on that trading; (2) traded virtuals in ways that differed from their virtual trading at other locations; and (3) understood that their virtual trading at New Melones was setting or depressing the LMP at New Melones and that their CRRs benefited from a lower LMP at New Melones.

151. First, Respondents engaged in virtual trading in a consistently uneconomic manner with knowledge that they were losing money on that trading. As described above, during the Manipulation Period, Respondents consistently lost money on their \$0 or negatively priced virtual supply offers at New Melones despite receiving feedback from daily reports that such offers were consistently unprofitable.³⁰² We found this factor relevant to our finding of a manipulative scheme and also find it relevant to our finding that Respondents had the requisite scienter. Further, IM communications confirm that Respondents were aware of their virtual trading losses at New Melones and discussed them with each other.³⁰³ That Respondents considered stopping the strategy is only relevant to our finding of scienter to the extent it confirms Respondents' knowledge that the virtual trading losses existed and were substantial. However, we reject Respondents' argument that Rosenberg's consideration of whether to continue the strategy demonstrates that Respondents were focused on their losses and thus did not possess the requisite scienter. Ultimately, Respondents did decide to continue the virtual trading strategy until the end of the month notwithstanding the losses.

152. Respondents' arguments as to why they engaged in consistently uneconomic virtual supply offers do not convince us that they were acting without the requisite scienter. As described above, we reject Respondents' claims that their unprofitable virtual trading was based on their expectation of an imminent large-scale hydro event, finding that it is implausible and not credible. We also reject Respondents' claims that the CAISO market design and software flaws are responsible for Respondents' unprofitable trading. Without any credible reason for continuing such a strategy that was so obviously unprofitable, we are left to draw the only plausible conclusion: ETRACOM endured its losses on its virtual trading because it expected to—and actually did—profit from the resulting gains to its CRR position.

³⁰² See Tr. 88:13-17, 184:4-185:13 (Rosenberg).

³⁰³ See, e.g., IM from Mike Davis (5/20/2011 7:33:20 AM) (ETR01509-11).

153. We also find relevant to our finding of intent that Respondents' virtual trading at New Melones during the Manipulation Period differed significantly from their other virtual trading at other locations during May 2011. Although ETRACOM placed negative supply offers at 17 other nodes that month, the characteristics of their trading in those locations differed from their trading at New Melones. At the other 17 locations, ETRACOM traded throughout the month intermittently, whereas at New Melones, ETRACOM began trading mid-month and then submitted virtual supply offers 24 hours a day. Additionally, at the end of May, ETRACOM did not trade in on-peak hours at the 17 other nodes like it did at New Melones. Finally, at the beginning of June, ETRACOM continued to bid its virtuals at the other 17 nodes, whereas at New Melones, ETRACOM abruptly stopped its virtual trading at the end of May.³⁰⁴ We also find that Respondents' net virtual and CRR positions at New Melones differed from the other 164 locations where ETRACOM had either virtual or CRR positions during May 2011.³⁰⁵

154. We disagree with Respondents' assertions that their trading at New Melones and at other nodes in June 2011 establishes legitimate intent for ETRACOM's virtual trading at New Melones in May 2011. As noted above, Respondents' trading at other locations during June 2011 was significantly different from its trading at New Melones in May 2011 and does not indicate an attempt to "move[] the [hydro] strategy to a set of six nodes upriver . . ."³⁰⁶ In addition, Respondents' trading activity began over the course of

³⁰⁴ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, *Etracom_May_2011_Virtuals-ALL LOCATIONS.pdf*.

³⁰⁵ See app. As described in *supra* note 222, the Appendix compares ETRACOM's net virtual and CRR positions at all locations where ETRACOM had either virtual or CRR positions during May 2011, as marked by the red vertical lines. As the Appendix demonstrates, ETRACOM's virtual trading at New Melones in May 2011, which appears on page 67, is distinct from its trading at other locations because it is the only location where ETRACOM consistently traded its virtual positions (in blue) in the same direction as its CRR positions (in gray) in almost every hour for an extended period during the month. While some other nodes (e.g., "CRAGVIEW_1_GN001" (page 19), "MALIN_5_N101" (page 62), "MOENKOPI_5_N101" (page 90), and "PALOVRDE_ASR-APND" (page 90)) show virtual positions in the same direction as a CRR position, the virtual positions are not present in every hour for an extended period during the month. Also in stark contrast to ETRACOM's trading at New Melones, the virtual positions at these nodes were cumulatively profitable over the course of the month. See ETR00001 (DR7).csv.

³⁰⁶ Answer at 54.

June 2011 rather than immediately, indicating that it was not driven by an expectation of an imminent hydro event, and lasted over the course of several months rather than the 18 day strategy at New Melones. ETRACOM's trading at the other nodes also appeared to be sensitive to losses. Unlike ETRACOM's trading at New Melones, which sustained consistent and significant losses, the day-ahead and real-time price signals before ETRACOM began submitting its virtual offers at the other locations suggested that offering virtual supply could be profitable even without a historical hydro event, thus justifying ETRACOM's choice of these particular nodes for its trading strategy.³⁰⁷

155. Finally, we find that Respondents' uneconomic virtual trading strategy at New Melones coincided with the profitability of its CRRs, further demonstrating the manipulative intent of their trading strategy. Respondents began the virtual trading strategy mid-month, a few days after their CRR positions began to lose money when unexpected export congestion occurred, continued it for the remainder of the month as they profited on their CRRs, and terminated the strategy at the end of the month when their CRR positions for June were significantly smaller.³⁰⁸ Based on the distinct characteristics of Respondents' virtual trading strategy, we conclude that ETRACOM's virtual trading strategy was motivated by their desire to profit on their CRR positions and not by legitimate purposes.

156. We also find that Respondents understood that their virtual trading at New Melones was setting or depressing the LMP at New Melones and that their CRRs benefited from a lower day-ahead LMP at New Melones. Rosenberg tracked the impact of Respondents' virtual trading strategy through a spreadsheet that specifically highlighted the hours in which ETRACOM's offers equaled the LMP.³⁰⁹ Thus, Respondents understood that they were not price-takers and that their virtual trading at New Melones was setting or depressing the LMP at New Melones. We find that such an understanding is sufficient for establishing intent in this case whether or not Respondents understood all of the reasons that their virtual trading set the price and even if Respondents "did not believe its trades singularly caused congestion," as Respondents

³⁰⁷ See OE Staff Supplemental Submission of Non-Public Investigative Materials, Mar. 10, 2016, Etra Jun 2011 virtual bids and scheds CONFIDENTIAL.xlsx; Etr Jul 1-15 virtual bids and scheds CONFIDENTIAL.xlsx; Etra Jul 16-31 2011 virtual bids & scheds CONFIDENTIAL.xlsx.

³⁰⁸ See *supra* Part III.B.2.

³⁰⁹ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETR03140.xlsx; Tr. 139:4-18 (Rosenberg).

assert. As a result, we reject Respondents' arguments that OE Staff circularly proved intent by assuming guilt. We also find that, despite Respondents' assertions, it was not only plausible but likely that ETRACOM formed an expectation that its 1-5 MW virtual supply offers could set the LMP at New Melones notwithstanding the line's 384 MW capacity import limit and 15 MW export limit at the time they employed their manipulative virtual trading strategy.

157. We reject Respondents' arguments that their June 2011 virtual demand bids at New Melones demonstrate that they did not understand the relationship between their virtual trading and CRR positions in May 2011. We find that Respondents knew that their CRR positions sourced at New Melones benefited from a lower day-ahead LMP at New Melones,³¹⁰ and were monitoring the profitability of those CRR positions frequently.³¹¹ ETRACOM's CRR positions sourced at New Melones in June were significantly smaller than in May,³¹² which reduced ETRACOM's incentive to engage in manipulative virtual trading to drive down the New Melones day-ahead LMP. Thus, the fact that ETRACOM submitted virtual demand bids in June, many of which were negative and 95 percent of which did not even clear,³¹³ in no way negates or changes our finding that ETRACOM understood the relationship between their virtual trading and CRR positions in May.

158. We also reject Respondents' arguments that their CRR revenues at New Melones during the second half of May 2011 were "not extraordinary" and thus Respondents did not connect their virtual trading behavior to their CRR revenues. New Melones was responsible for approximately 97% of all of ETRACOM's monthly CRR portfolio profits in May 2011, as opposed to just 25% of the portfolio's profits in April.³¹⁴ Such profits

³¹⁰ Tr. 140:1-2 (Rosenberg); *see* Email from Michael Rosenberg to AK, Joseph Bryngelson and Mike W. Davis (3/10/2011 3:04 PM) (ETR01284).

³¹¹ Tr. 111:17-21 (Rosenberg); *see* OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, ETR00706 (Sheet 5 Tab).

³¹² ETRACOM company data – New Melones Only.xlsx (CRR Tab).

³¹³ OE Staff Supplemental Submission of Non-Public Investigative Materials, Mar. 10, 2016, at Etra June 2011 virtual bids and scheds CONFIDENTIAL.xlsx.

³¹⁴ OE Staff Submission of Non-Public Investigative Materials, Dec. 21, 2015, at Staff Work Product – Cited Spreadsheets and Other Material, Etracom_CRR_profit_by_contract_Jan-July2011.xls (Jan-July 2011 Tab).

are hardly insignificant. Thus, based on all of the evidence, we conclude that Respondents intended their virtual trading to suppress the day-ahead LMP at New Melones to the benefit of their CRR positions.

c. In Connection with a Jurisdictional Transaction

159. The third element of establishing a violation under FPA section 222 and the Commission's Anti-Manipulation Rule is determining whether the conduct in question was "in connection with" a transaction subject to the Commission's jurisdiction.³¹⁵

160. Respondents do not contest that the conduct in question was "in connection with" transactions subject to the Commission's jurisdiction. We find that the Commission has jurisdiction over Respondents' virtual trading during the Manipulation Period. Section 201(b)(1) of the FPA confers jurisdiction on the Commission over "the transmission of electric energy in interstate commerce and . . . the sale of electric energy at wholesale in interstate commerce"³¹⁶ The Commission also has a responsibility to ensure that rates and charges for transmission and wholesale power sales are not unduly discriminatory or preferential.³¹⁷ Moreover, the Court of Appeals for the District of Columbia Circuit has affirmed in recent years that the Commission has "authority [under the FPA] to regulate the activity of traders who participate in energy markets."³¹⁸

161. The conduct in question was Respondents' virtual trades within CAISO's wholesale electric energy market, and the effect of those virtual supply offers on Respondents' CRR positions. The virtual trades and CRR positions at issue were implemented under CAISO's Commission-approved tariff. By virtue of engaging in virtual transactions and entering into CRR positions, both of which operated under a

³¹⁵ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 49; 16 U.S.C. § 824v(a) (2012); 18 C.F.R. § 1c.2 (2015).

³¹⁶ 16 U.S.C. § 824(b)(1) (2012).

³¹⁷ Section 205(a) of the FPA charges the Commission with ensuring that rates and charges for jurisdictional sales by public utilities and "all rules and regulations affecting or pertaining to such rates or charges are just and reasonable." *Id.* § 824d(a). Section 206(a) gives the Commission authority over the rates and charges by public utilities for jurisdictional sales as well as "any rule, regulation, practice or contract affecting such rate[s] [or] charge[s]" to make sure they are just and reasonable and not unduly discriminatory or preferential. *Id.* § 824e(a).

³¹⁸ *Kourouma v. FERC*, 723 F.3d 274, 276 (D.C. Cir. 2013).

Commission-approved tariff within CAISO, a Commission-regulated independent system operator, we find the virtual transactions at issue are under our jurisdictional purview.

162. Also, virtual transactions are integral to the operation and settlement of Commission-jurisdictional wholesale markets.³¹⁹ In the context of CAISO's convergence bidding (virtual bidding), the Commission explained that:

[t]o participate in virtual bidding, a participant is required to submit virtual bids in the same way and at the same time as all other day-ahead bids. Virtual bids are cleared along with those other bids, and can affect the outcomes of the settlement of the day-ahead physical market. Therefore, virtual bids can be seen as a substitute for bids for physical power.³²⁰

163. The Commission has explained that it has jurisdiction over practices that affect rates, stating: "since convergence bidding affects the market clearing price for wholesale power by determining, in conjunction with other bids, the unit that sets the market clearing price, the Commission has statutory authority over this type of bidding to ensure that the rates it produces are just and reasonable."³²¹ Therefore, we conclude that we have jurisdiction over Respondents' virtual product trades conducted during the Manipulation Period.

4. Remedies and Sanctions

164. Having found that Respondents violated FPA section 222 and section 1c.2 of our regulations, we now must determine the appropriate remedies. OE Staff recommends civil penalties be assessed against both Respondents and that ETRACOM be required to disgorge its unjust profits. After assessing the legal and factual issues, including those raised by Respondents, and taking into consideration the seriousness of the violations and the efforts to remedy them in a timely manner, we agree with OE Staff's recommendation to assess penalties and require disgorgement.³²²

³¹⁹ *Cal. Indep. Sys. Operator Corp.*, 108 FERC ¶ 61,254, at P 74 (2004).

³²⁰ *California ISO*, 108 FERC ¶ 61,254 at P 74.

³²¹ *Cal. Indep. Sys. Operator Corp.*, 110 FERC ¶ 61,041, at P 31 (2005); *see also FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760 (2016) (the Commission has jurisdiction over practices affecting interstate markets).

³²² 16 U.S.C. § 825o-1(b) (2012).

165. Section 222 provides that “[i]t shall be unlawful for any entity . . . directly or indirectly, to use or employ, in connection with the purchase or sale of electric energy . . . subject to the jurisdiction of the Commission, any manipulative or deceptive device or contrivance”³²³ Pursuant to FPA section 316A(b), the Commission may assess a civil penalty of up to \$1 million per day, per violation against any person who violates Part II of the FPA (including section 222) or any rule thereunder.³²⁴ In determining the appropriate penalty amount, FPA section 316A(b) requires the Commission to consider “the seriousness of the violation and the efforts of such person to remedy the violation in a timely manner.”³²⁵ The Commission has adopted penalty guidelines to provide a civil penalty range for violations by companies, such as ETRACOM.³²⁶ The Commission also informs its analysis with the Policy Statement on Enforcement.³²⁷

166. The Penalty Guidelines use two sets of factors to establish penalties. First, the Penalty Guidelines calculate a Base Penalty amount based on factors specifically tailored to the seriousness of the violation, including the harm caused by the violation. Second, the Penalty Guidelines consider several culpability factors, including efforts to remedy violations, which lead to minimum and maximum multipliers of the Base Penalty amount. The Penalty Guidelines then combine these sets of factors to arrive at the penalty range. After establishing a penalty range, the Commission examines the specific facts of each case to determine where the penalty should fall, and in appropriate cases, whether a penalty should be outside the range.

167. The Penalty Guidelines do not apply to individuals such as Rosenberg. Instead, we determine penalties for individuals based on the facts and circumstances as applied to five factors, pursuant to section 316A of the FPA: (1) seriousness of the violation;

³²³ 16 U.S.C. § 824v (2012).

³²⁴ 16 U.S.C. § 825o-1(b).

³²⁵ *Id.*

³²⁶ See FERC Penalty Guidelines § 1C2.5. See generally *Enforcement of Statutes, Orders, Rules, and Regulations*, 132 FERC ¶ 61,216 (2010) (Revised Penalty Guidelines Order); *Enforcement of Statutes, Orders, Rules, and Regulations*, 130 FERC ¶ 61,220 (2010) (Initial Penalty Guidelines Order). The FERC Penalty Guidelines are appended to the Revised Penalty Guidelines Order.

³²⁷ *Enforcement of Statutes, Orders, Rules, and Regulations*, 123 FERC ¶ 61,156 (2008) (*Revised Policy Statement on Enforcement*); *Enforcement of Statutes, Orders, Rules and Regulations*, 113 FERC ¶ 61,068 (2005).

(2) commitment to compliance; (3) self-reporting; (4) cooperation; and (5) reliance on OE Staff guidance.³²⁸

i. Assessment of Civil Penalty Against ETRACOM

(a) ETRACOM's Answer

168. Respondents raise several specific arguments in their Answer directed at OE Staff's market harm calculations, but do not otherwise challenge OE Staff's penalty calculation. First, Respondents argue that OE Staff's methodology fails to account for market design flaws and "software pricing/modeling errors and their impact on price formation," which Respondents allege explain all of the market harm.³²⁹ Respondents also separately cite these alleged pricing and modeling errors as a basis for the Commission to exercise its discretion and depart from the Penalty Guidelines down to zero.³³⁰

169. Second, Respondents argue that OE Staff's market harm calculation does not account for WAPA's market activity, which further incentivized ETRACOM's virtual supply bids at New Melones.³³¹ Respondents allege that WAPA's power exports on May 8 through May 13 caused day-ahead prices to be high, thereby causing ETRACOM to place its bids during off-peak hours. For this reason, Respondents argue that all off-peak hours should be eliminated from any market harm analysis.³³²

170. Third, Respondents argue that OE Staff should have removed all hours from its calculations where ETRACOM was not the marginal bidder.³³³ Respondents indicate that prices in 43.5% of the hours from May 16-31 were mostly "set by negative virtual

³²⁸ See *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at PP 54-71; *City Power*, 152 FERC ¶ 61,012 at P 229; *Maxim Power*, 151 FERC ¶ 61,094 at P 107.

³²⁹ Answer at 79.

³³⁰ *Id.* at 88.

³³¹ *Id.* at 79.

³³² Answer at 80.

³³³ *Id.* at 80-81.

demand bids . . . ,” which ETRACOM could not have known at the time.³³⁴ Respondents assert that if all of ETRACOM’s bids during off peak hours are removed, as well as those additional hours where ETRACOM did not set the marginal price (to prevent double-counting), that the disgorgement figure should be reduced to \$121,426, and market harm to \$388,007.³³⁵

171. Fourth, Respondents argue that staff’s calculations need to be verified by rerunning CAISO’s network model for New Melones, with ETRACOM’s offers removed from the market.³³⁶ Respondents note that the market rerun would also need to compensate for flaws that were allegedly endemic to the market. Respondents state that the flaws included software pricing issues that inhibited valid price discovery, and “the fact that the intertie’s ‘fully encumbered’ status reduced the market’s size from [New Melones’] apparent 384 MW capacity to effectively 0 MW.”³³⁷

(b) OE Staff Report and Reply

172. OE Staff recommends a civil penalty for ETRACOM of \$2.4 million.³³⁸ Applying section 2B1.1 of the Penalty Guidelines, OE Staff based its recommendation on a market harm figure of \$1,514,207, occurring over a period of more than 10 days.³³⁹ OE Staff also considered that ETRACOM cooperated with the investigation.³⁴⁰

173. OE Staff determined its market harm figure based on the money it contends was overpaid to all New Melones CRR source holders for the period from May 14 through May 31, 2011 as a result of ETRACOM’s manipulative conduct.³⁴¹ To arrive at this figure, OE Staff first determined that \$2,122,947 was paid out to all CRR source holders. Then, using profits for the period May 8 through 13 as a reasonable measure of

³³⁴ *Id.* at 80.

³³⁵ *Id.* at 81.

³³⁶ *Id.*

³³⁷ *Id.*

³³⁸ Staff Report at 1.

³³⁹ Staff Report at 40.

³⁴⁰ *Id.*

³⁴¹ Staff Report at 39.

what profits would have been absent ETRACOM's manipulative conduct, OE Staff estimated that legitimate profits for the remainder of the month would have been \$608,740. OE Staff then subtracted this amount from the overall profits for the period, arriving at \$1,514,207.³⁴²

(c) **Commission Determination**

(1) **Seriousness of the Violation**

174. We discuss the factors in the Penalty Guidelines and Policy Statements on Enforcement that are relevant to the seriousness of ETRACOM's violation below. Because ETRACOM focuses solely on OE Staff's market harm calculation, we in turn only address that aspect of OE Staff's penalty calculation. After considering the harm to the markets, and all of the other relevant factors outlined in the Penalty Guidelines, we agree that ETRACOM's violation was serious and warrants imposing a \$2,400,000 civil penalty. ETRACOM's manipulative scheme operated as a fraud and deceit on other market participants and on CAISO. By creating import congestion and driving down the day-ahead LMP at New Melones, ETRACOM injected false information into the marketplace that is critical to rational economic decision-making.

175. The Penalty Guidelines measure a violation's seriousness by examining the gain or loss caused.³⁴³ Commentary Application Note 2A to Penalty Guidelines § 2B1.1 specifies that "loss" is the greater of the "actual loss or intended loss." Commentary Application Note 2A then defines "actual loss" as "the reasonably foreseeable pecuniary harm that resulted from the violation." We cannot agree with Respondents' view that ETRACOM's actions caused no market harm. Here, ETRACOM caused harm by increasing congestion levels at New Melones and distorting market prices. As discussed above, Respondents' manipulation resulted in the market overpaying all New Melones CRR source holders, including ETRACOM, \$1,514,207 between May 14 and 31, 2011. This overpayment was funded by New Melones CRR sink holders and revenue inadequacy, and was reasonably foreseeable.

176. ETRACOM's argument that no harm was caused by its behavior is, essentially, an attack on the mechanisms allegedly used to establish prices at New Melones. The fact that a market may not be functioning optimally, or in the manner preferred by

³⁴² *Id.* n.193 (citing Etracom- Market Harm.xls (Market Harm Summary Tab, Columns F, K, and L, Row 6)).

³⁴³ FERC Penalty Guidelines § 2B1.1(b)(1).

Respondents, does not negate the harm ETRACOM caused. Markets that are not functioning optimally may still be manipulated, and therefore harmed.³⁴⁴

177. We also find that OE Staff's determination of harm is a reasonable calculation of the harm caused by Respondents' behavior.³⁴⁵ OE Staff bases its harm calculation on the period from May 8 to May 13, prior to ETRACOM engaging in the manipulative scheme. As also discussed below in relation to the proper disgorgement amount, we find OE Staff's method to be reasonable because market conditions during this period were similar to market conditions during the Manipulation Period, but were not influenced by the manipulation.

³⁴⁴ See *supra*, Part III.B.3.a.iii.(d)(2).

³⁴⁵ FERC Penalty Guidelines § 2B1.1, Commentary Application Note 2(C) ("The Commission need only make a reasonable estimate of the loss."); Revised Penalty Guidelines Order, 132 FERC ¶ 61,216 at P 206 ("The Commission cannot predict how it will measure loss in every case. There may be circumstances when precise calculations cannot be made. Moreover, the availability of evidence will likely vary from case to case. In certain situations, the Commission may need to rely on a reasonable estimate of loss."). Cf. *SEC v. First City Fin. Corp., Ltd.*, 890 F.2d 1215, 1231 (D.C. Cir. 1989)

If exact information were obtainable at negligible cost, we would not hesitate to impose upon the government a strict burden to produce that data to measure the precise amount of the ill-gotten gains. Unfortunately, we encounter imprecision and imperfect information. Despite sophisticated econometric modelling, predicting stock market responses to alternative variables is, as the district court found, at best speculative. Rules for calculating disgorgement must recognize that separating legal from illegal profits exactly may at times be a near-impossible task.

Id.; *SEC v. Calvo*, 378 F.3d 1211, 1217 n.10 (11th Cir. 2004) ("The SEC is entitled to disgorgement upon producing a reasonable approximation of a defendant's ill-gotten gains.") (citing *First City Fin. Corp., Ltd.*, 890 F.2d at 1231-32).

(2) **Aggravating and Mitigating Culpability Factors**

178. The Penalty Guidelines rely on minimum and maximum multipliers of the Base Penalty to arrive at a penalty range.³⁴⁶ The multipliers are based on a culpability score, which is initially fixed at 5 points.³⁴⁷ The culpability score may be adjusted upwards or downwards based on several aggravating and mitigating culpability factors. OE Staff states that ETRACOM cooperated with OE Staff's investigation,³⁴⁸ and we therefore agree with OE Staff's subtraction of 1 point from the culpability score.

(3) **Appropriate Penalty**

179. Based on the foregoing factors, the Commission finds that there is a need to discourage and deter the fraudulent trading conduct at issue in this matter. We find that OE Staff's recommended civil penalty is fair and reasonable under the circumstances. We will therefore assess a civil penalty of \$2,400,000 against ETRACOM.

ii. **Assessment of Civil Penalty Against Rosenberg**

180. The Commission determines penalties "for natural persons based on the facts and circumstances of the violation but will look to [the Penalty Guidelines] for guidance in setting those penalties."³⁴⁹ Consistent with the Revised Policy Statement on Enforcement, we determine civil penalties for individuals based on the facts and circumstances as applied to five factors: (1) seriousness of the violation; (2) commitment to compliance; (3) self-reporting; (4) cooperation; and (5) reliance on OE Staff guidance.³⁵⁰

³⁴⁶ FERC Penalty Guidelines § 1C2.4.

³⁴⁷ *Id.* § 1C2.3(a).

³⁴⁸ Staff Report at 40.

³⁴⁹ FERC Penalty Guidelines § 1A1.1, Commentary Application Note 1.

³⁵⁰ *See Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at PP 54-71; *City Power*, 152 FERC ¶ 61,012 at P 229; *Maxim Power*, 151 FERC ¶ 61,094 at P 107.

(a) **Rosenberg's Answer**

181. Rosenberg raises two arguments as to why the OE Staff's proposed civil penalties for him are inappropriate. First, Rosenberg argues that he is not liable for civil penalties as a matter of law, because the word "entity" as used in section 222 of the Federal Power Act³⁵¹ only applies to organizations, not natural persons.³⁵² Therefore, he claims that he may not be penalized for his conduct.

182. Second, Rosenberg argues that it is fundamentally unfair to assess separate civil penalties against both himself and ETRACOM. Because Rosenberg owns 75 percent of ETRACOM, he argues that individual civil penalties effectively penalize him twice for the same conduct.³⁵³ Rosenberg points out that OE Staff's position may have more appeal in the case of a large company with multiple layers of management and diffuse individual responsibility. In such a case, the Commission may need to send a message to the organization as a whole.³⁵⁴ However, he claims that this reasoning breaks down in the context of a small, closely held business organization, where the individual in question is also the controlling owner, primary corporate manager, and primary trader whose conduct gave rise to liability.³⁵⁵

(b) **OE Staff Report and Reply**

183. OE Staff recommends a civil penalty of \$100,000 against Rosenberg.³⁵⁶ In recommending this penalty, OE Staff states that the penalty is appropriate "given Rosenberg's primary responsibility for developing and implementing ETRACOM's manipulative scheme and the seriousness of the violation."³⁵⁷ OE Staff also adds in its

³⁵¹ 16 U.S.C. § 824v (2012).

³⁵² Answer at 87.

³⁵³ *Id.*

³⁵⁴ *Id.*

³⁵⁵ *Id.*

³⁵⁶ *Id.*

³⁵⁷ Staff Report at 40.

Reply that its recommended penalty already accounts for the fact that Rosenberg is the majority owner of ETRACOM.³⁵⁸

(c) **Commission Determination**

184. As an initial matter, Rosenberg is incorrect that the Commission lacks statutory authority to penalize individuals for market manipulation. Section 1c.2 of the Commission's regulations makes it unlawful for "any entity" to engage in manipulative conduct in connection with a jurisdictional transaction.³⁵⁹ The Commission has found, in Order 670 and in numerous subsequent cases interpreting the phrase, that the term "any entity" includes natural persons.³⁶⁰

185. We also conclude that assessing civil penalties against both ETRACOM and Rosenberg is proper, notwithstanding Rosenberg's 75 percent equity position in the firm.³⁶¹ The Commission has specifically held that both a business entity and an individual can be held liable for manipulative conduct, even where the individual owns a portion of the business entity.³⁶² Rosenberg fails to cite any authority compelling a different result.

186. Rosenberg's assertion that policy considerations should limit his liability as an owner of ETRACOM are misplaced. Companies can manipulate markets only through the conduct of individuals, making it imperative that individuals be held accountable. Rosenberg and ETRACOM have separate legal existence and separate legal interests, and it is appropriate to penalize them separately for their separate conduct. Employees,

³⁵⁸ Staff Reply at 34.

³⁵⁹ 18 C.F.R. § 1c.2 (2015); *see also* 16 U.S.C. § 824v(a) (2012) ("It shall be unlawful for any entity . . . directly or indirectly, to use or employ, in connection with the purchase or sale of electric energy . . .").

³⁶⁰ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 18. *See City Power*, 152 FERC ¶ 61,012 at P 265; *Maxim Power*, 151 FERC ¶ 61,094 at P 66. Recent district court enforcement rulings have confirmed our position. *See FERC v. Silkman*, ---F. Supp. 3d---, Nos. 13-13054-DPW, 13-13056-DPW, 2016 WL 1430009 (D. Mass. Apr. 11, 2016); *FERC v. Barclays Bank PLC*, 105 F. Supp. 3d 1121, 1145-46 (E.D. Cal. 2015).

³⁶¹ *Cf. Silkman*, 144 FERC ¶ 61,164 at P 93.

³⁶² *Id.*; *see also City Power*, 152 FERC ¶ 61,012.

whether or not they have an ownership interest in their employer, cannot engage in manipulative conduct. For all these reasons, we find imposing civil penalties here, against both ETRACOM and Rosenberg, is necessary to deter fraudulent conduct by both businesses and individuals.

187. Turning to the proper penalty amount, as mentioned above, the Revised Policy Statement on Enforcement identifies several factors to consider when analyzing the seriousness of the violation.³⁶³ We discuss these factors below to the extent they are relevant to Rosenberg.

(1) **Seriousness of the Violation**

188. *Harm Caused by the Violation.* Rosenberg's manipulative trades financially harmed CAISO and its market participants by increasing congestion levels at New Melones and distorting market prices. As discussed above, Respondents' manipulation resulted in the market overpaying all New Melones CRR source holders, including ETRACOM, \$1,514,207 between May 14 and 31, 2011. This overpayment was funded by New Melones CRR sink holders and revenue inadequacy, and was reasonably foreseeable. Rosenberg persisted in his scheme as long as he held the benefitting positions, stopping only when the positions naturally expired.

189. *Manipulation, Deceit, Fraud, and Recklessness or Indifference to Results of Actions.* Rosenberg's scheme operated as a fraud and deceit on CAISO. As described above, Rosenberg deceived CAISO into overpaying all New Melones CRR holders, including ETRACOM.

190. *Willful Action or in Concert with Others.* Rosenberg, in his individual capacity, conceived of, designed and implemented the manipulative scheme. Rosenberg then involved other ETRACOM employees as needed in order to carry out the scheme. Moreover, as a founding member and 75 percent owner in ETRACOM, Rosenberg personally profited from the manipulative scheme.

191. *Isolated Instance or Recurring Problem; Systematic and Persistent Wrongdoing and Duration.* Rosenberg executed his manipulative scheme in a careful, deliberate manner over the course of approximately two weeks. As mentioned above, Rosenberg only discontinued the scheme because ETRACOM's CRRs at New Melones expired.

³⁶³ *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at PP 54-71.

(2) **Mitigating Factors Relating to Culpability**

192. *Commitment to Compliance, Self-Reporting, Cooperation, and Reliance on OE Staff Guidance.* Only one factor, cooperation, serves to mitigate Rosenberg's violations. Rosenberg did not self-report the violations and did not seek guidance from OE staff.

193. We find that Rosenberg's manipulative conduct was serious and intentional. Based on our assessment above, the pleadings in the case, and the Staff Report, we find that there is a critical need to discourage and deter unlawful conduct similar to Rosenberg's. We will assess a civil penalty of \$100,000 for Rosenberg's conduct.

iii. **Disgorgement by ETRACOM**

(a) **ETRACOM's Answer**

194. With regard to the proper disgorgement amount, ETRACOM raises the identical arguments it did in regard to market harm. First, ETRACOM argues that OE Staff's disgorgement analysis fails to account for "software pricing/modeling errors and their impact on price formation." Second, ETRACOM argues that day-ahead price signals legitimately incentivized placing virtual supply bids in off-peak hours at New Melones. Third, ETRACOM argues that it "did not set the market price in hours where its bids were inframarginal or did not clear." Lastly, ETRACOM argues that OE Staff's calculations need to be checked against a CAISO market rerun that removes ETRACOM's allegedly manipulative virtual offers. According to ETRACOM's calculations, which remove all its bids placed during off-peak hours, as well its bids that were inframarginal or did not clear, the unjust profits drop from \$315,072 to \$174,336.³⁶⁴

(b) **OE Staff Report and Reply**

195. OE Staff recommends that ETRACOM disgorge \$315,072 plus interest to CAISO to distribute to affected market participants.³⁶⁵ OE Staff arrives at this figure by first determining that ETRACOM's total CRR profits at New Melones between May 14 and 31 were \$517,417. Of that amount, OE Staff contends that \$202,345 was earned from non-manipulative trading. The difference, \$317,072, represents unjust profits that must be disgorged.

³⁶⁴ Answer at 79-80.

³⁶⁵ Staff Report at 39.

(c) **Commission Determination**

196. We find that ETRACOM is required to disgorge all of its profits from the manipulative scheme. It is a long-standing Commission practice to require disgorgement of unjust profits as an equitable remedy for manipulation.³⁶⁶ In cases where pecuniary gain results from a violation, “the Commission enters a disgorgement order for the full amount of the gain plus interest.”³⁶⁷

197. The disgorgement amount “need only be a reasonable approximation of profits causally connected to the violation”³⁶⁸ and we find that OE Staff meets this standard. OE Staff calculated unjust profits at New Melones by subtracting profits from non-manipulative trading from overall profits at New Melones between May 14 and 31, with the resulting figure of \$315,072 representing profits from the manipulative scheme. This is a reasonable approximation of ETRACOM’s profits because staff extrapolated ETRACOM’s profits from May 8 to May 13, when WAPA scheduled 1 MW exports at New Melones, and prior to ETRACOM engaging in the manipulative scheme. Thus, profits during this period were under similar market conditions as the manipulative time period, but were not influenced by the manipulation.

198. We are not persuaded by ETRACOM’s arguments that its methodology is superior. The purpose of disgorgement is to disallow ETRACOM from retaining its ill-gotten gains, not to measure ETRACOM’s trading impact against perfect market conditions. For this reason, it is immaterial that software modeling errors may have separately had their own impact on price, or that a hypothetical market rerun may be more accurate. Similarly, it is irrelevant whether non-manipulative reasons for trading existed at the time, if those were not ETRACOM’s reasons for trading. ETRACOM’s argument that it did not set the price in certain hours, similarly misses the point: its trades still impacted the market.

199. Therefore, in addition to the civil penalties, we direct a disgorgement payment, plus applicable interest, of \$315,072. ETRACOM shall make the disgorgement payment to California’s Low Income Home Energy Assistance Program (LIHEAP), within 60 days of the date of this Order. We require the interest to be calculated in accordance with 18 C.F.R. § 35.19a (2015) from the date ETRACOM received payment of the unjust profits.

³⁶⁶ *Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156 at P 43.

³⁶⁷ FERC Penalty Guidelines § 1B1.1(a).

³⁶⁸ *SEC v. Whittemore*, 659 F.3d 1, 7 (D.C. Cir. 2011) (citation omitted).

200. Given Respondents' election under section 31(d)(3)(A) of the FPA, this Order will not be subject to rehearing.³⁶⁹ If a person elects the procedure under section 31(d)(3) of the FPA, the statute provides for: (i) prompt assessment of a penalty by Commission order; (ii) if the penalty is unpaid within 60 days, the Commission shall institute a proceeding in the appropriate district court seeking an order affirming the assessment of a civil penalty and that court shall have the authority to review *de novo* the law and facts involved; and (iii) the district court shall have the jurisdiction to enforce, modify, or set aside, in whole or in part, such penalty assessment. Following this process, a person can appeal to a United States Court of Appeals within the appropriate time for review of the district court order.³⁷⁰

The Commission orders:

(A) ETRACOM is hereby directed to pay the United States Treasury by wire transfer a civil penalty in the sum of \$2,400,000 within 60 days of the issuance of this order, as discussed in the body of this order. If ETRACOM does not make this civil penalty payment within the stated time period, interest payable to the United States Treasury will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. § 35.19a (2015) from the date that payment is due.

(B) Mr. Rosenberg is hereby directed to pay the United States Treasury by wire transfer a civil penalty in the sum of \$100,000 within 60 days of the issuance of this order, as discussed in the body of this order. If Mr. Rosenberg does not make this civil penalty payment within the stated time period, interest payable to the United States Treasury will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. § 35.19a (2015) from the date that payment is due.

³⁶⁹ See *Process for Assessing Civil Penalties*, 117 FERC ¶ 61,317, at P 5 (2006); see also *Barclays*, 144 FERC ¶ 61,041 at P 152; *Competitive Energy Services, LLC*, 144 FERC ¶ 61,163 at P 104; *Richard Silkman*, 144 FERC ¶ 61,164 at P 96; *Lincoln Paper and Tissue, LLC*, 144 FERC ¶ 61,162 at P 80.

³⁷⁰ 16 U.S.C §823b(d)(3) (2012).

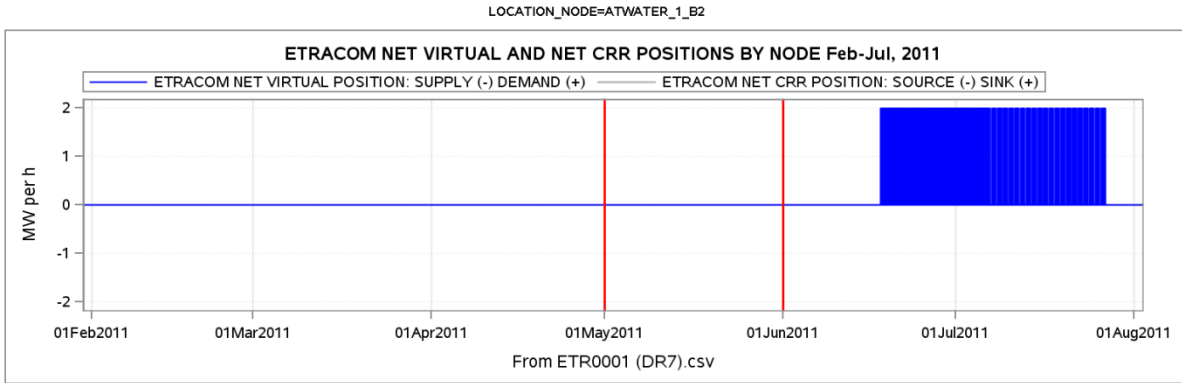
(C) ETRACOM is hereby directed to disgorge \$315,072, plus applicable interest, to California's LIHEAP, within 60 days of the issuance of this order, as discussed in the body of this order.

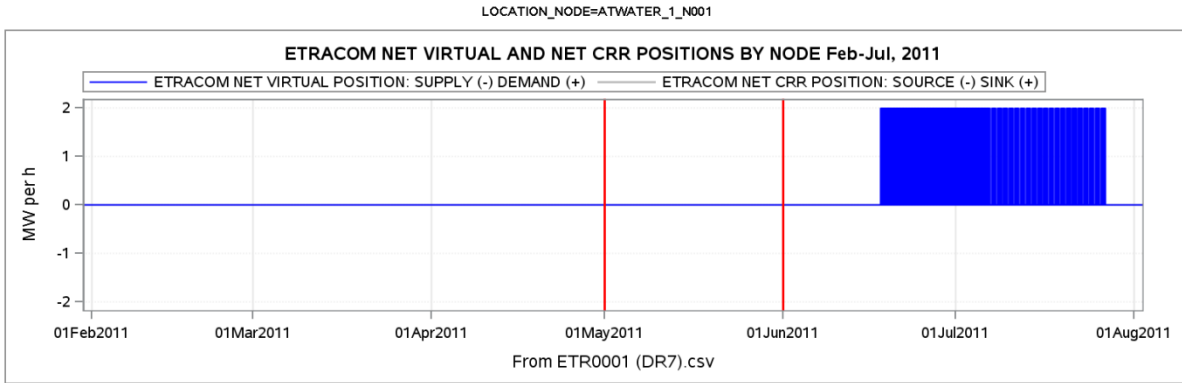
By the Commission. Chairman Bay is not participating.

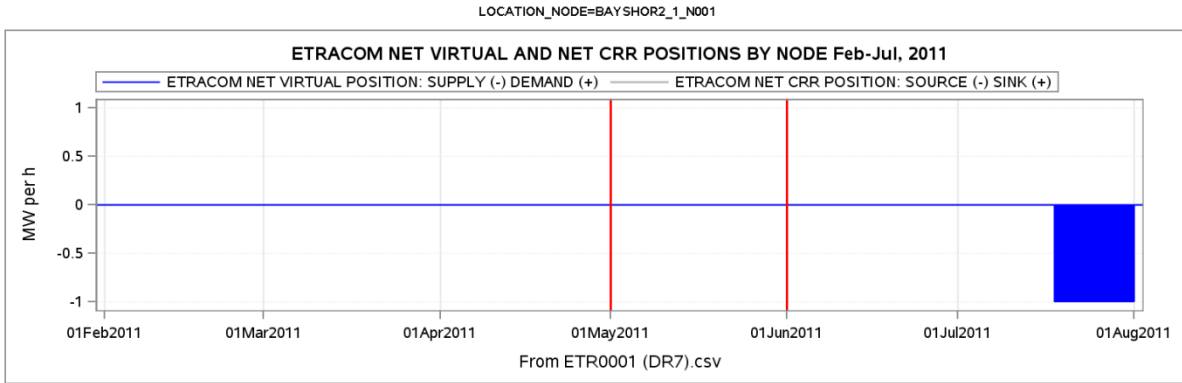
(S E A L)

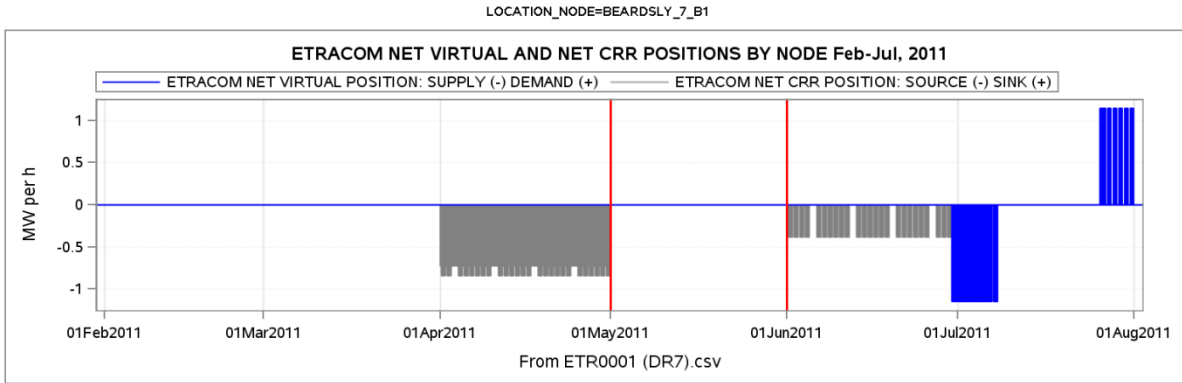
Kimberly D. Bose,
Secretary.

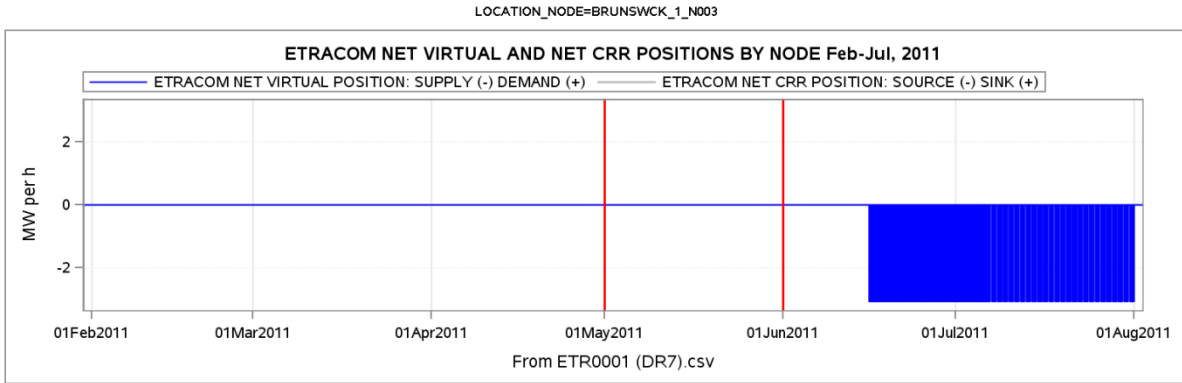
APPENDIX

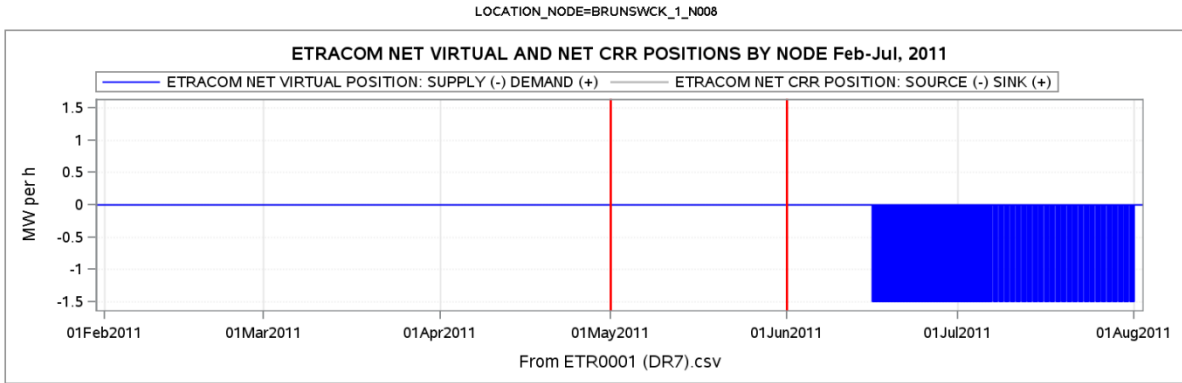


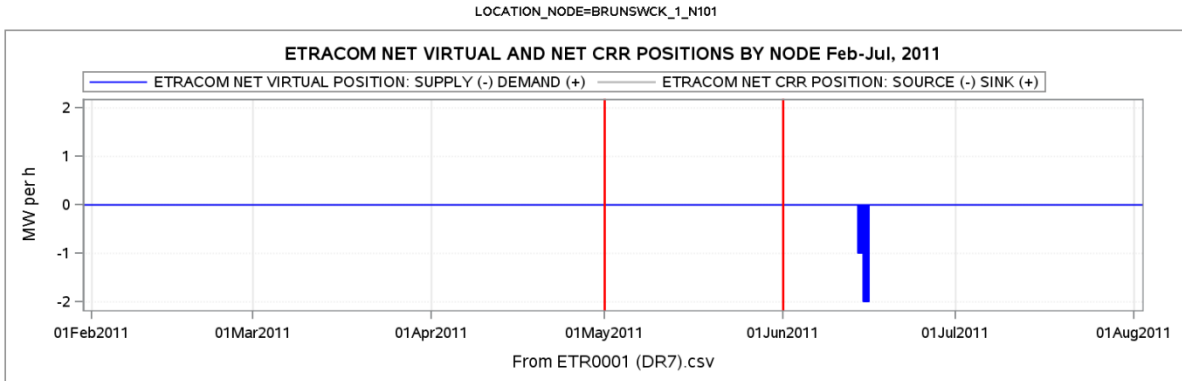


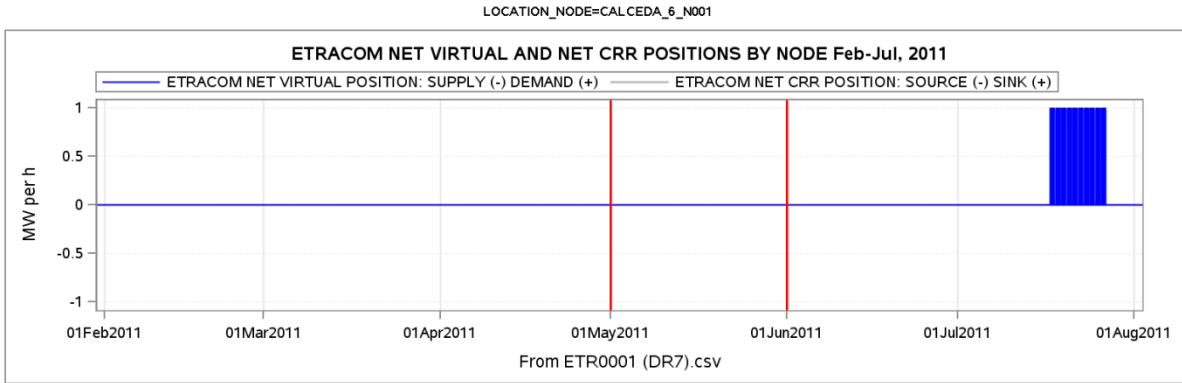


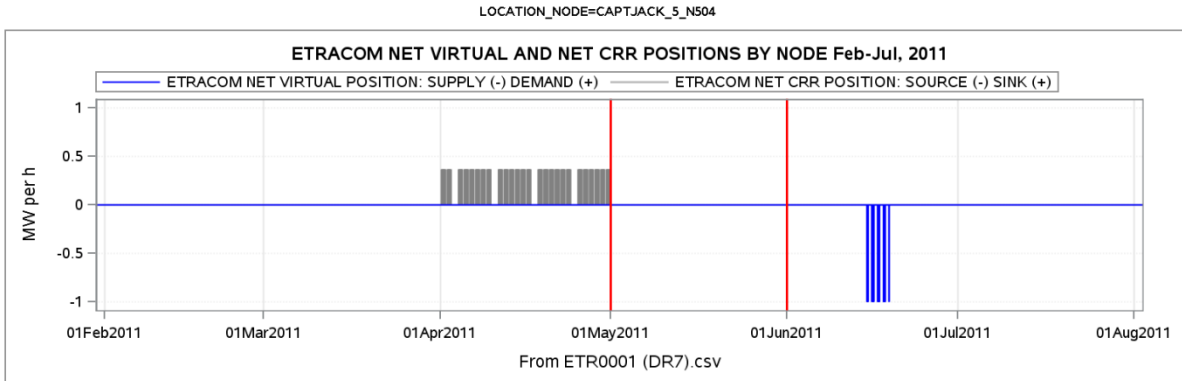


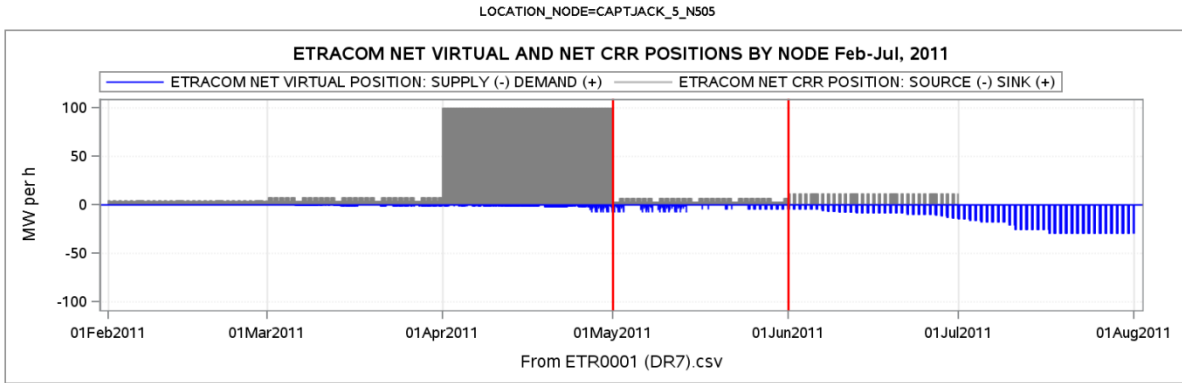


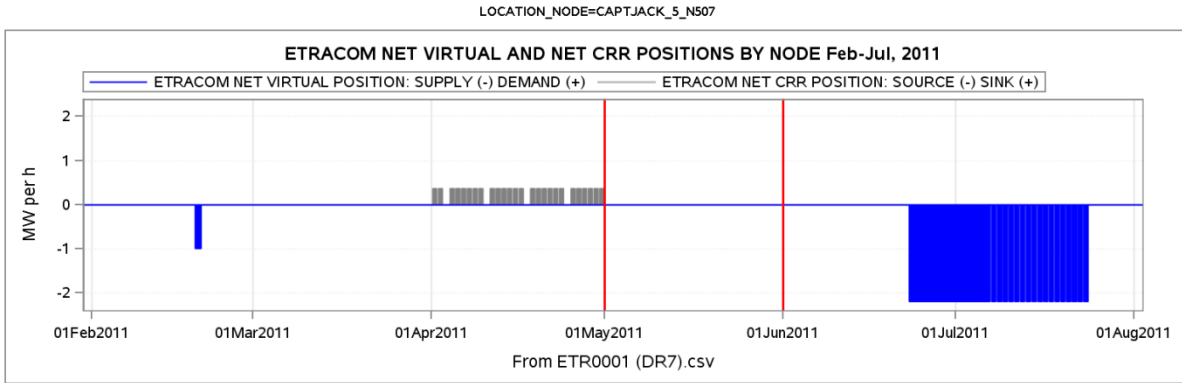


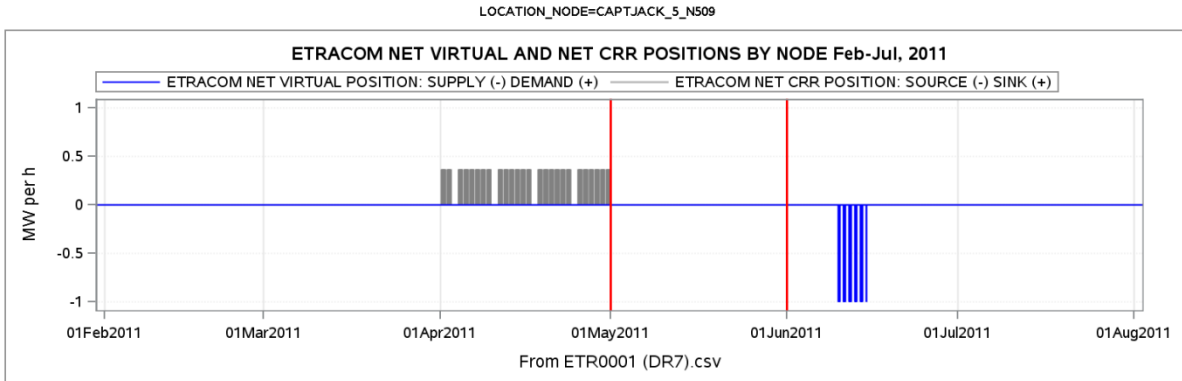


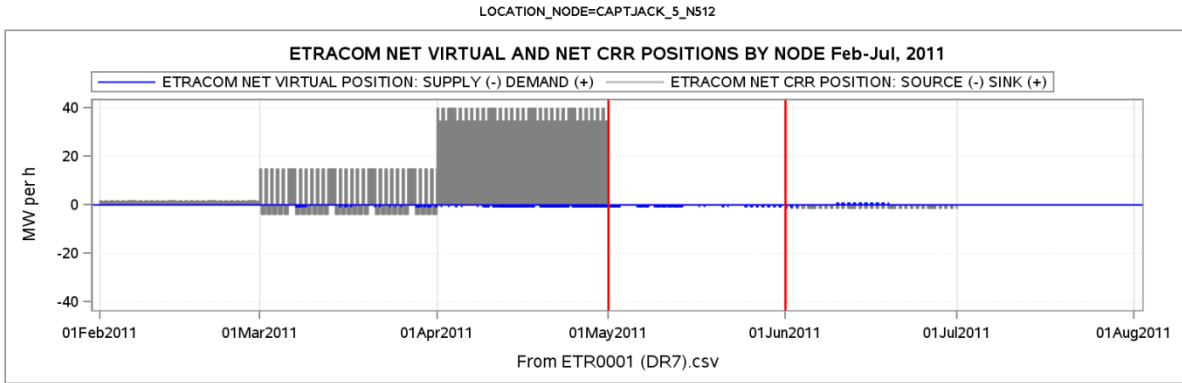


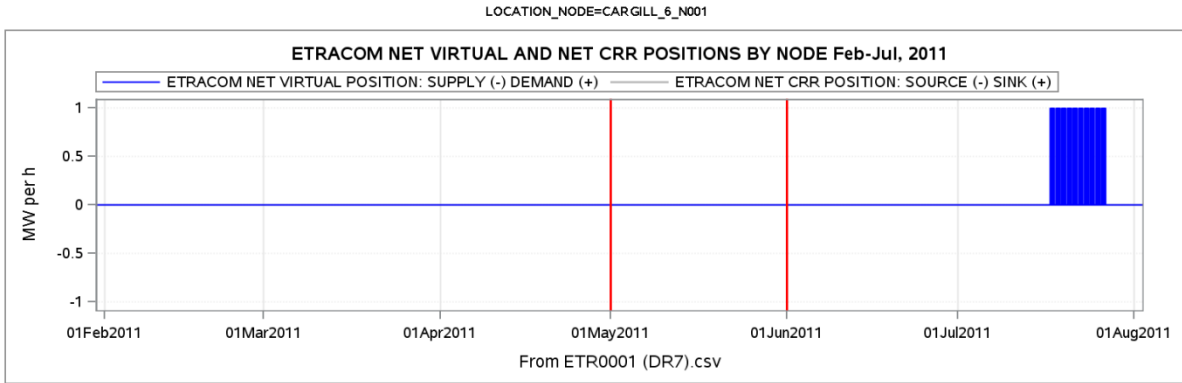


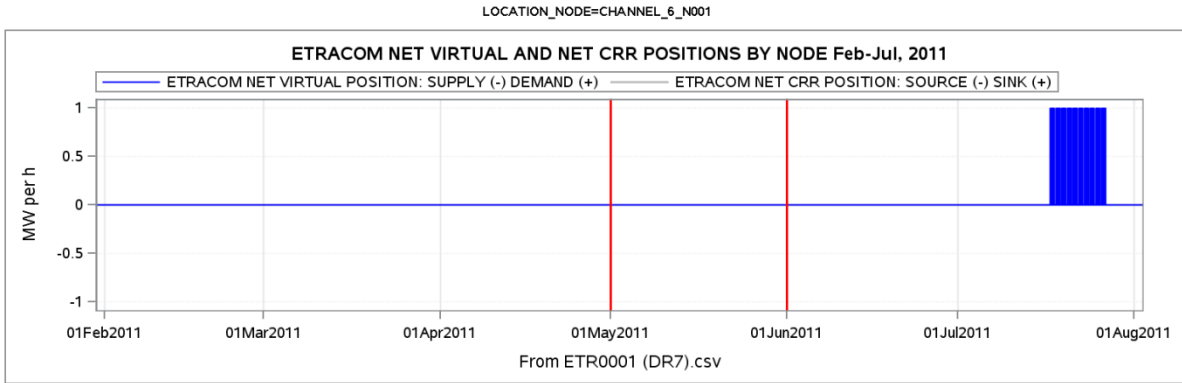


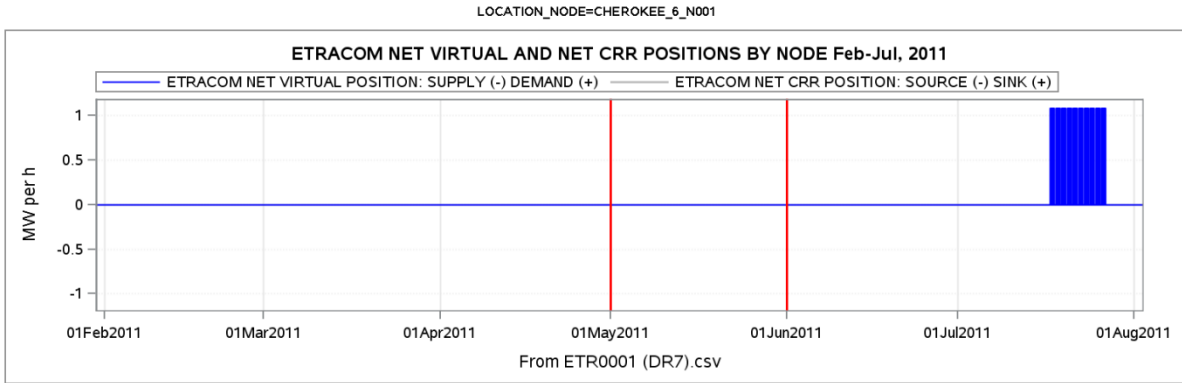


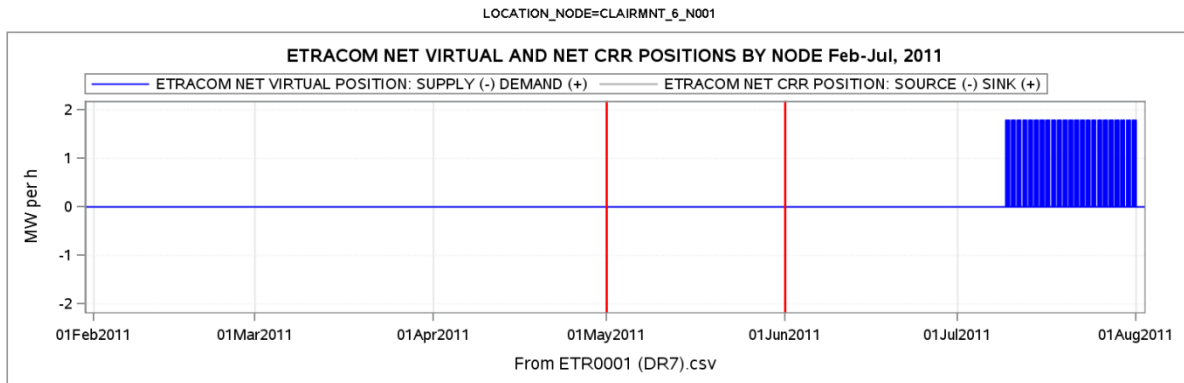


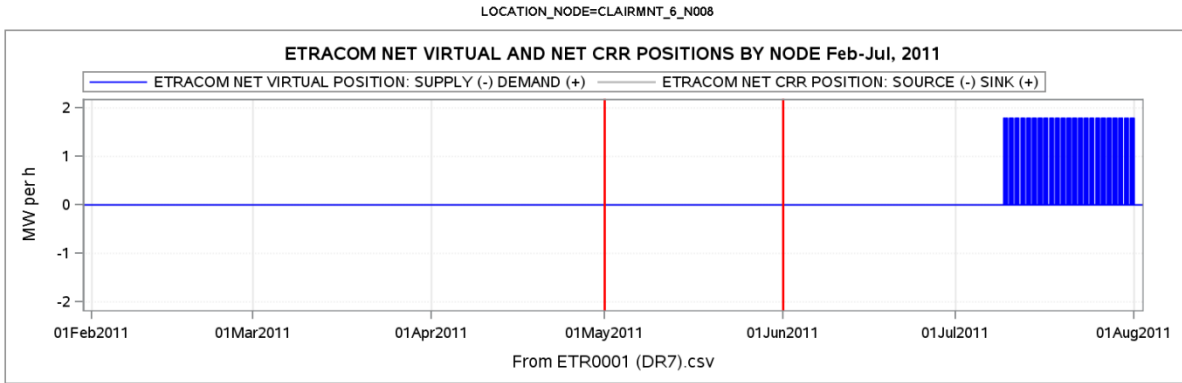


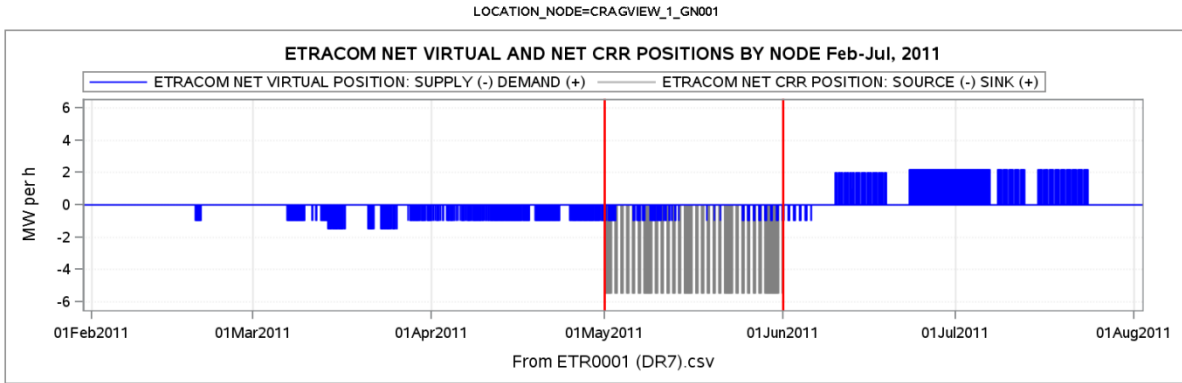


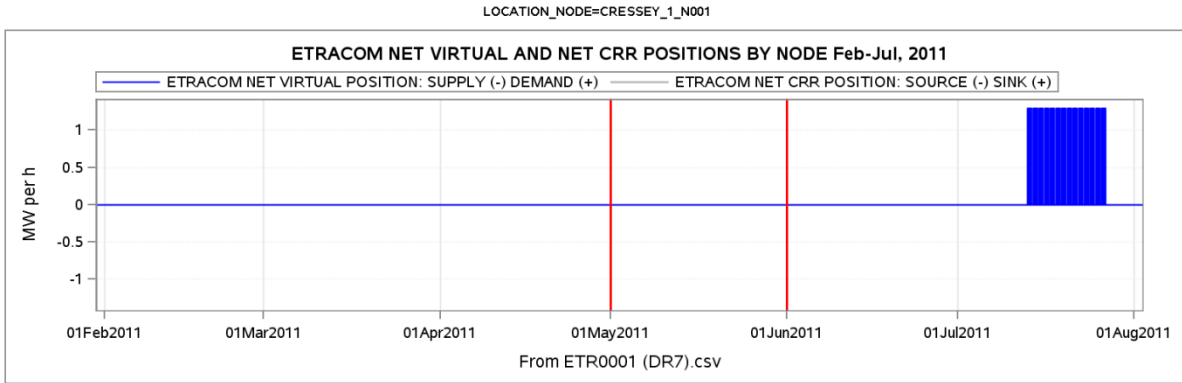


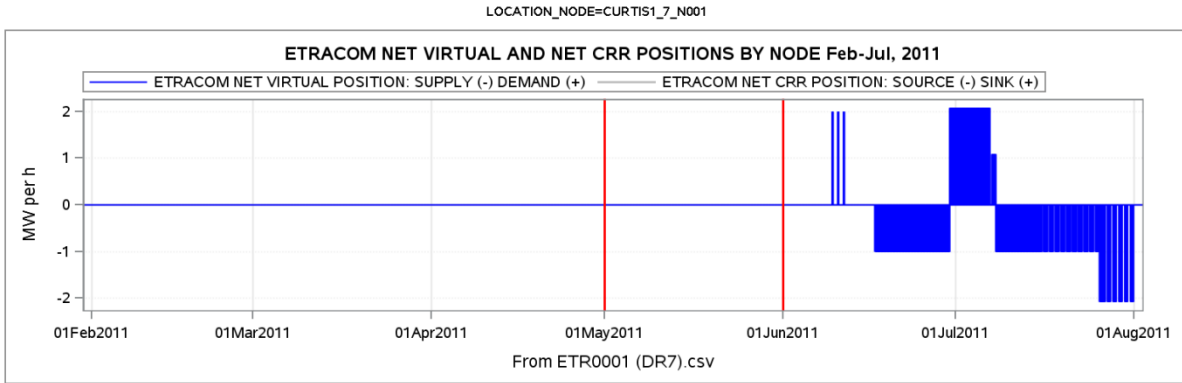


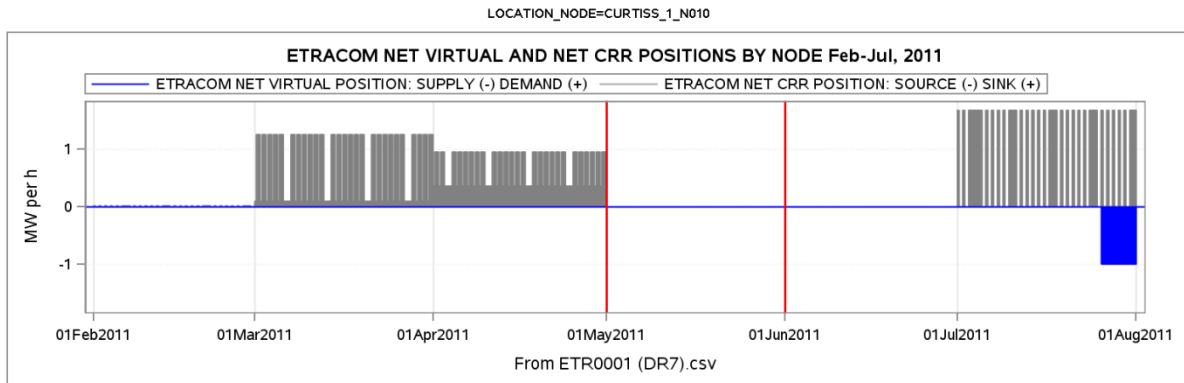


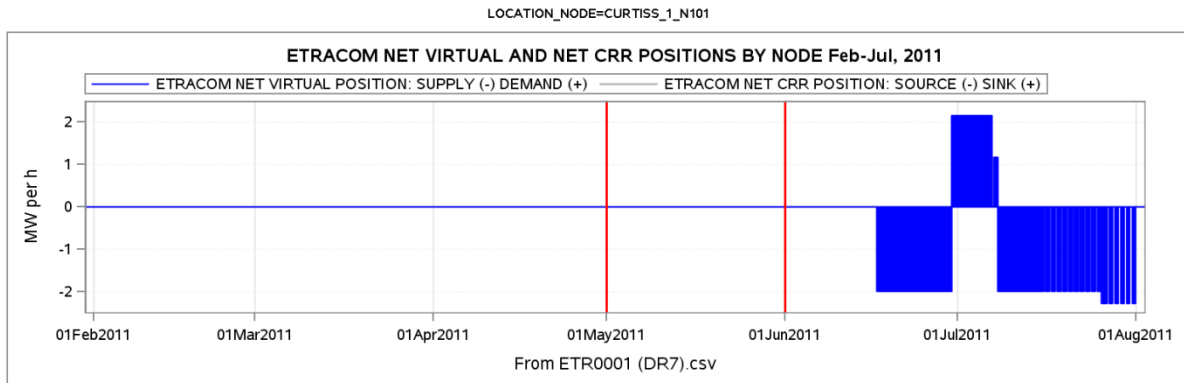




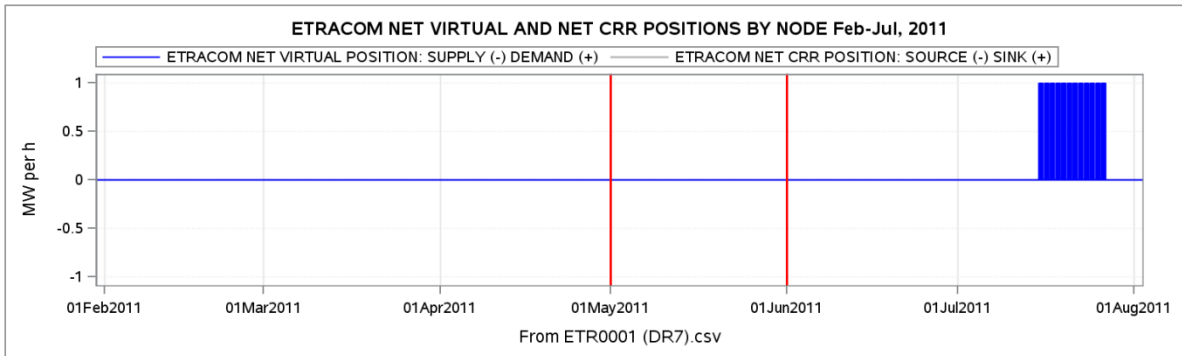


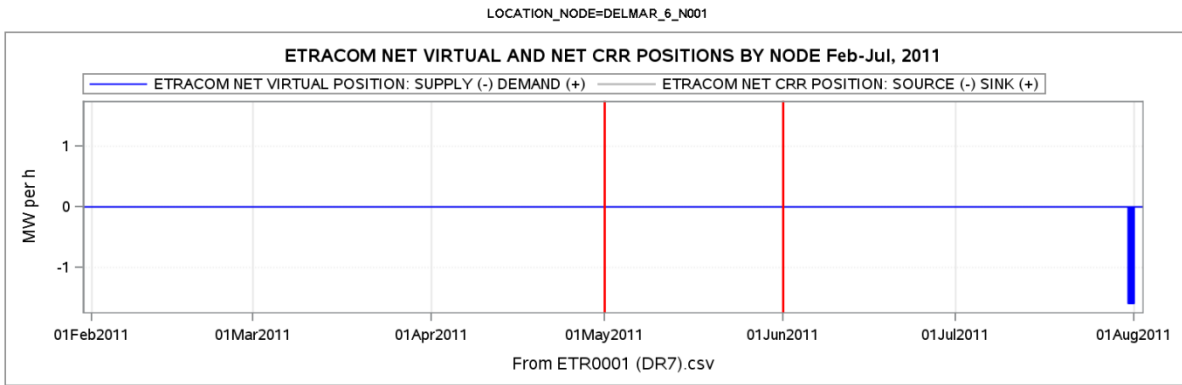


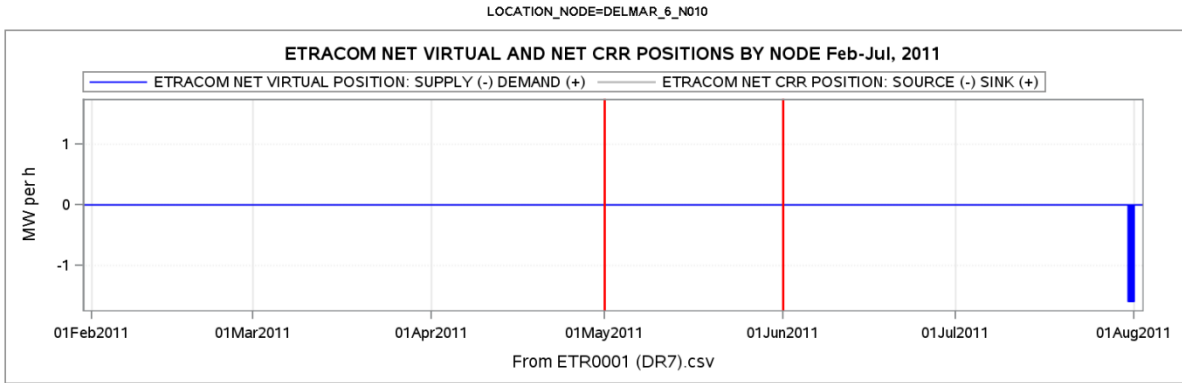


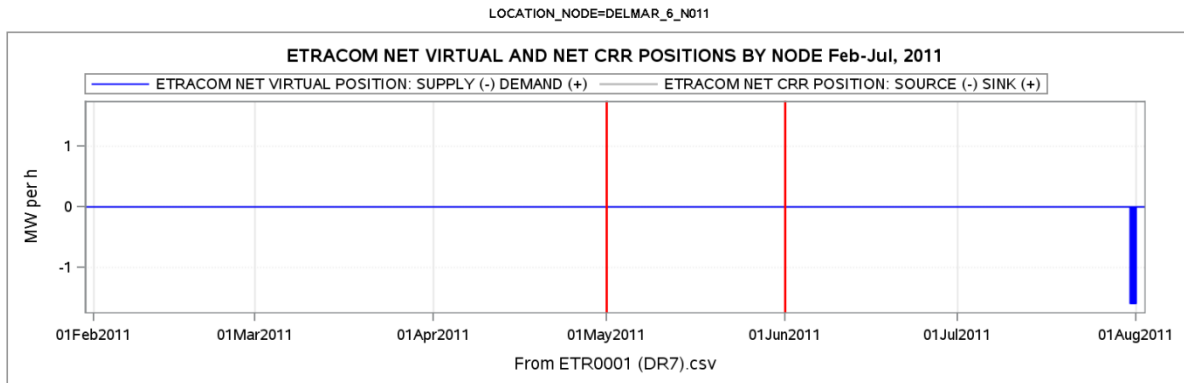


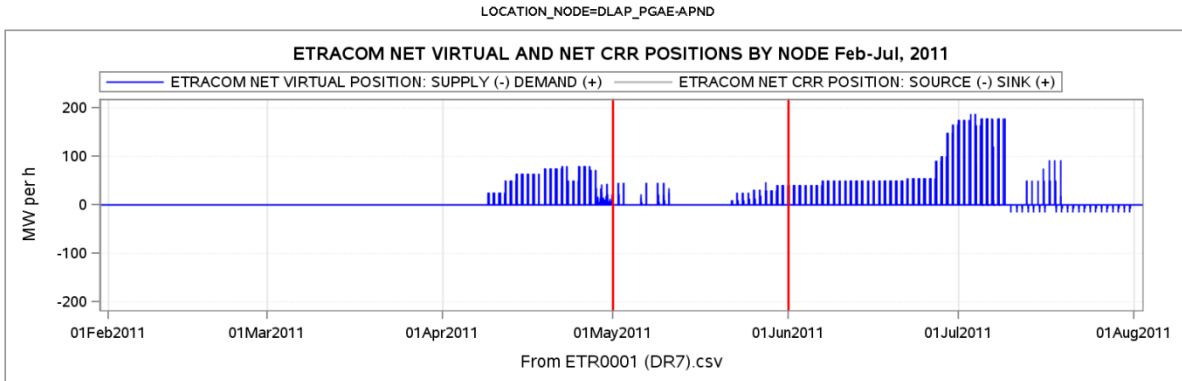
LOCATION_NODE=DANA_6_N001

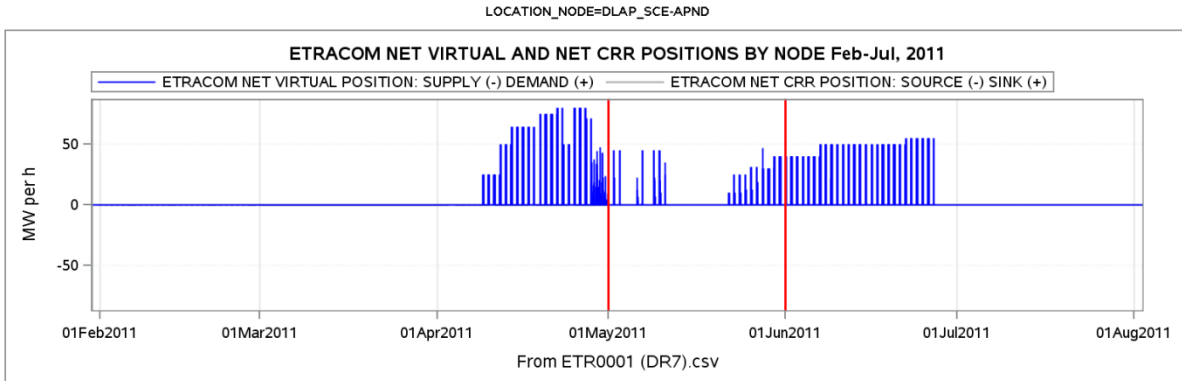


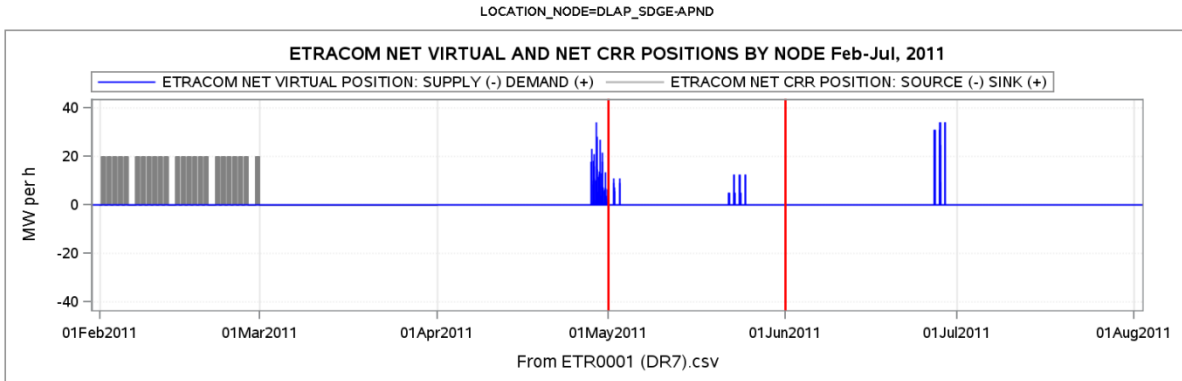


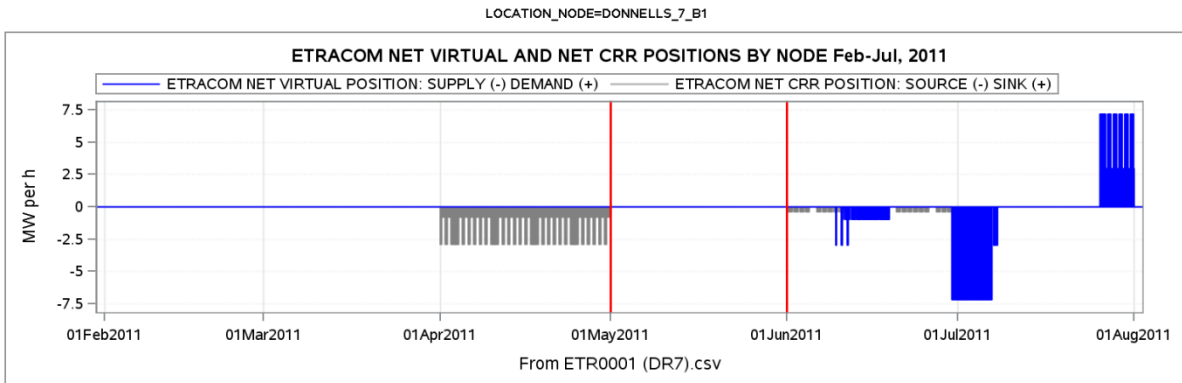


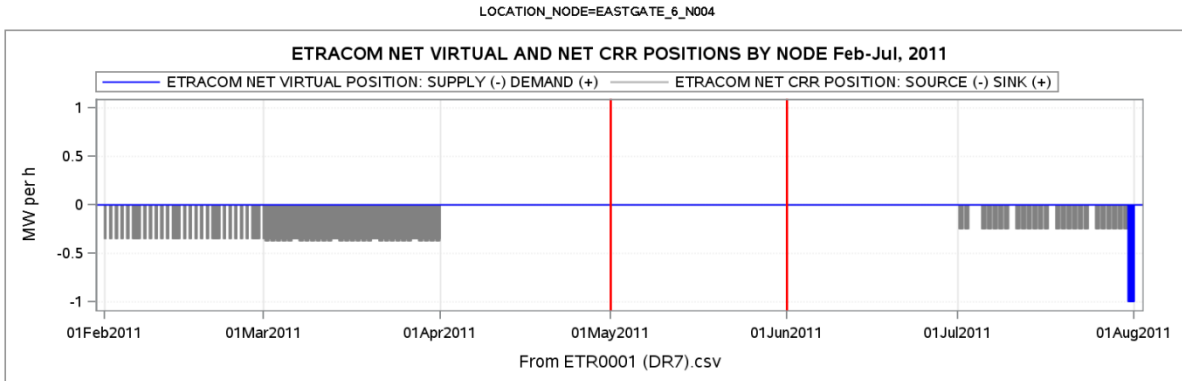


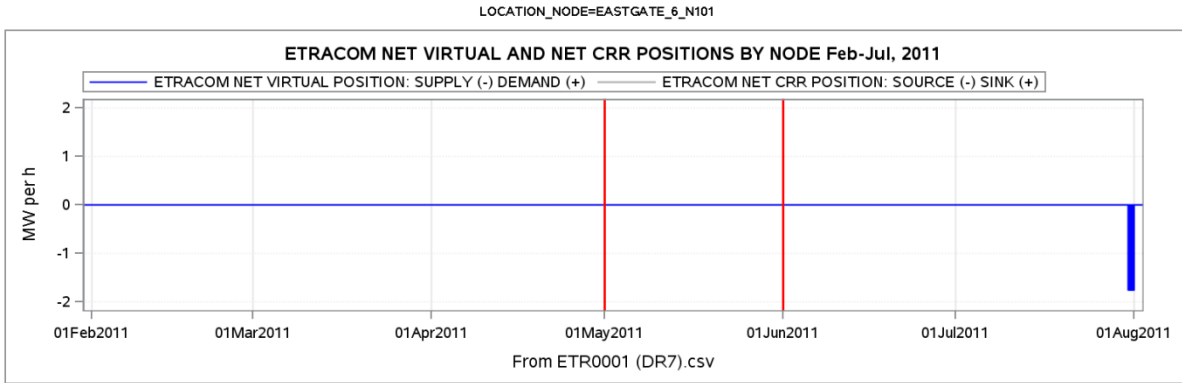


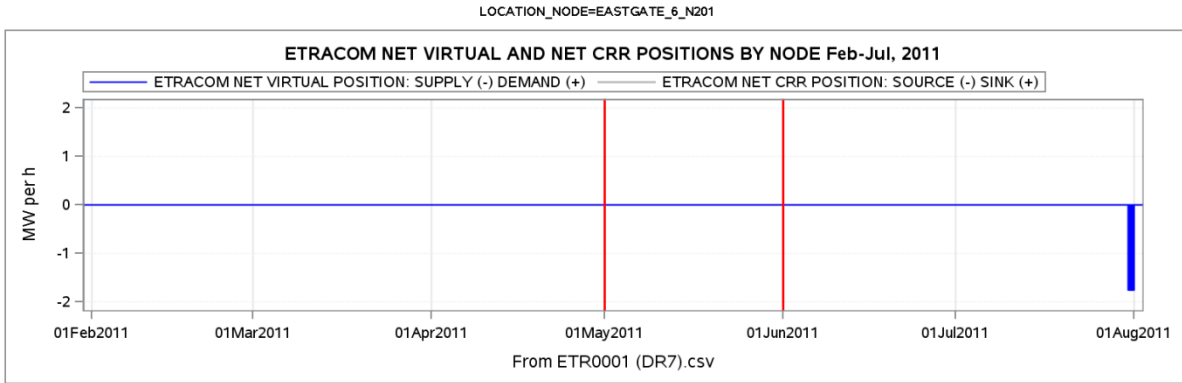


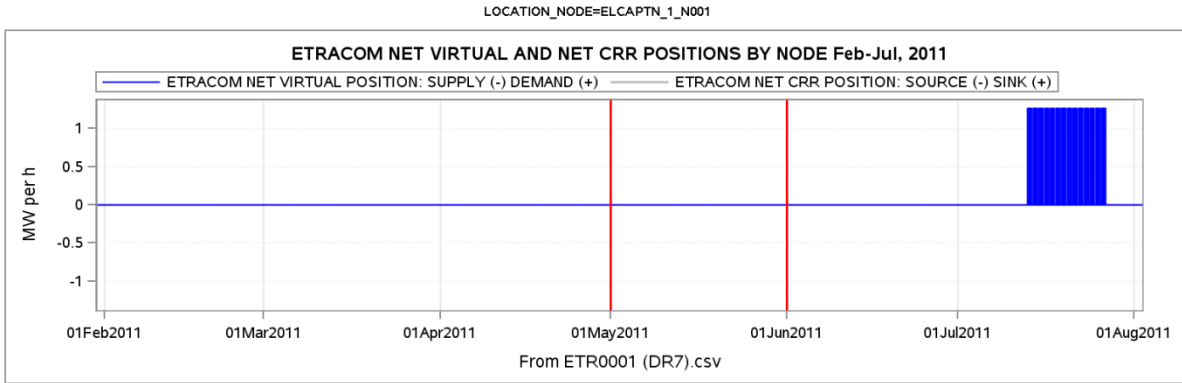


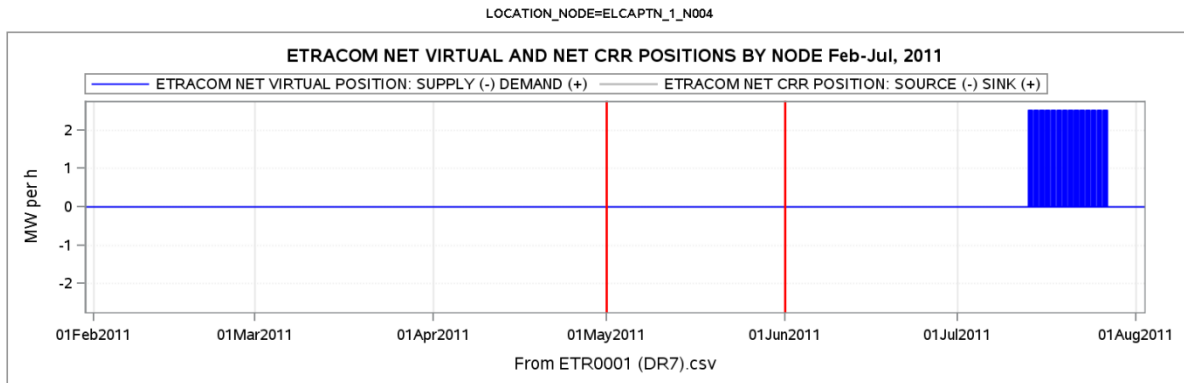


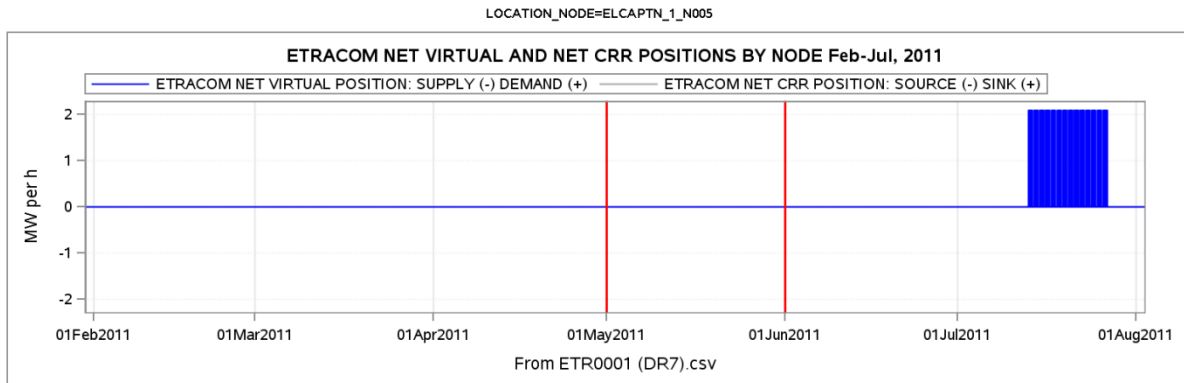


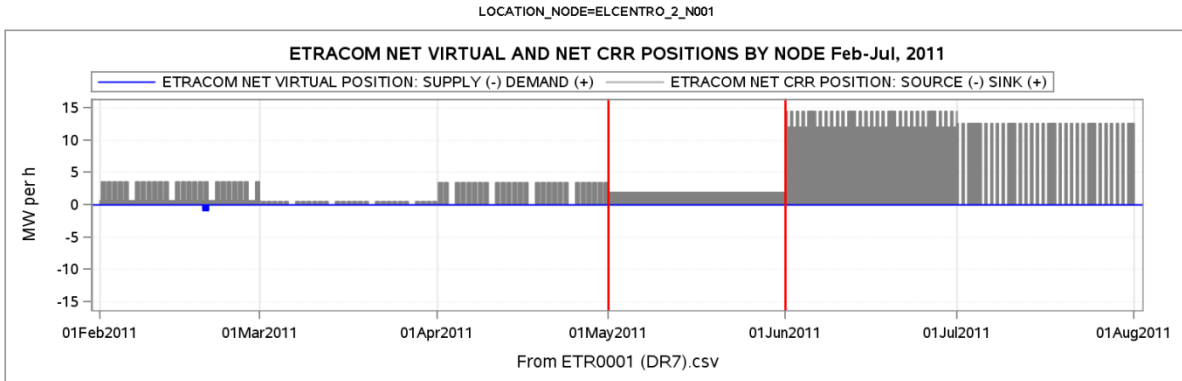




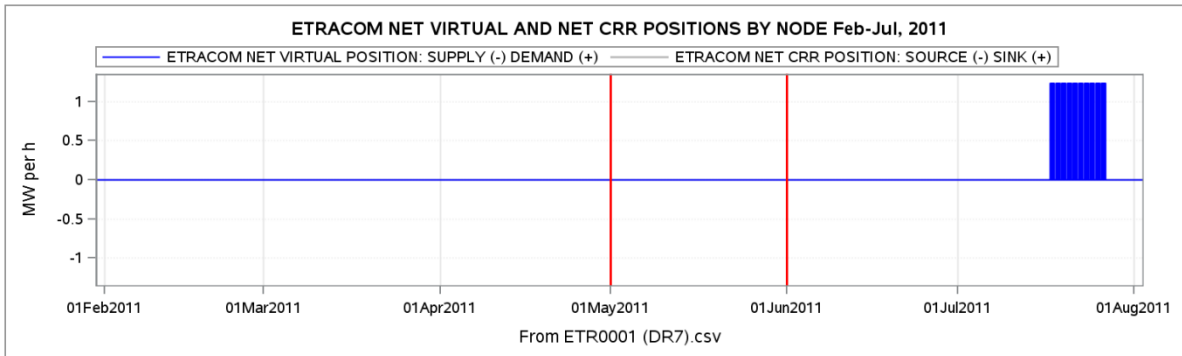




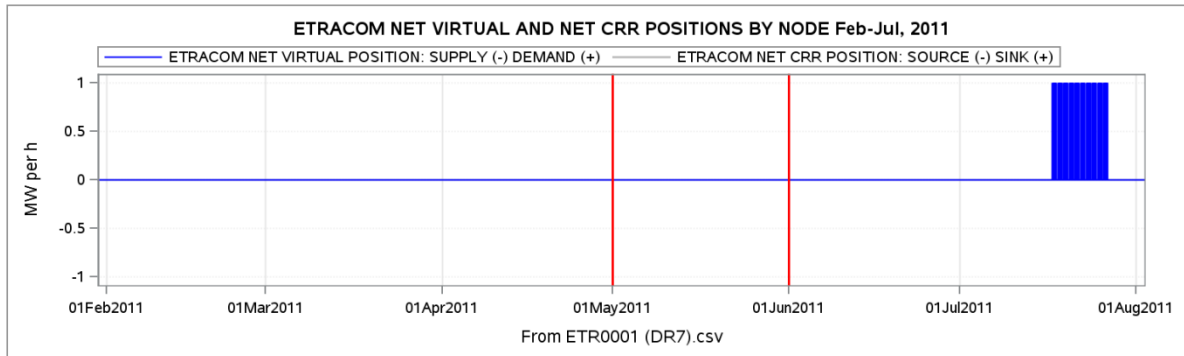


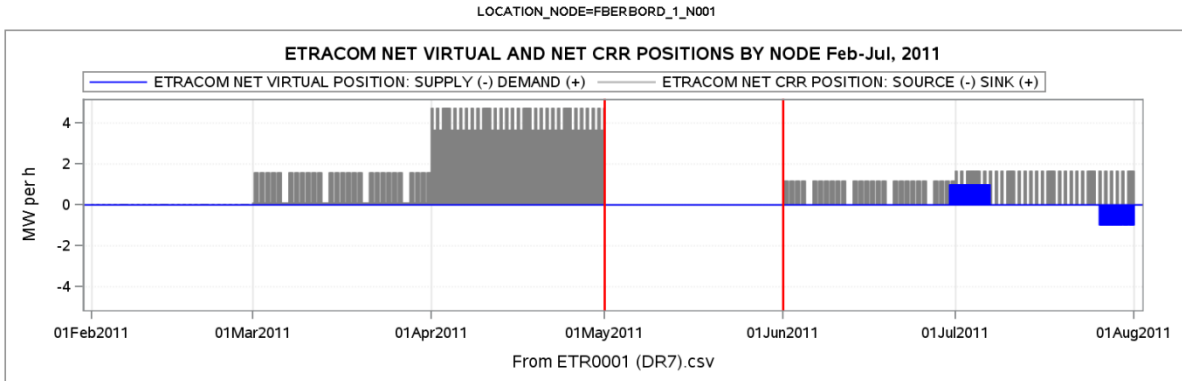


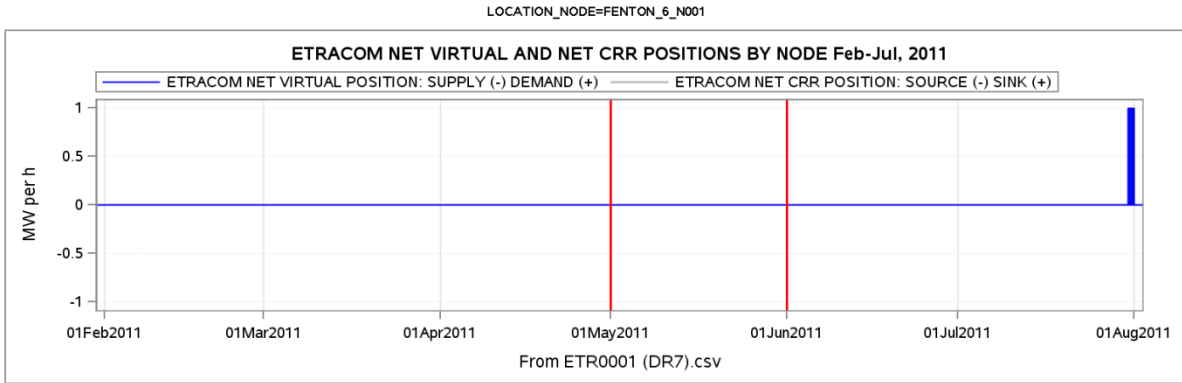
LOCATION_NODE=ESTCKTN_6_N002



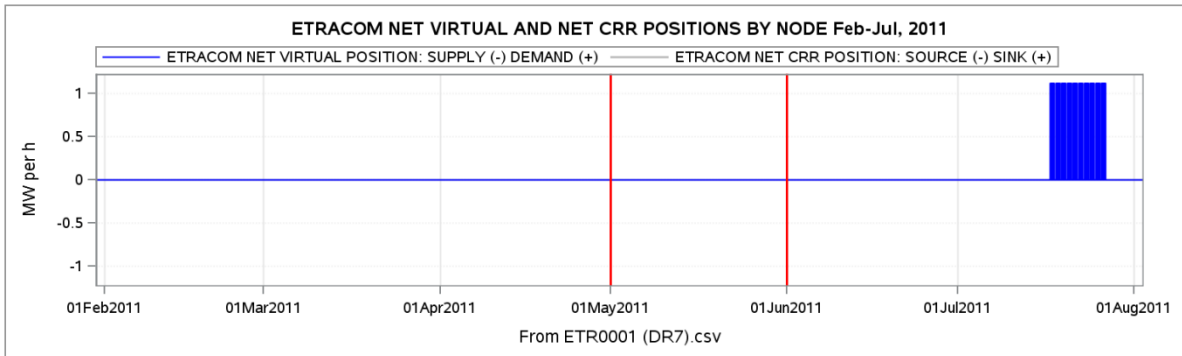
LOCATION_NODE=ESTCKTN_6_N101



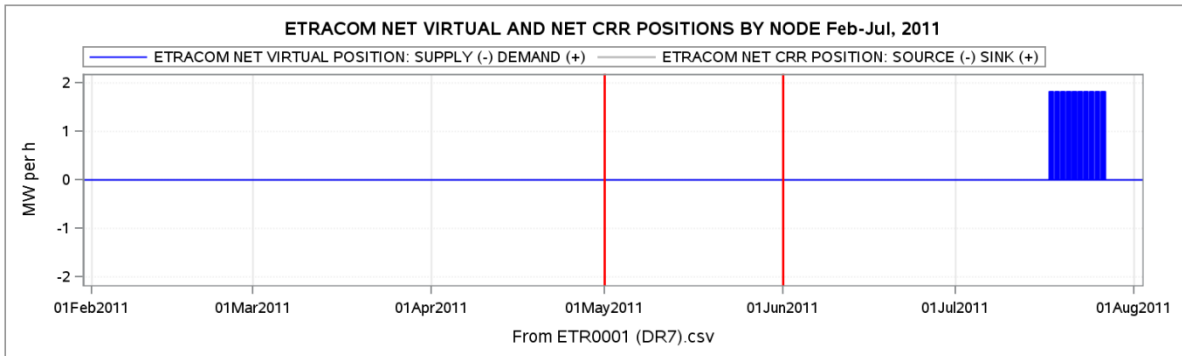


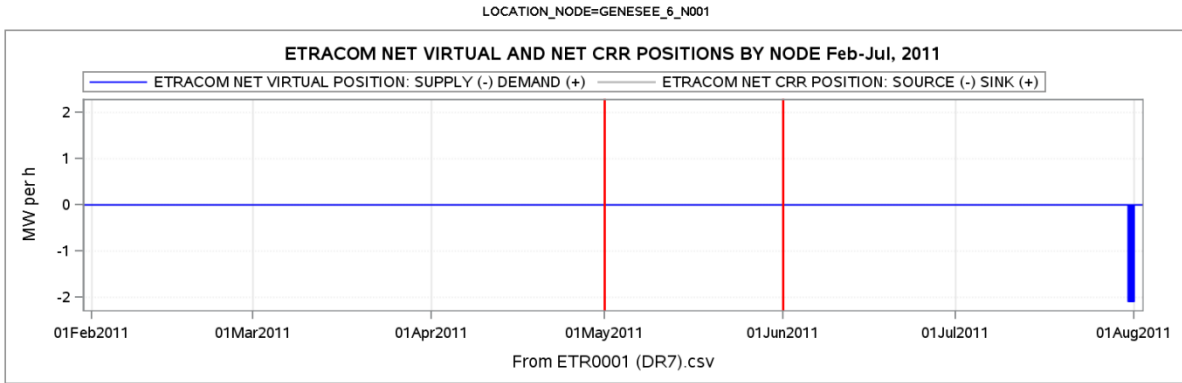


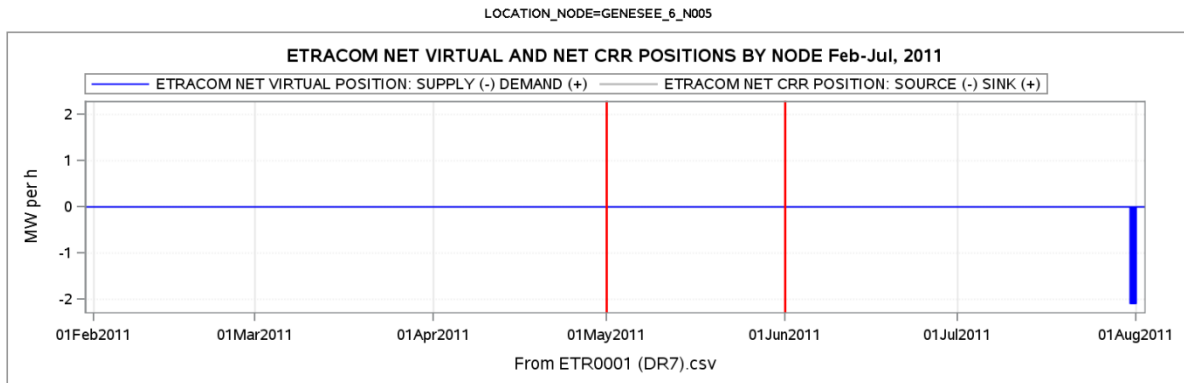
LOCATION_NODE=FRNCHCP_6_LN001

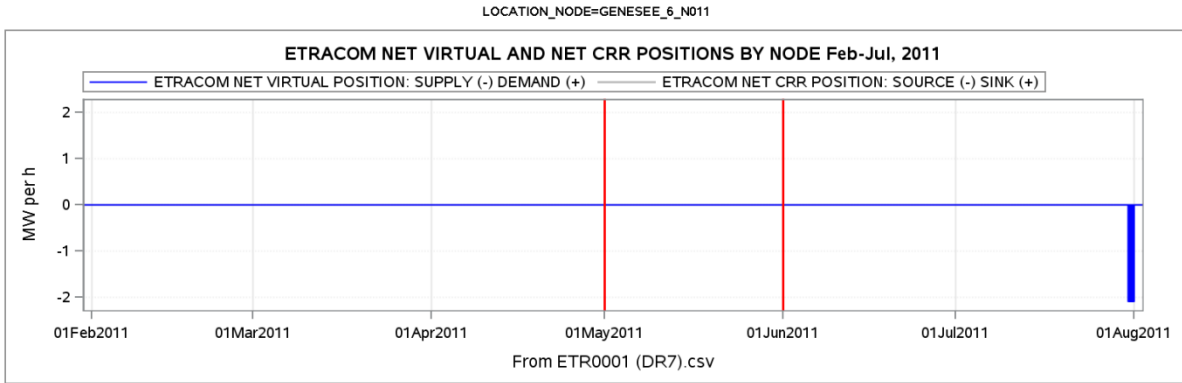


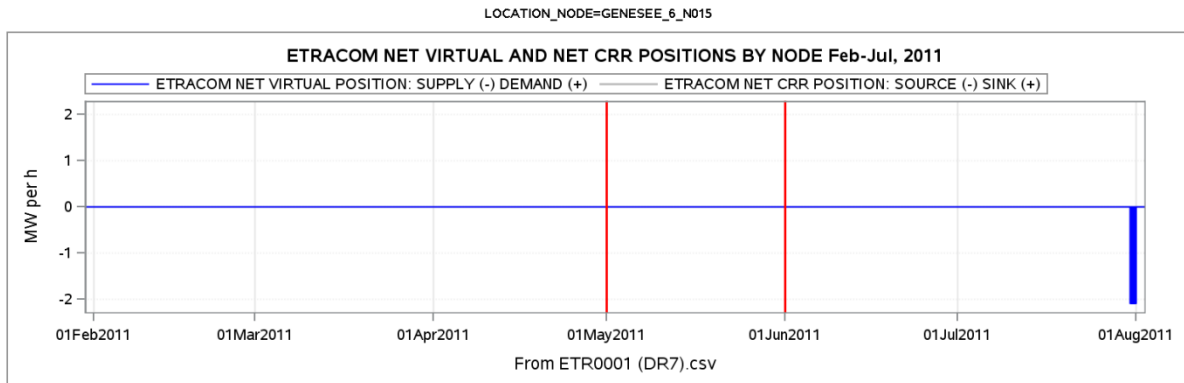
LOCATION_NODE=FRNCHCP_6_N001

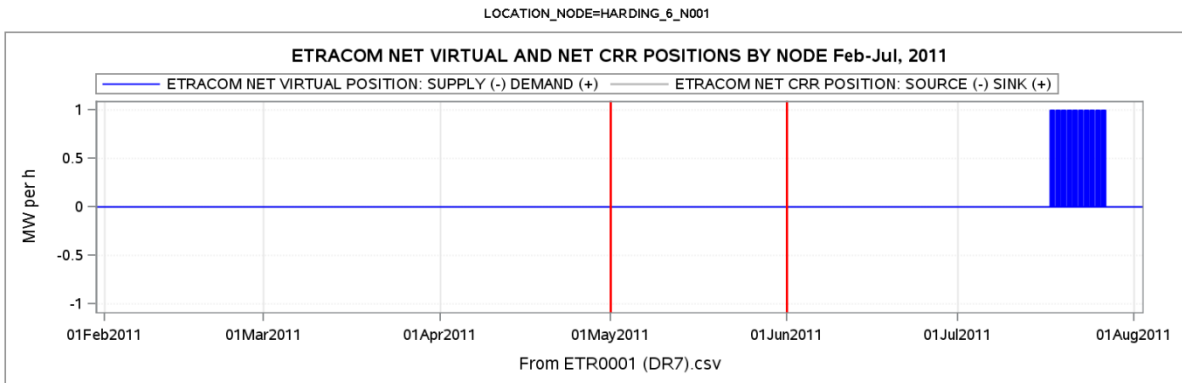




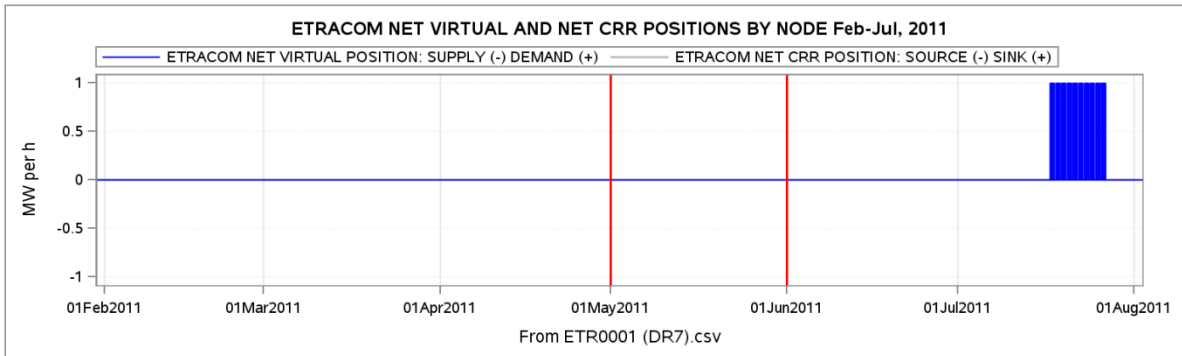




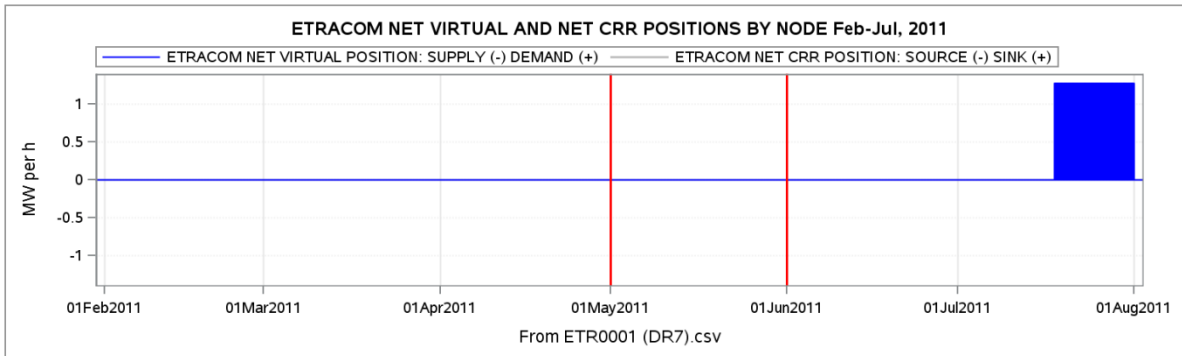




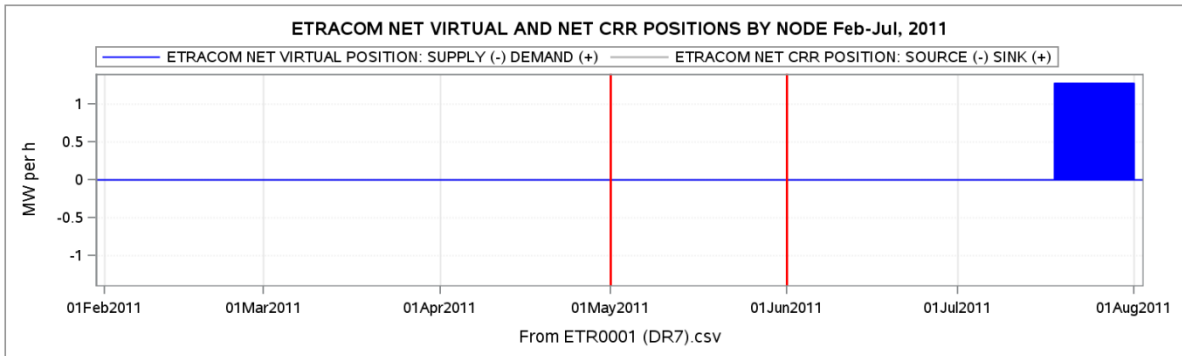
LOCATION_NODE=HARDING_6_N004

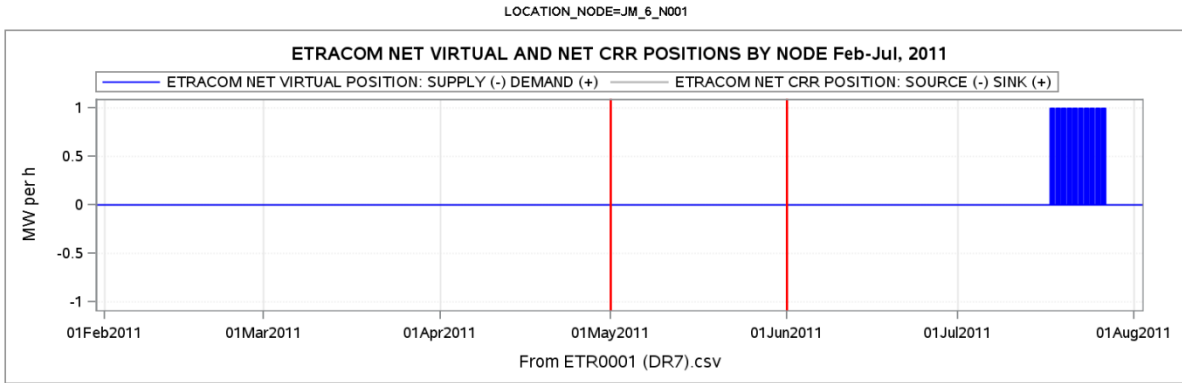


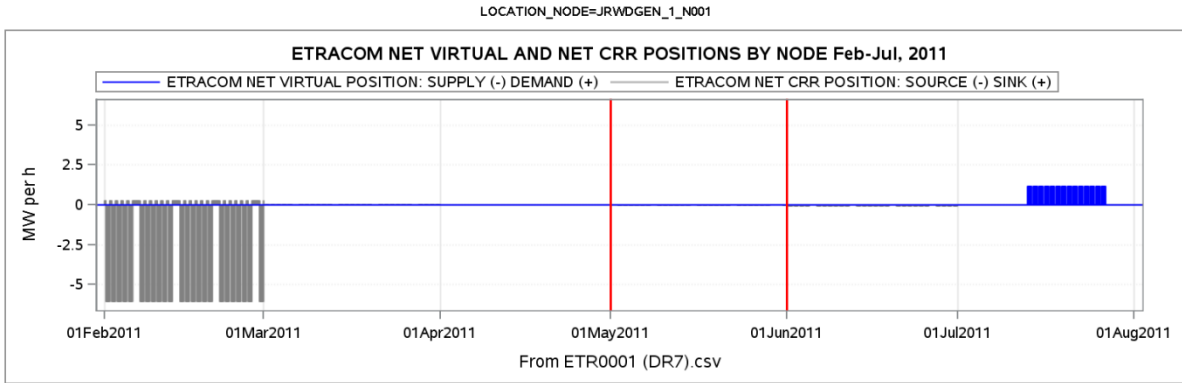
LOCATION_NODE=HNTRSPT_1_LN001

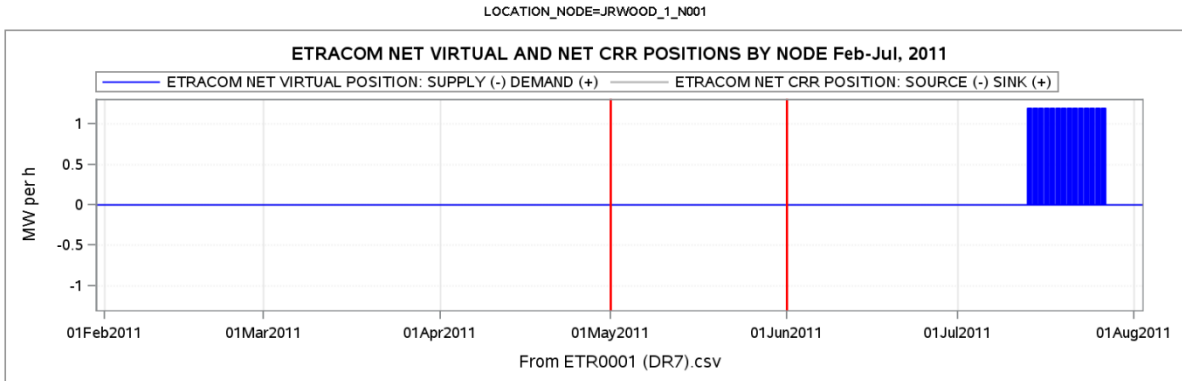


LOCATION_NODE=HNTRSPT_1_LN002

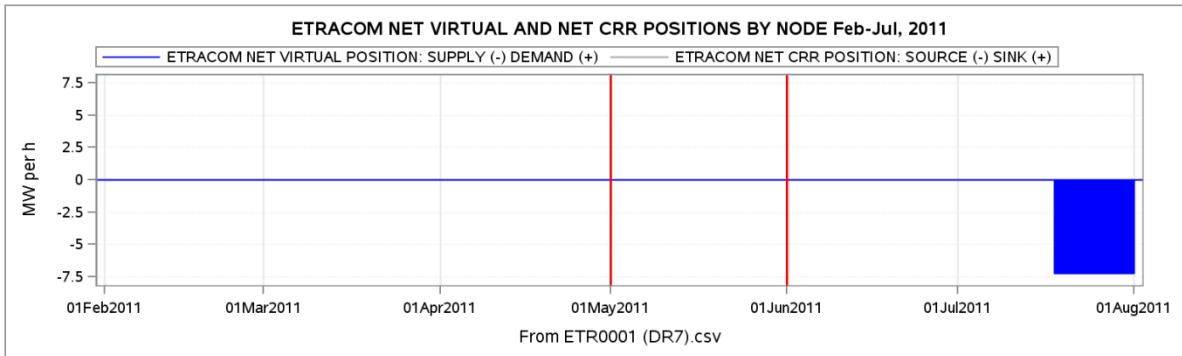




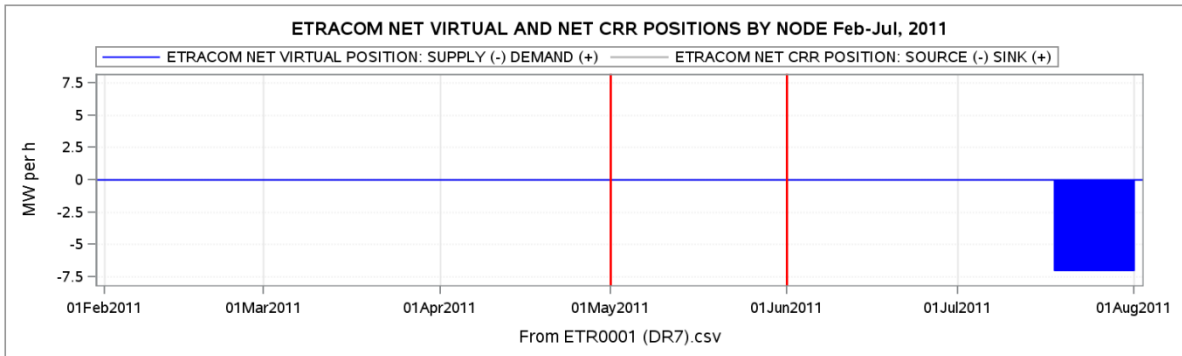




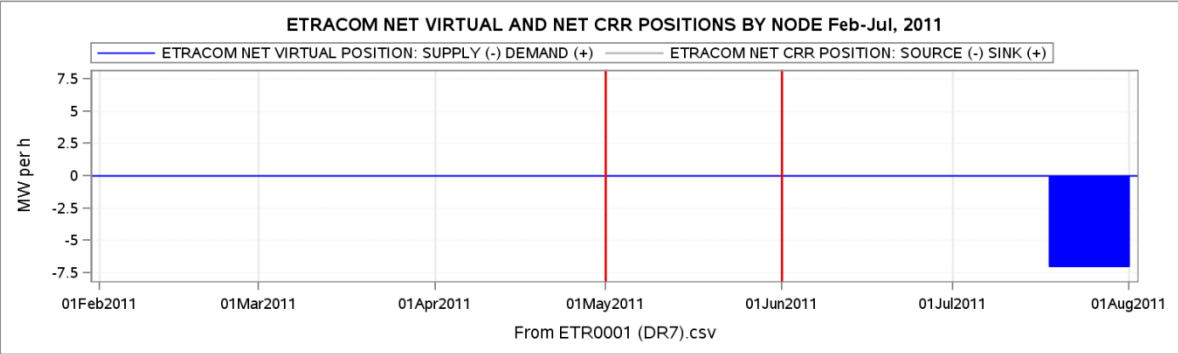
LOCATION_NODE=LARKIN12_7_LN001

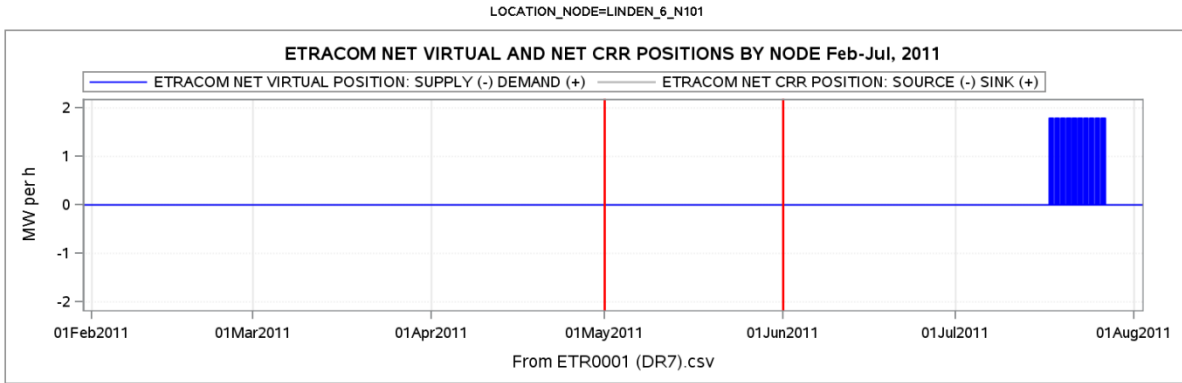


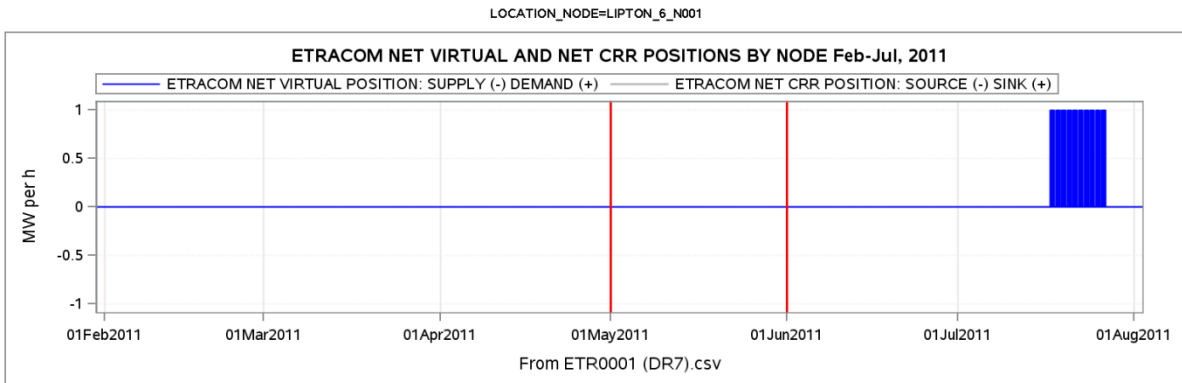
LOCATION_NODE=LARKIN12_7_LN002

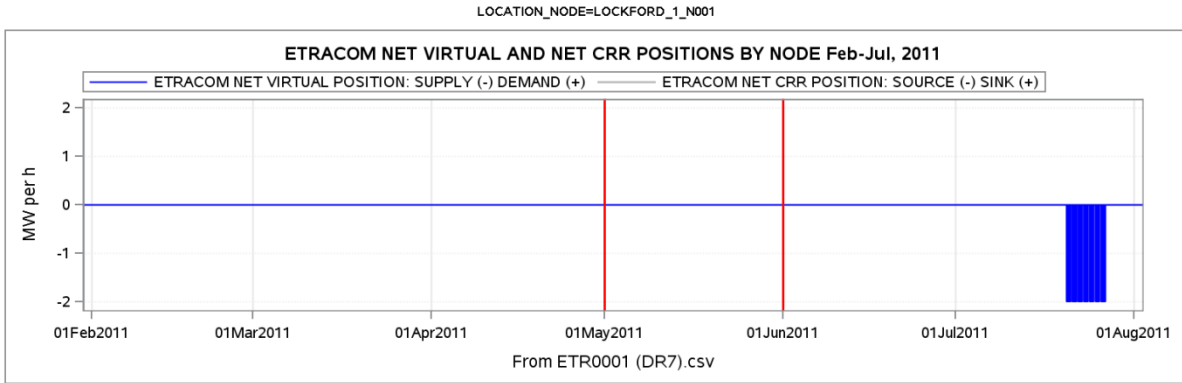


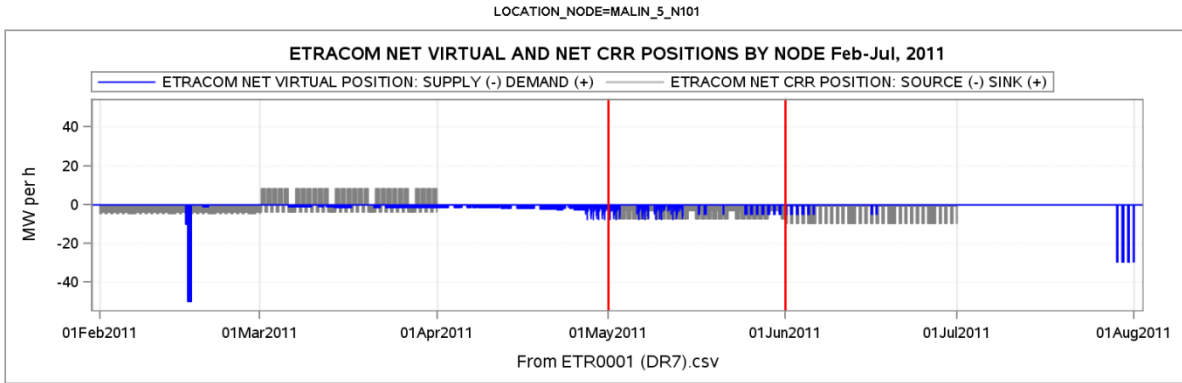
LOCATION_NODE=LARKIN12_7_LN003

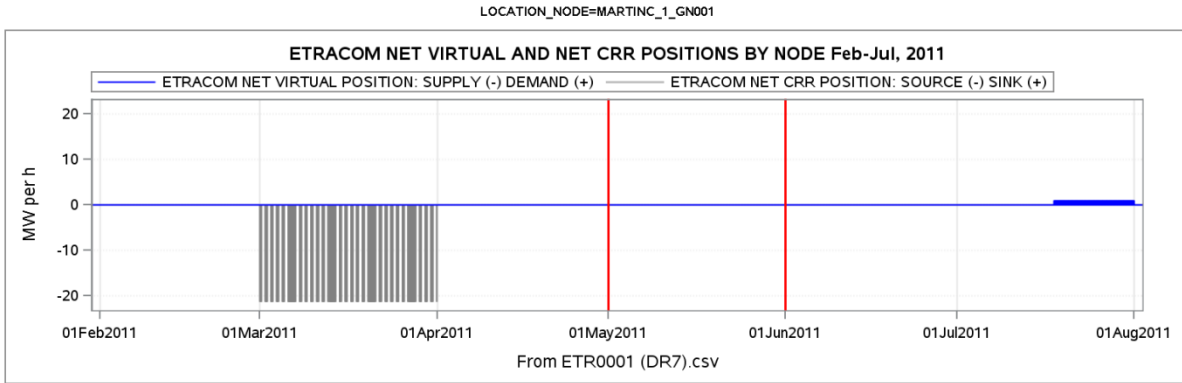


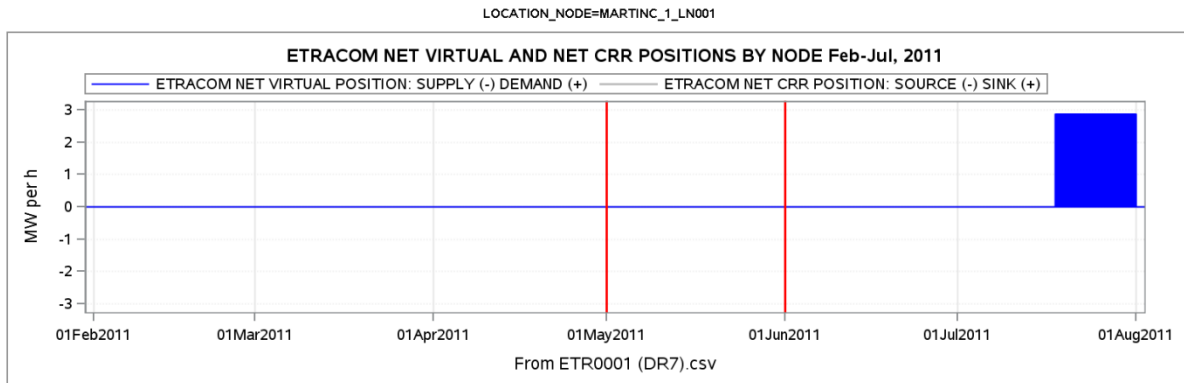


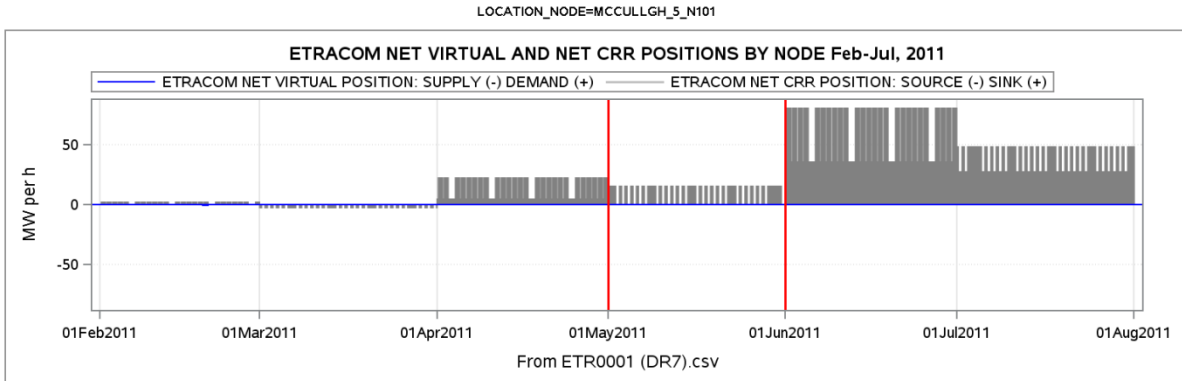


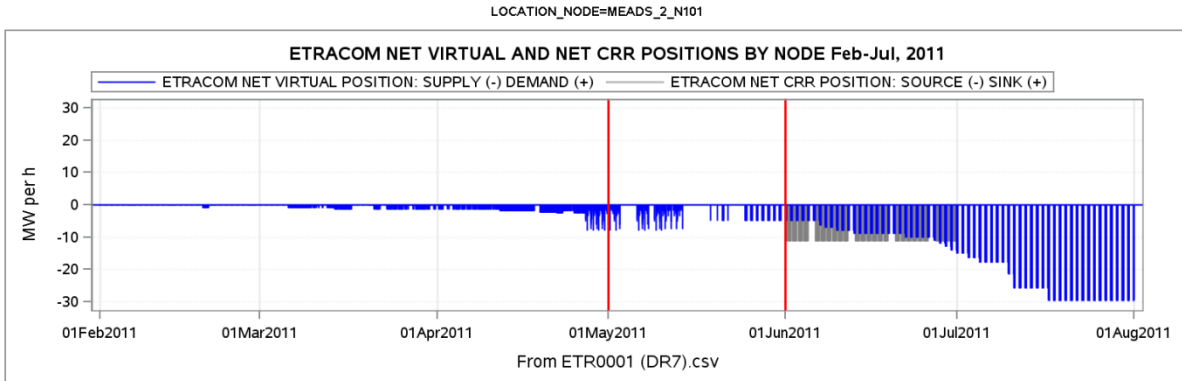




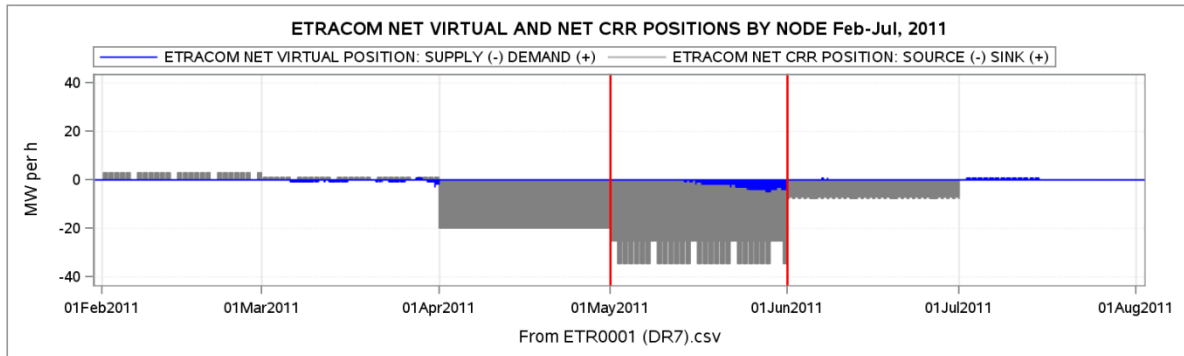


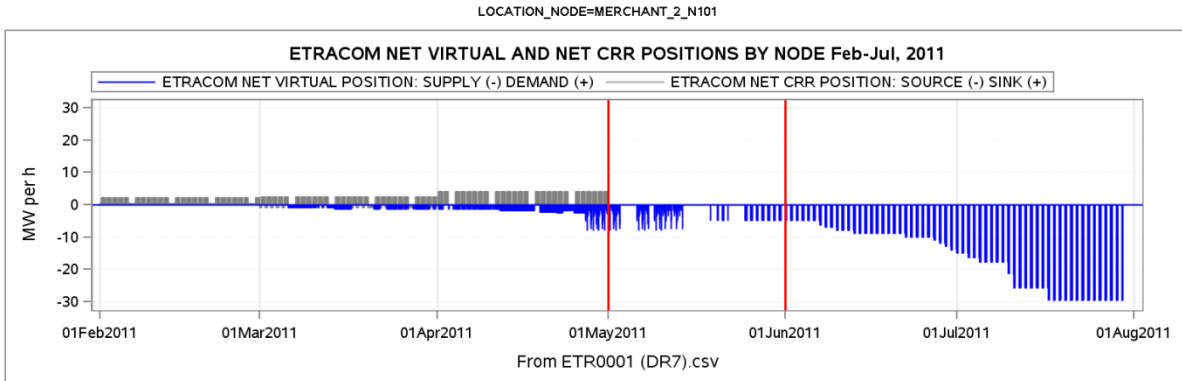


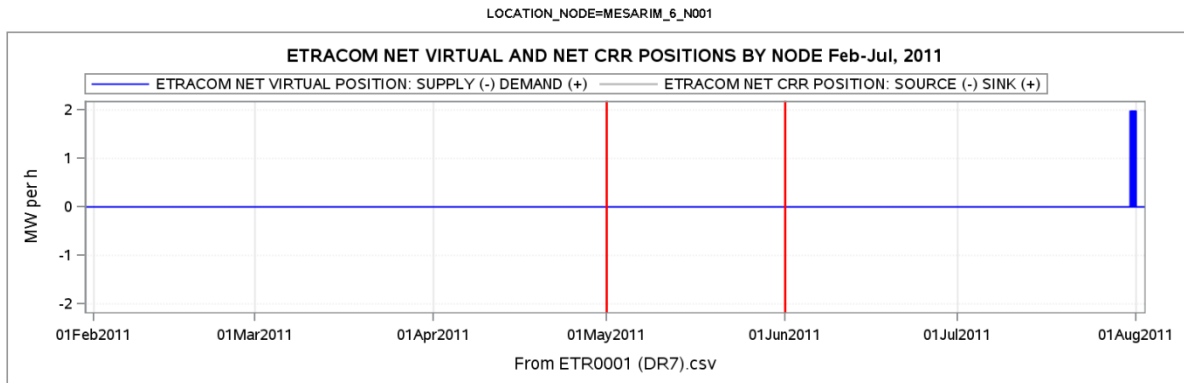




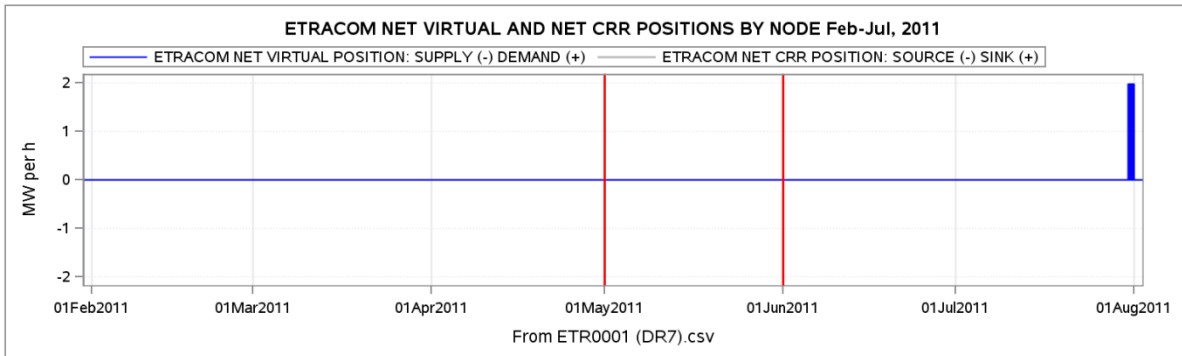
LOCATION_NODE=MELONES_2_N014

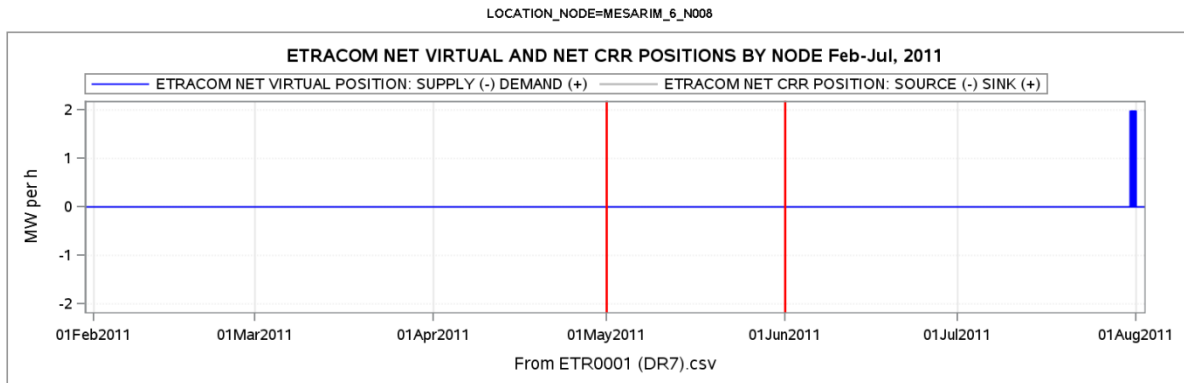




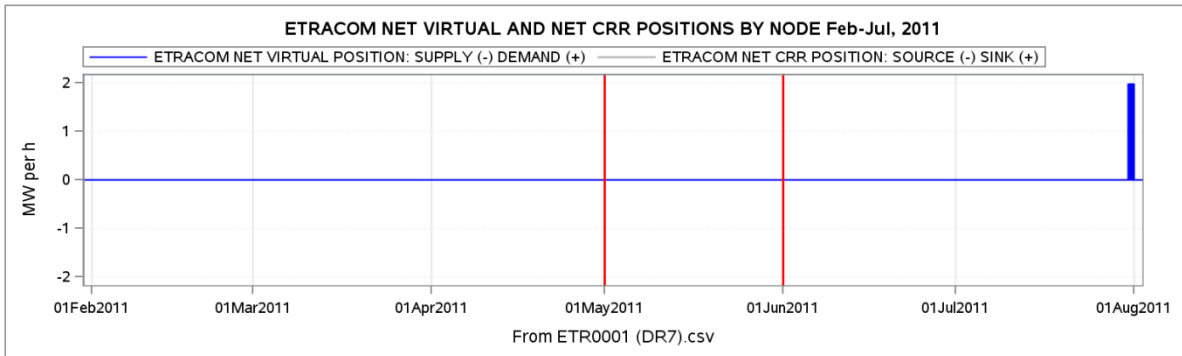


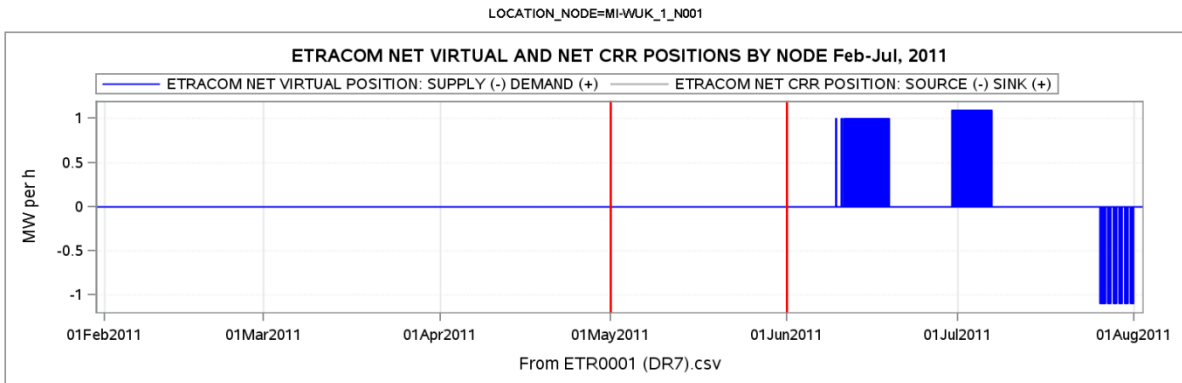
LOCATION_NODE=MESARIM_6_N007

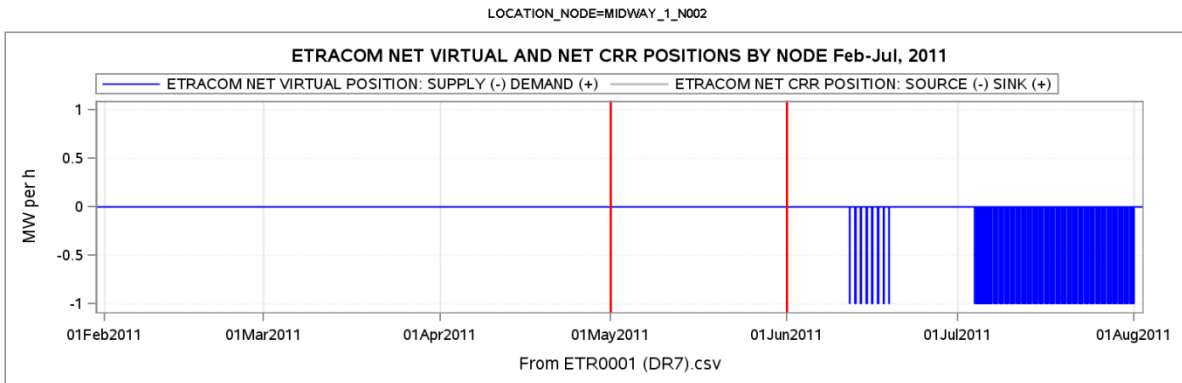


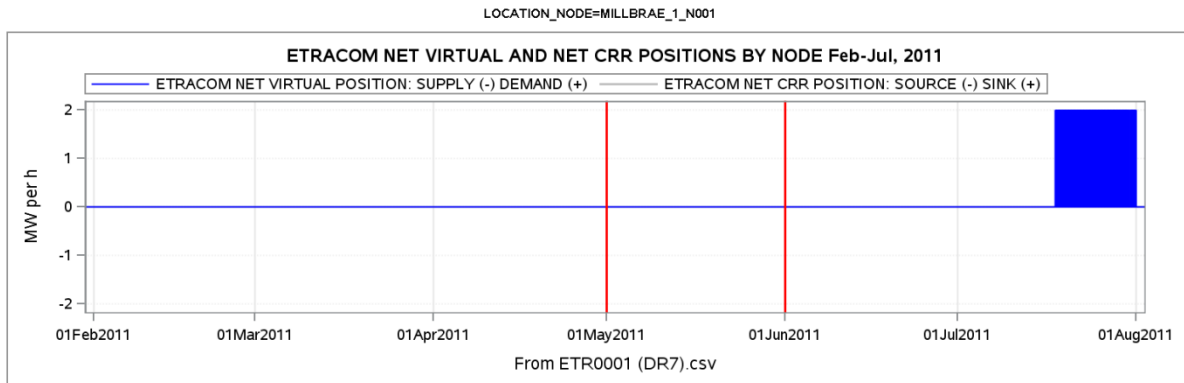


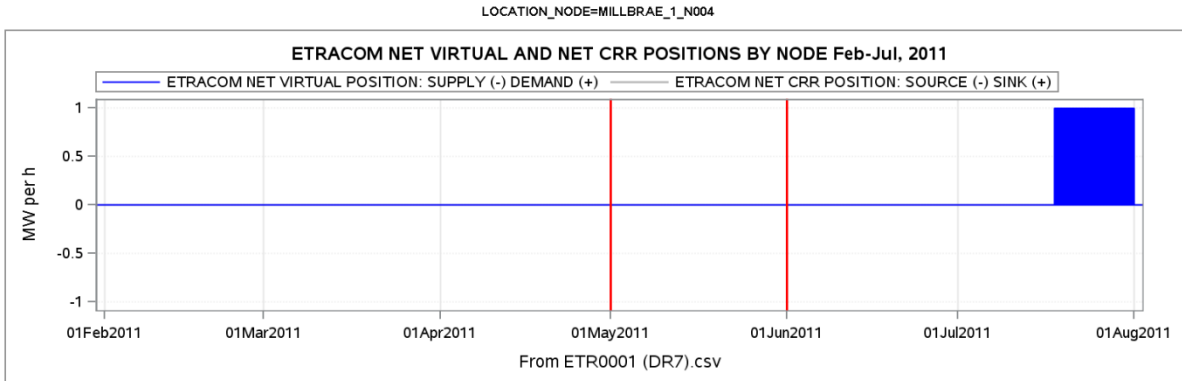
LOCATION_NODE=MESARIM_6_N012

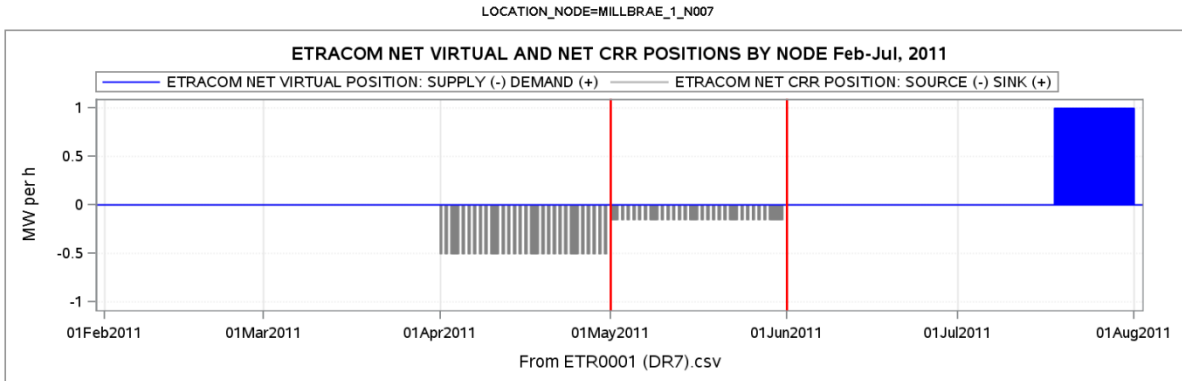


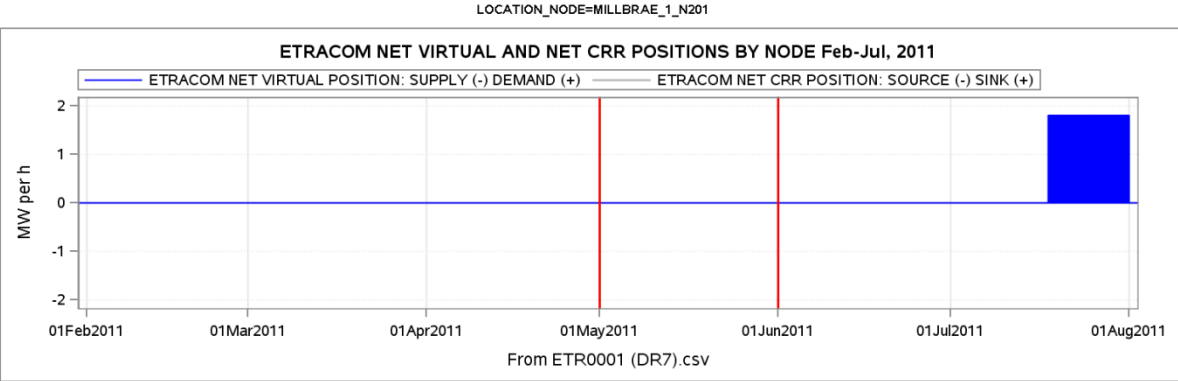


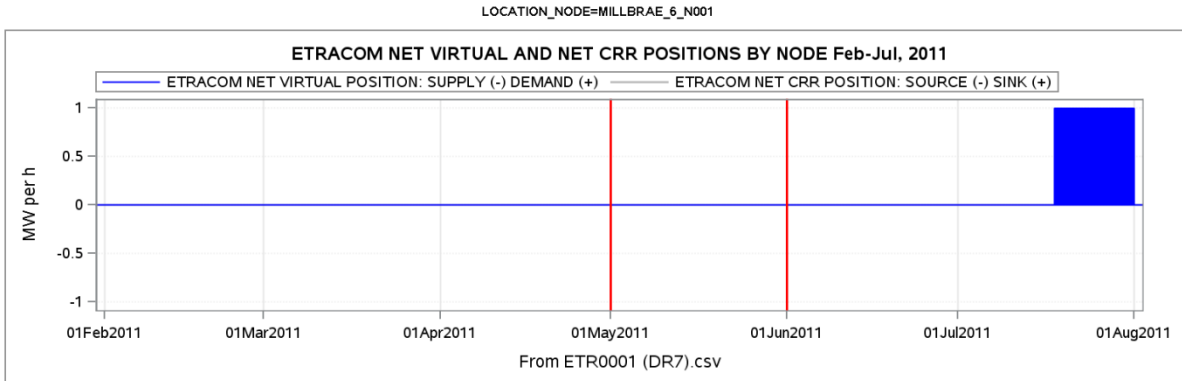


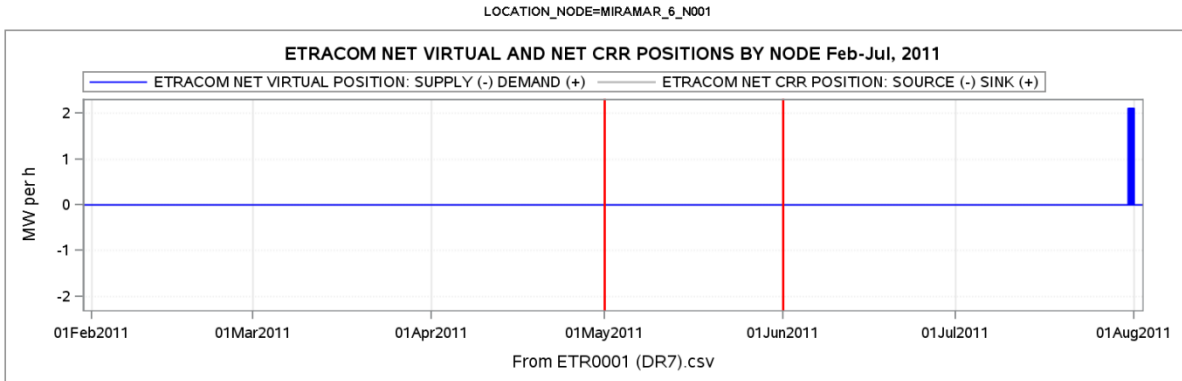




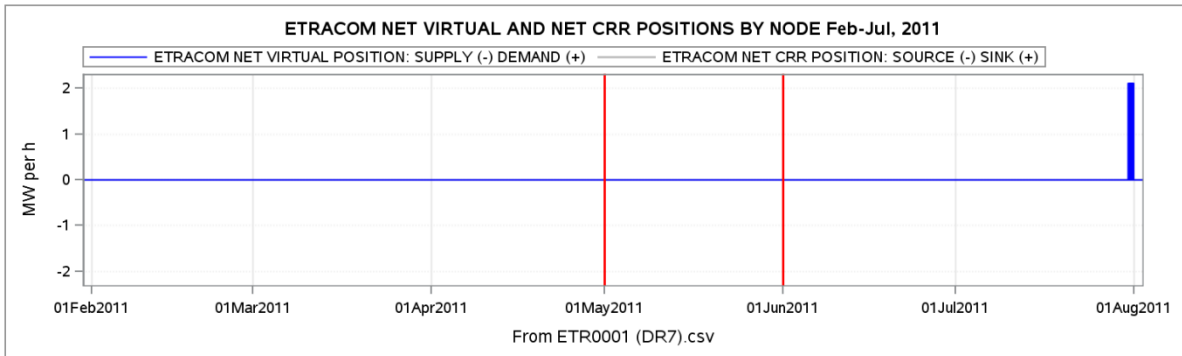




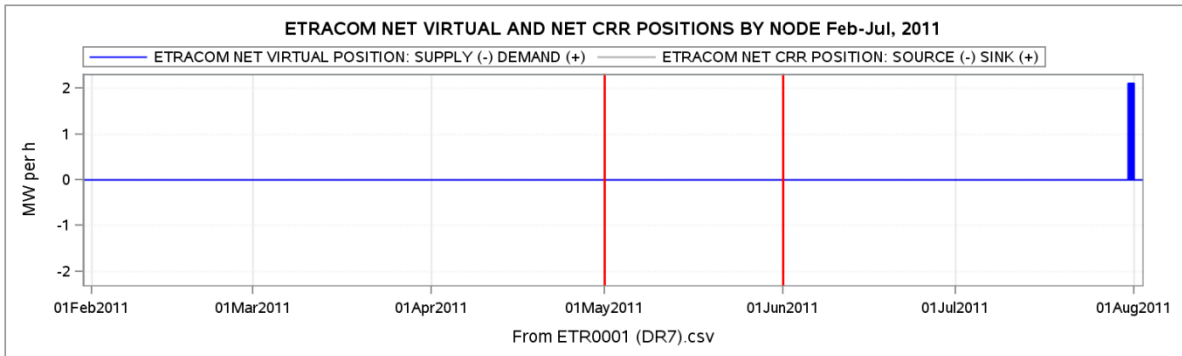


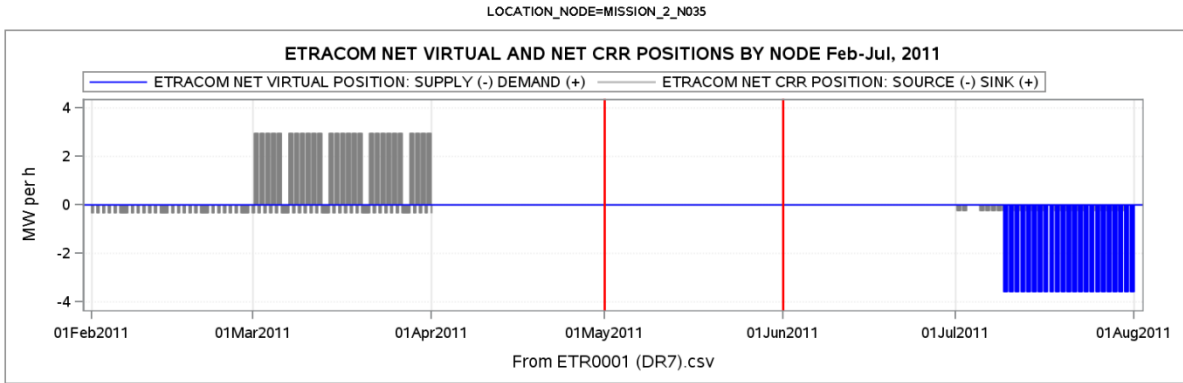


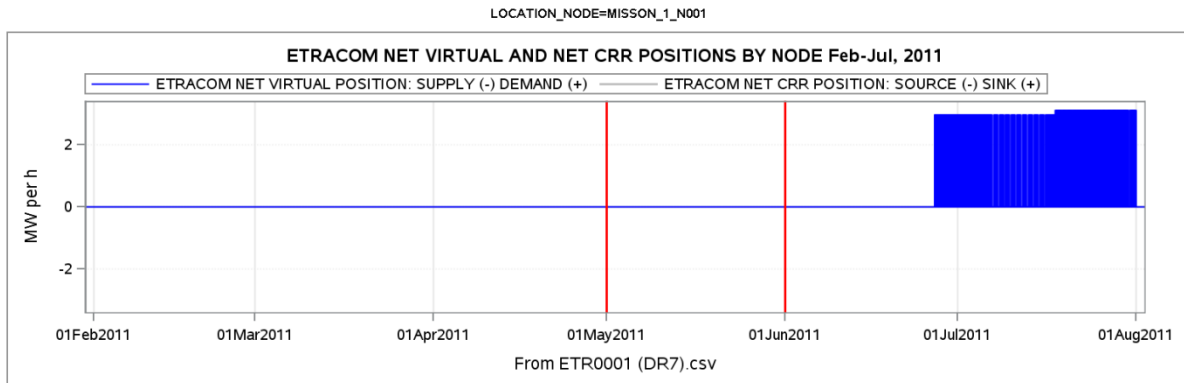
LOCATION_NODE=MIRAMAR_6_N004

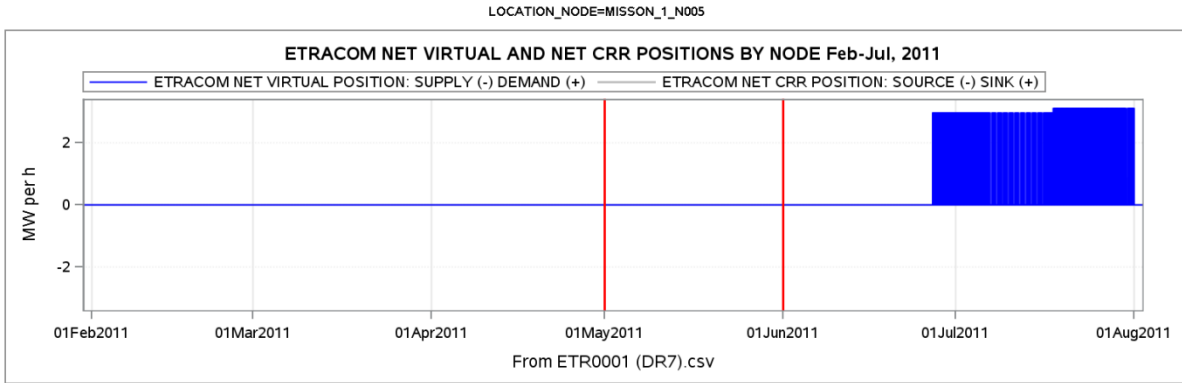


LOCATION_NODE=MIRAMAR_6_N017

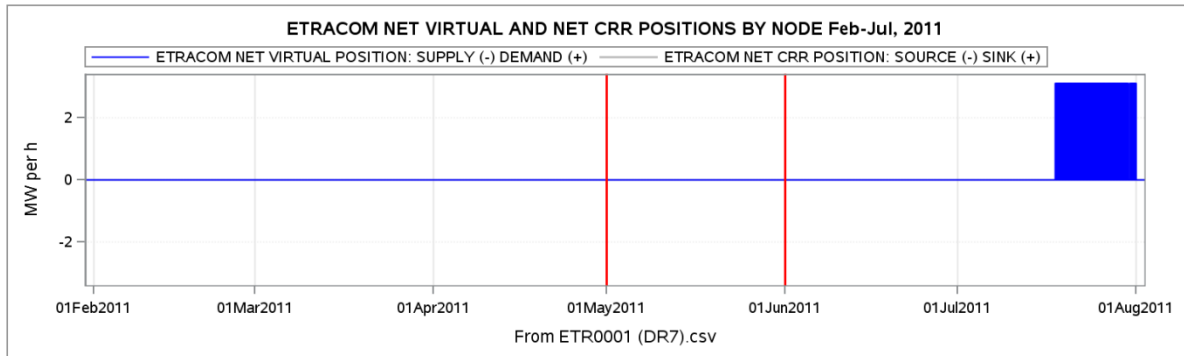


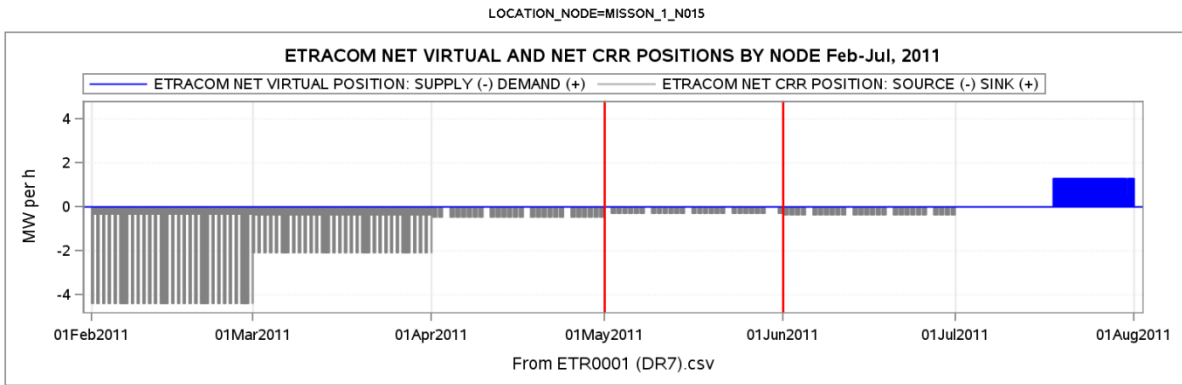


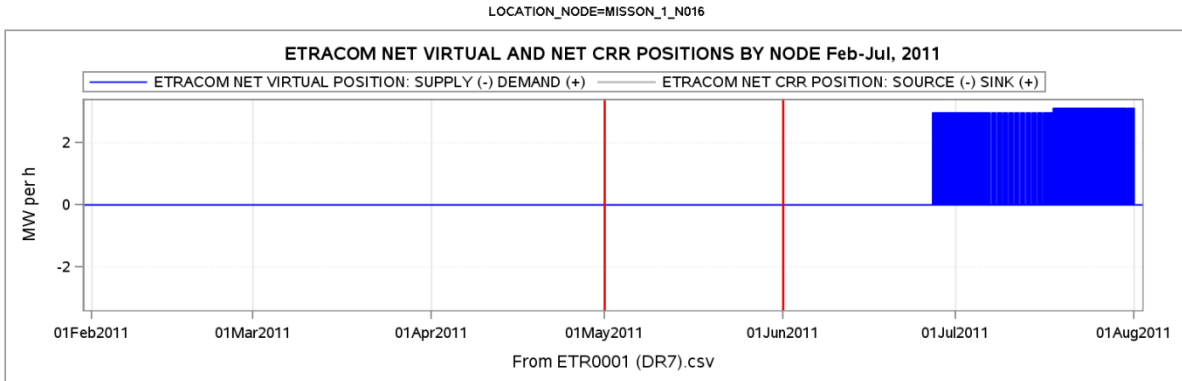


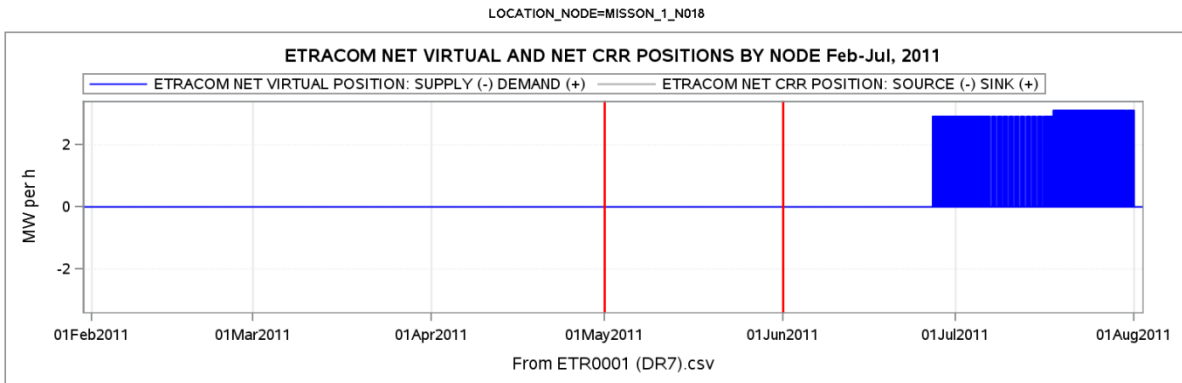


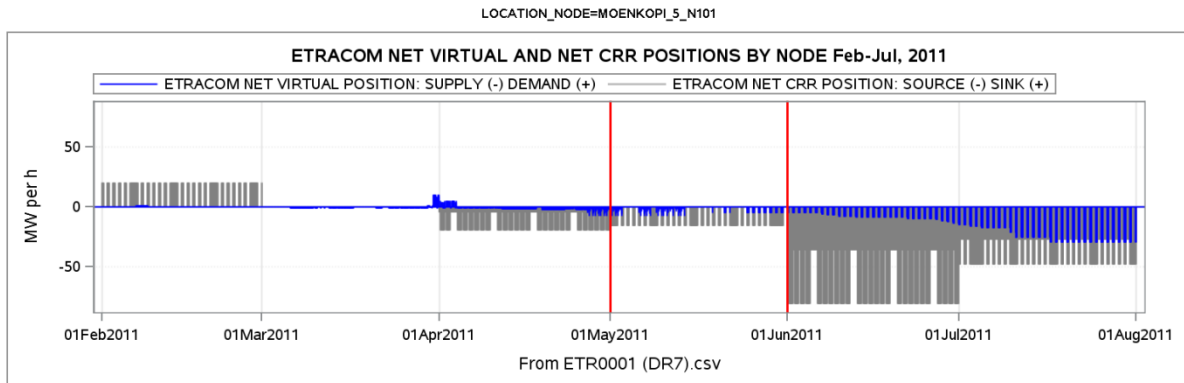
LOCATION_NODE=MISSON_1_N013

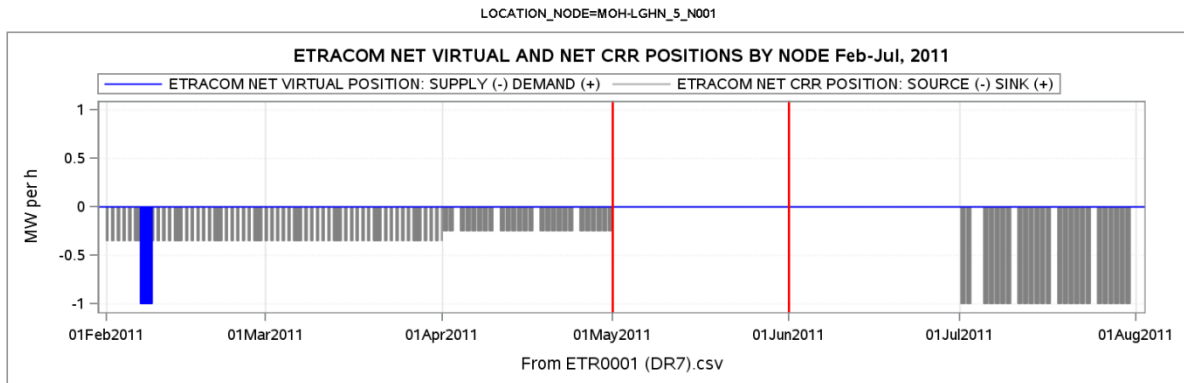


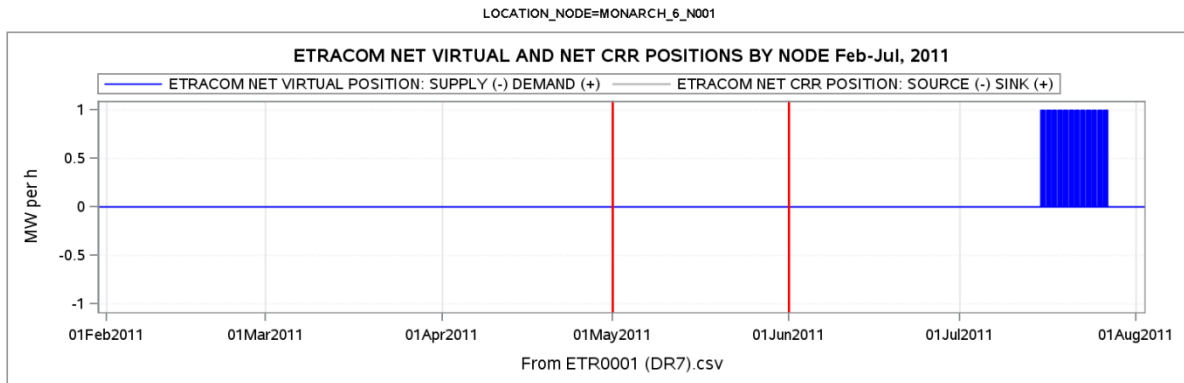


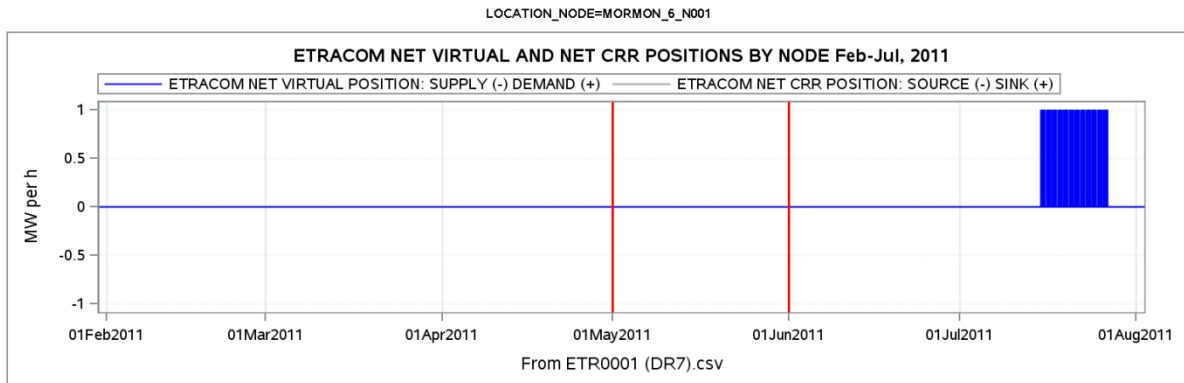


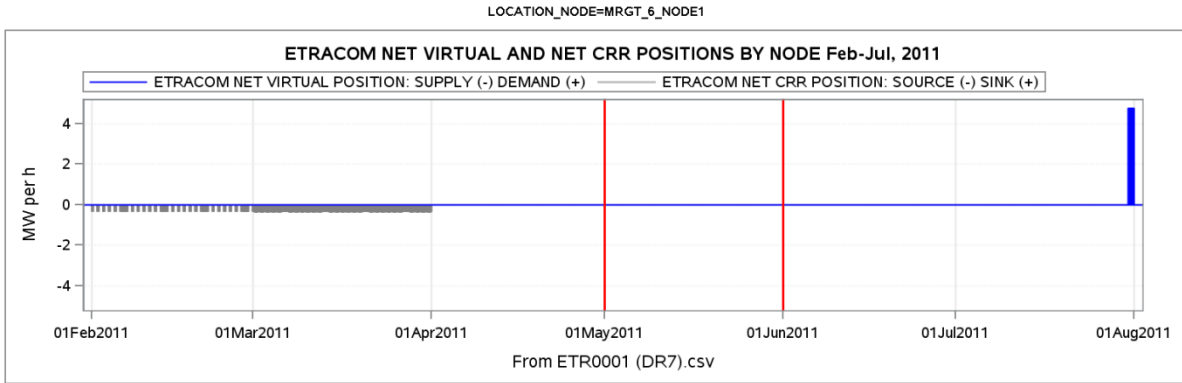


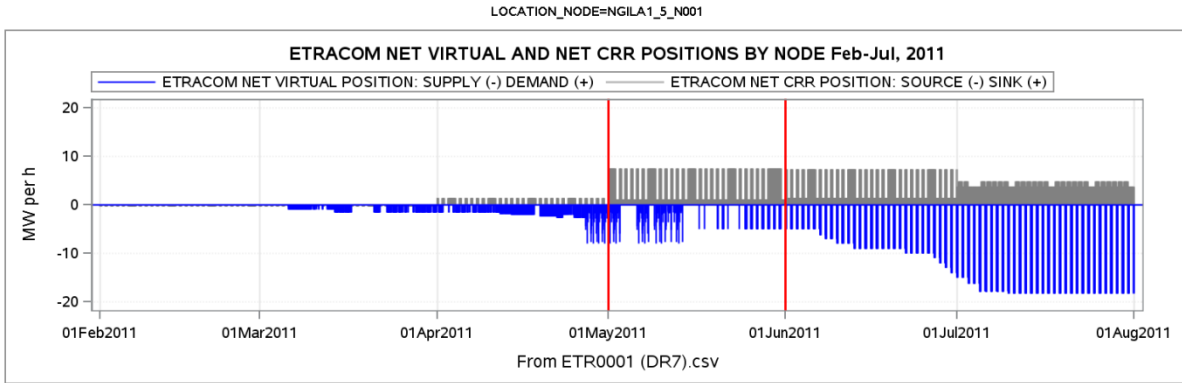


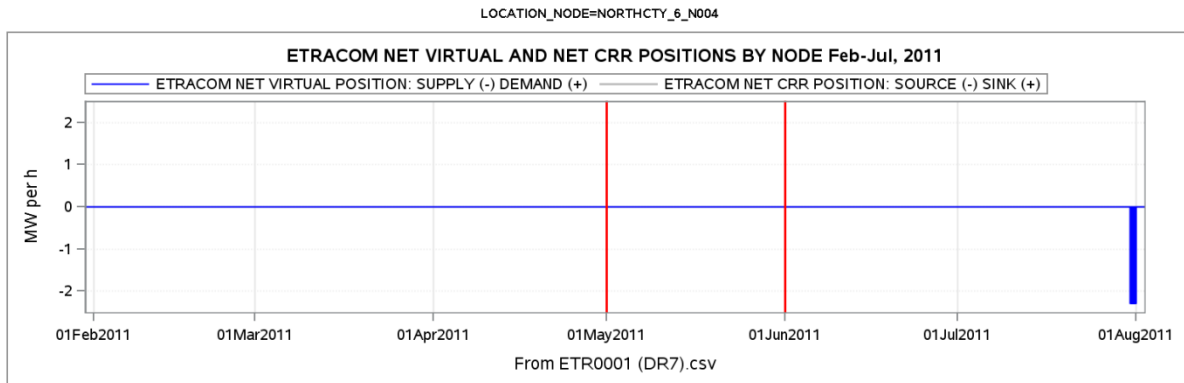


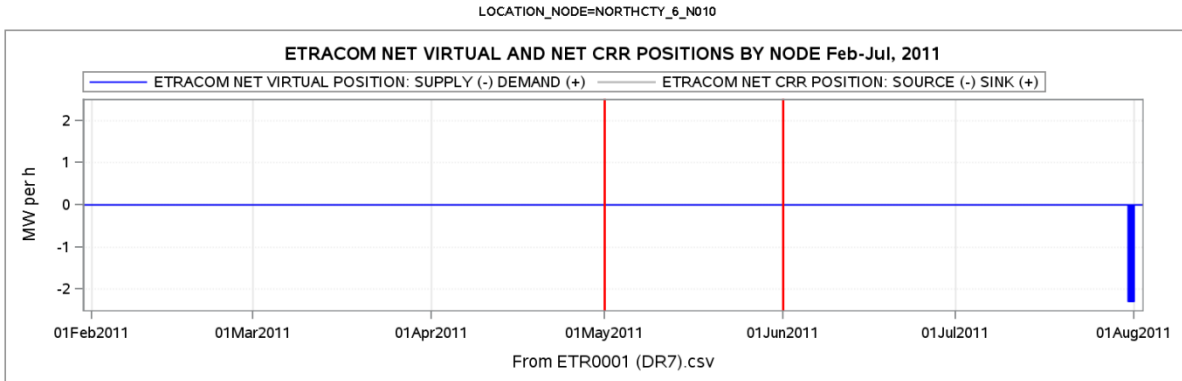


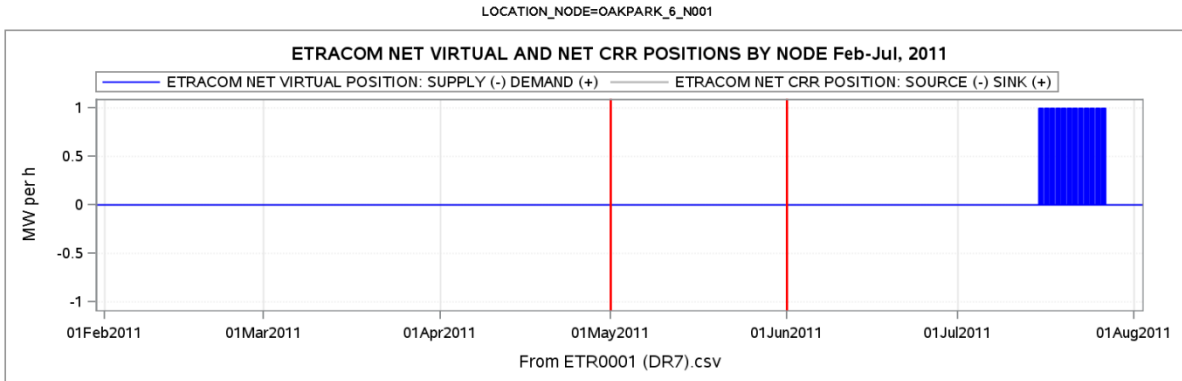


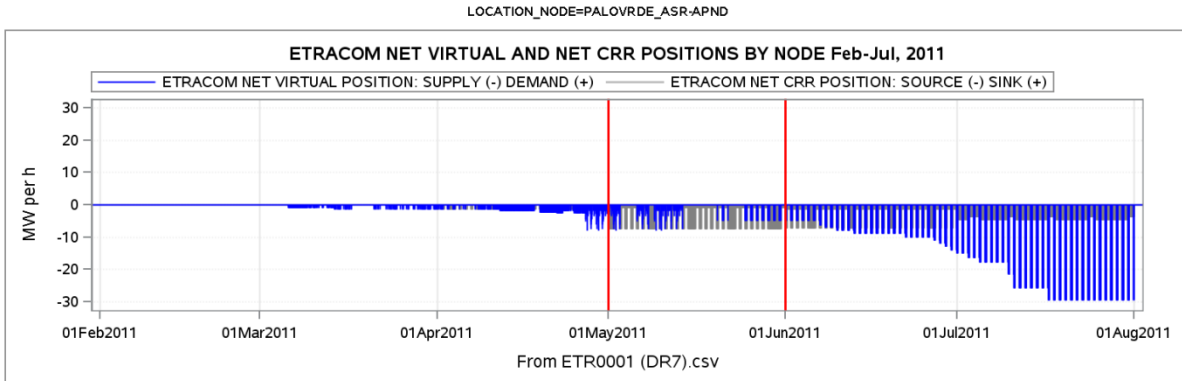


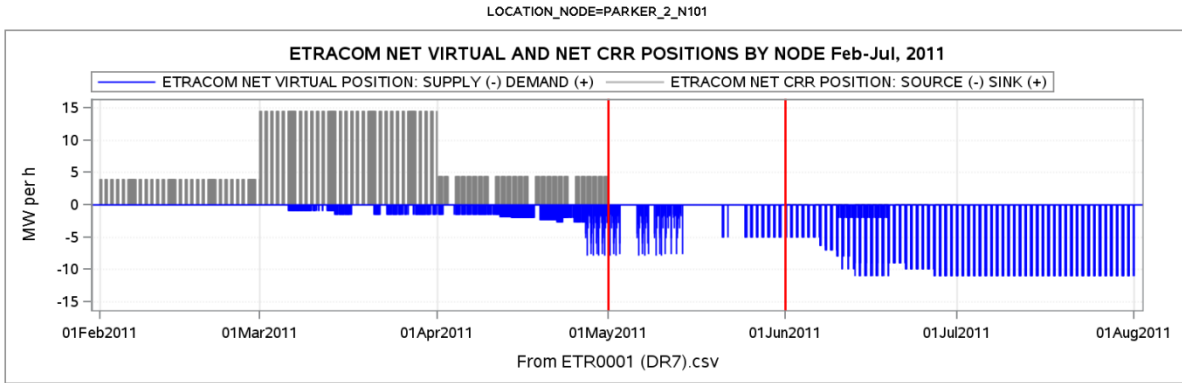


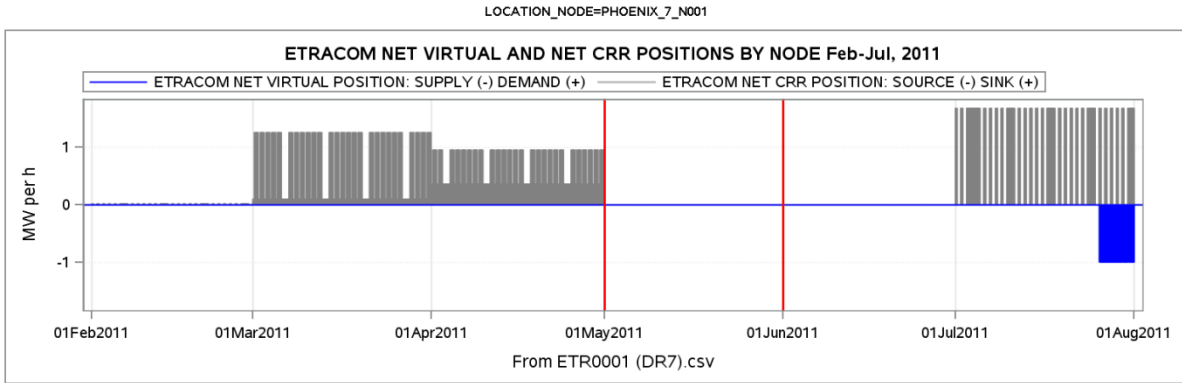




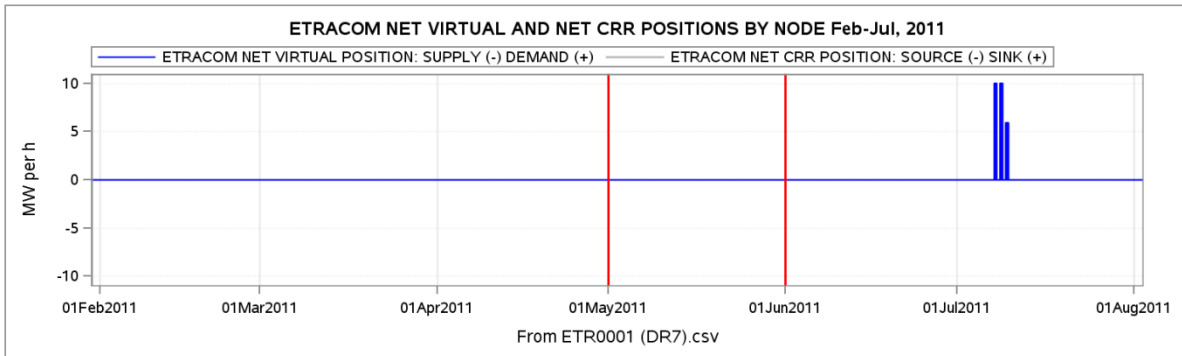


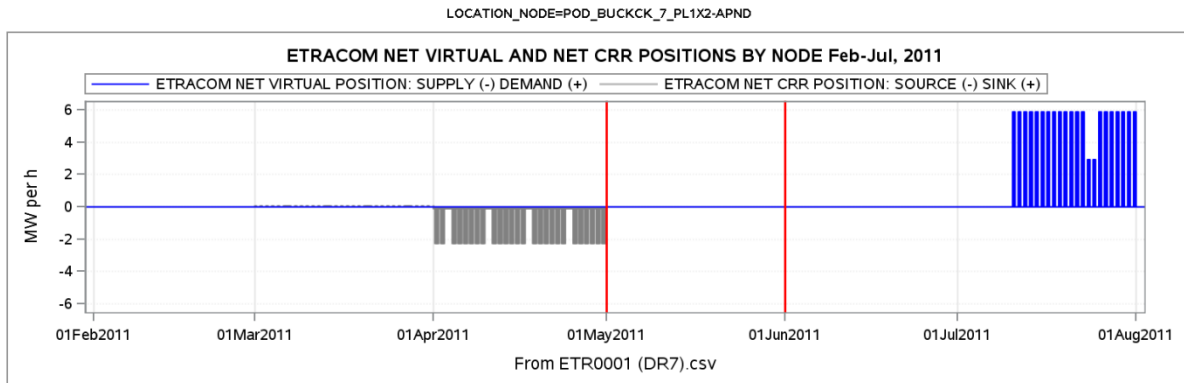




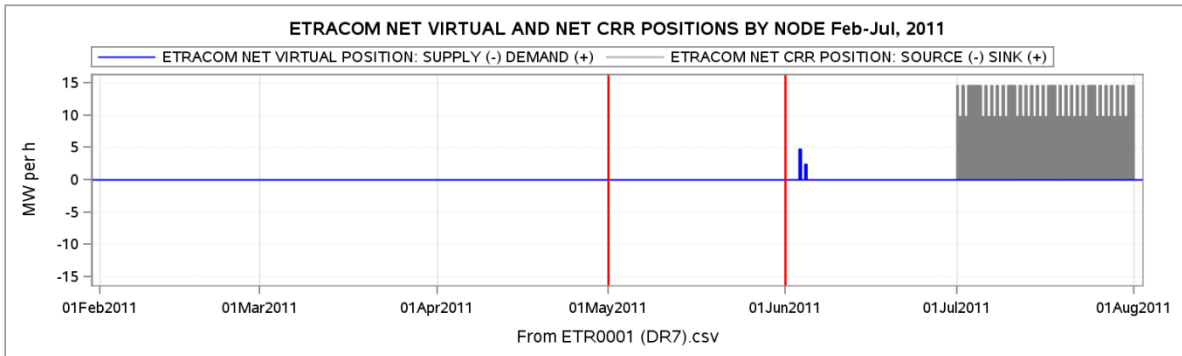


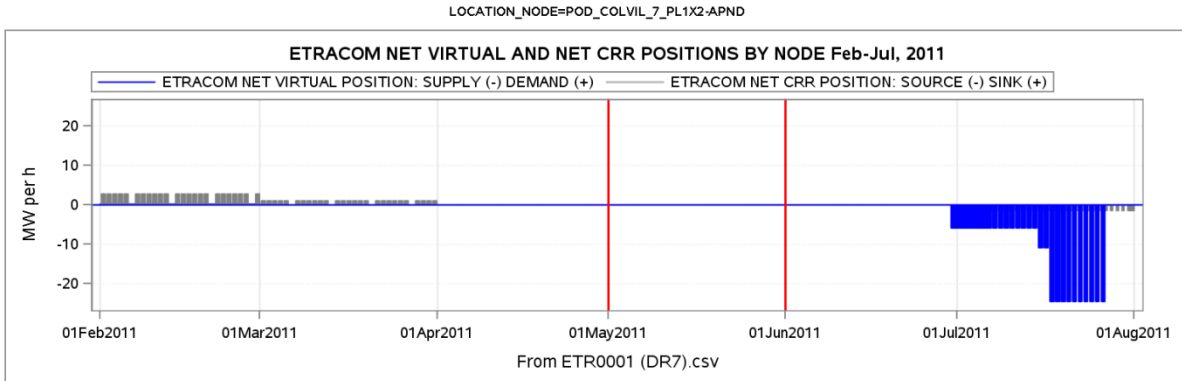
LOCATION_NODE=POD_BUCKBL_2_PL1X3-APND

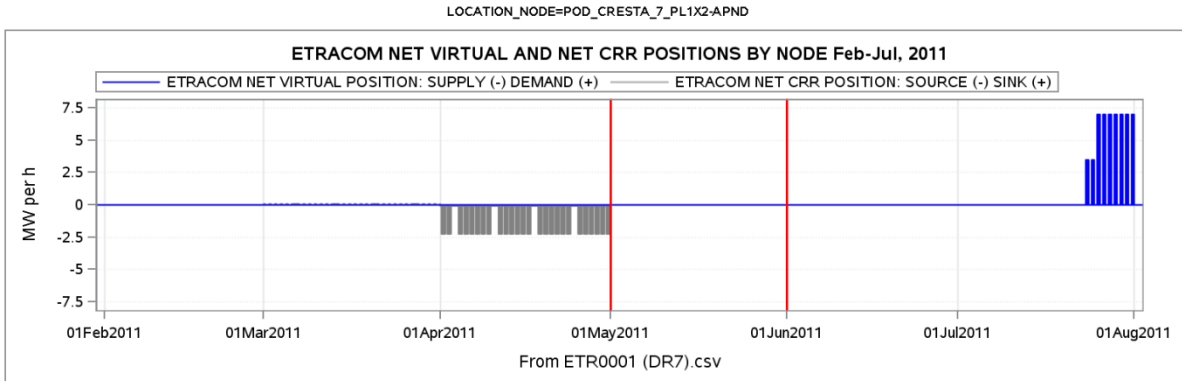


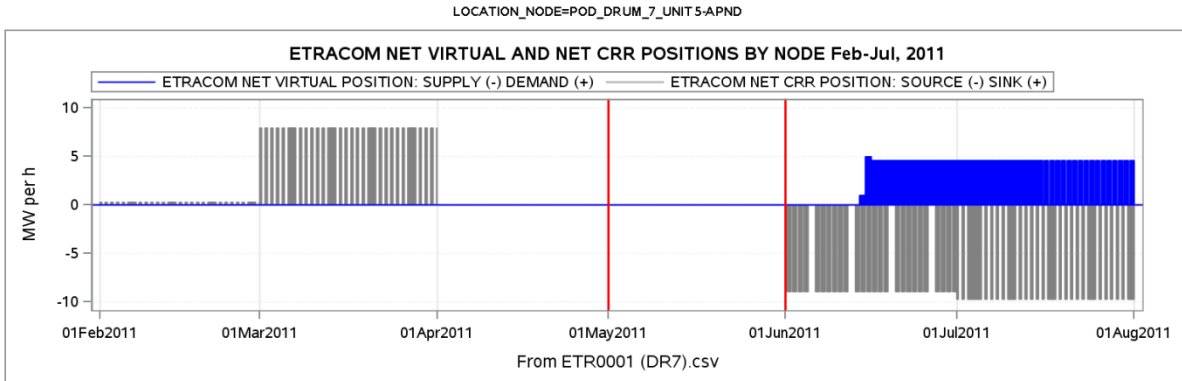


LOCATION_NODE=POD_CHWCHL_1_UNIT-APND

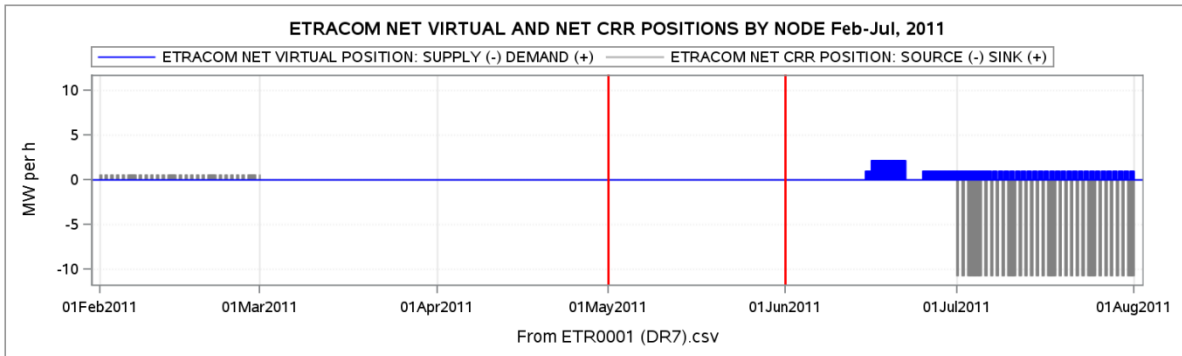


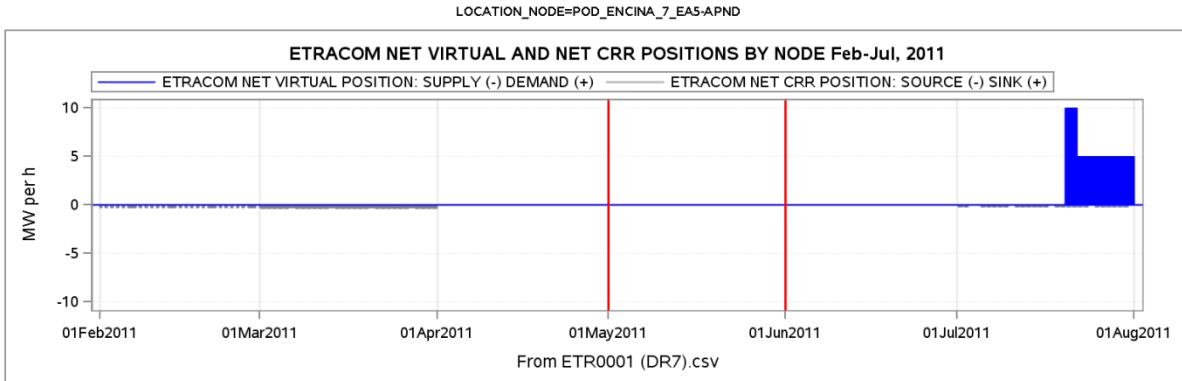




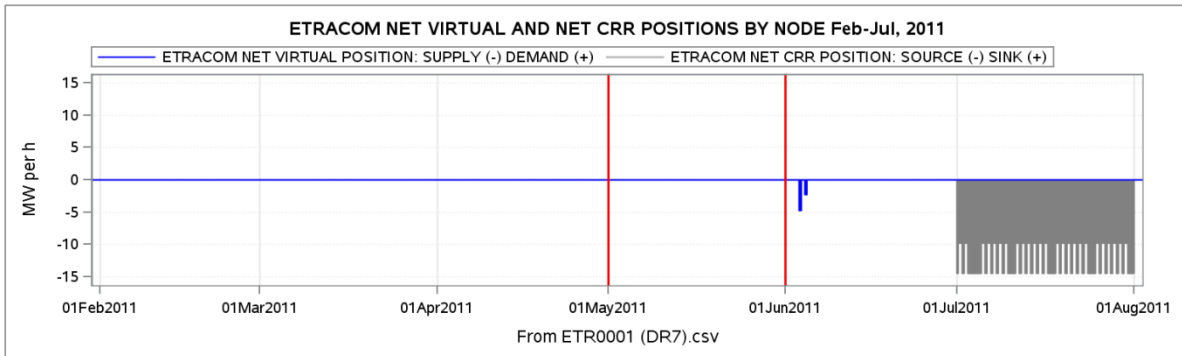


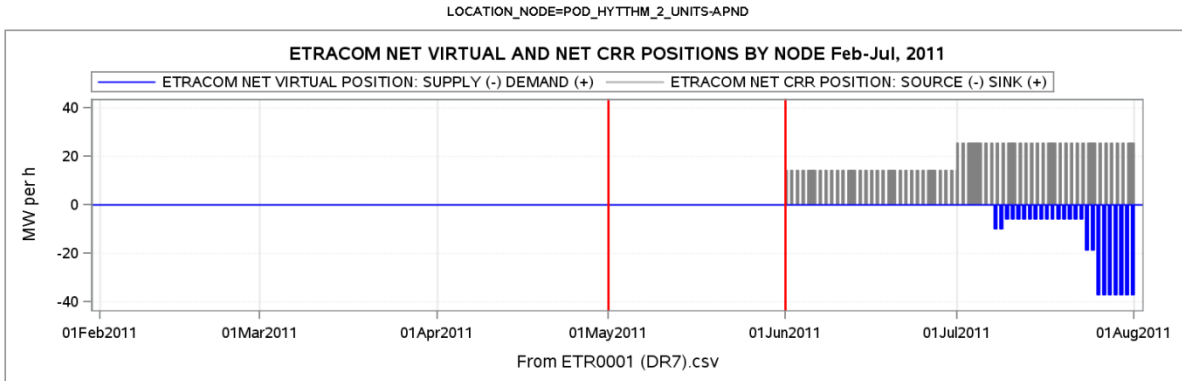
LOCATION_NODE=POD_DUTCH1_7_UNIT 1-APND

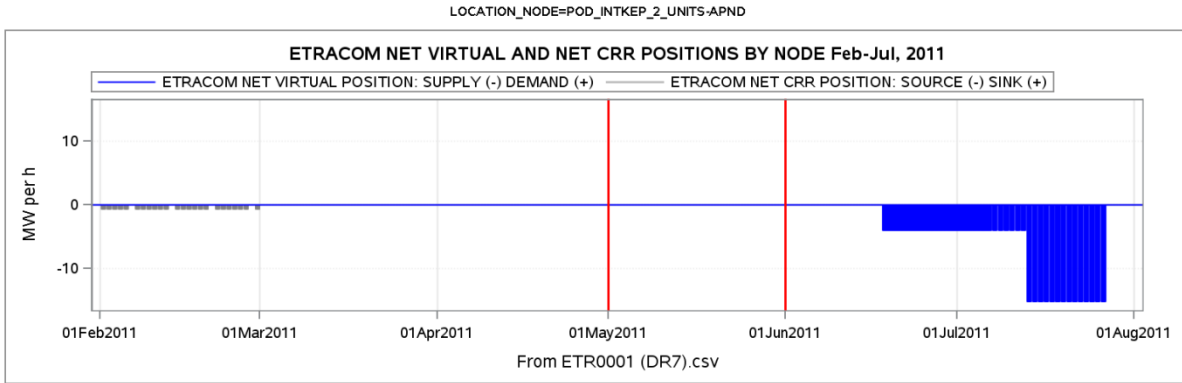


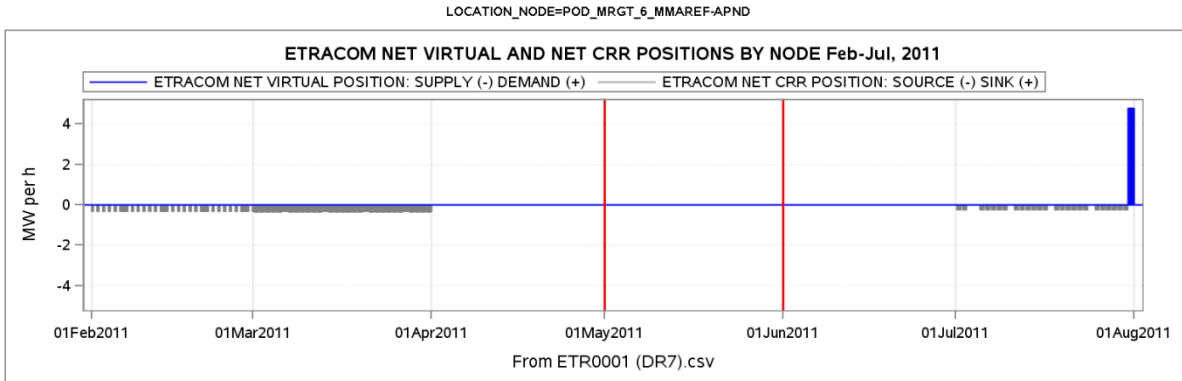


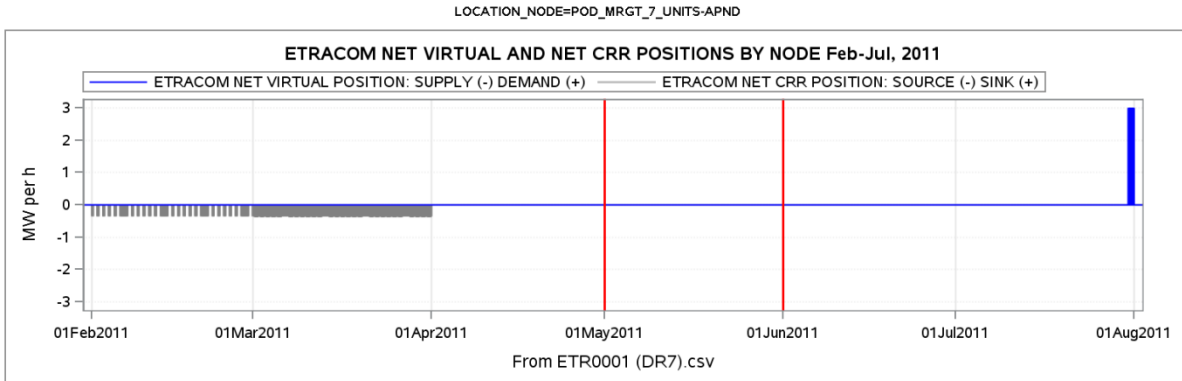
LOCATION_NODE=POD_EXCHEC_7_UNIT 1-APND



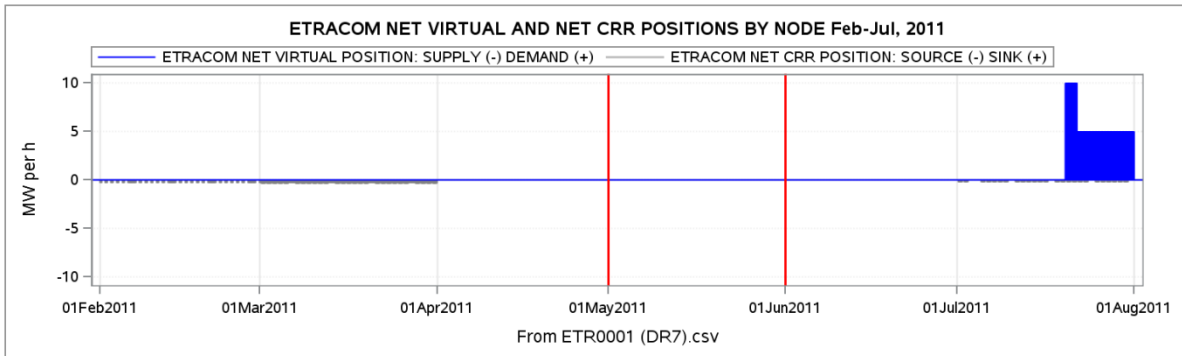


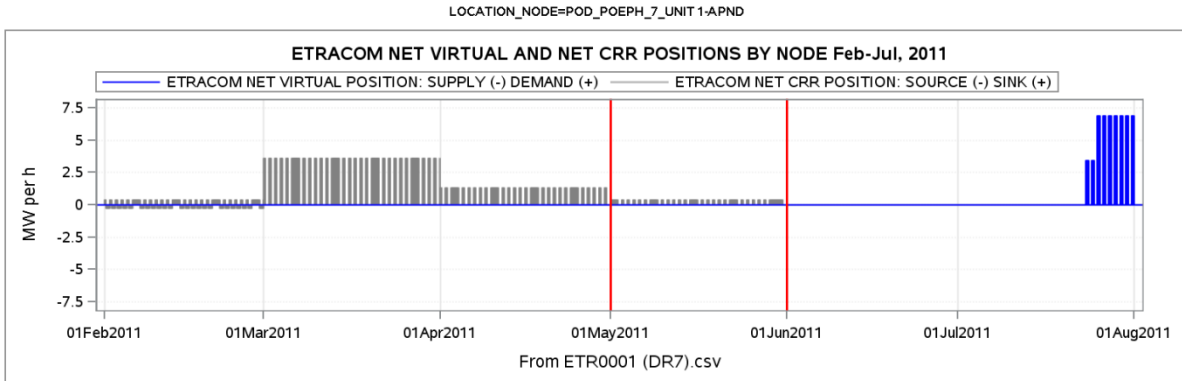


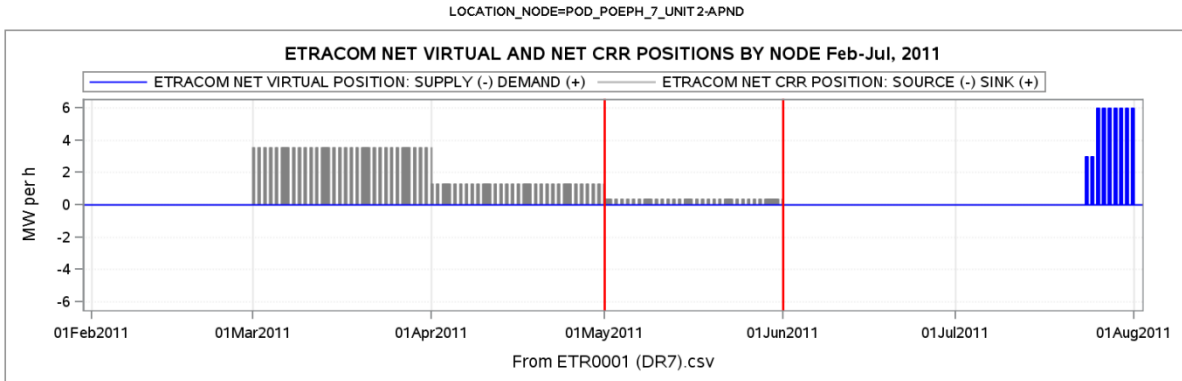


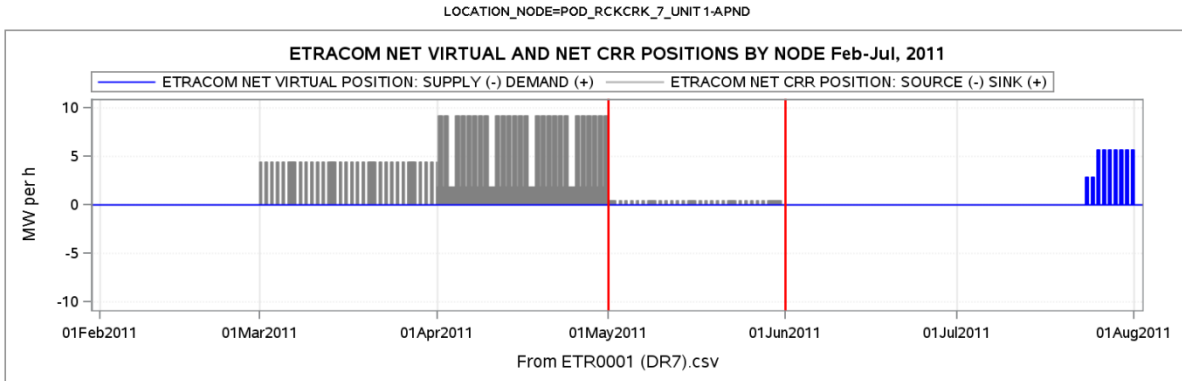


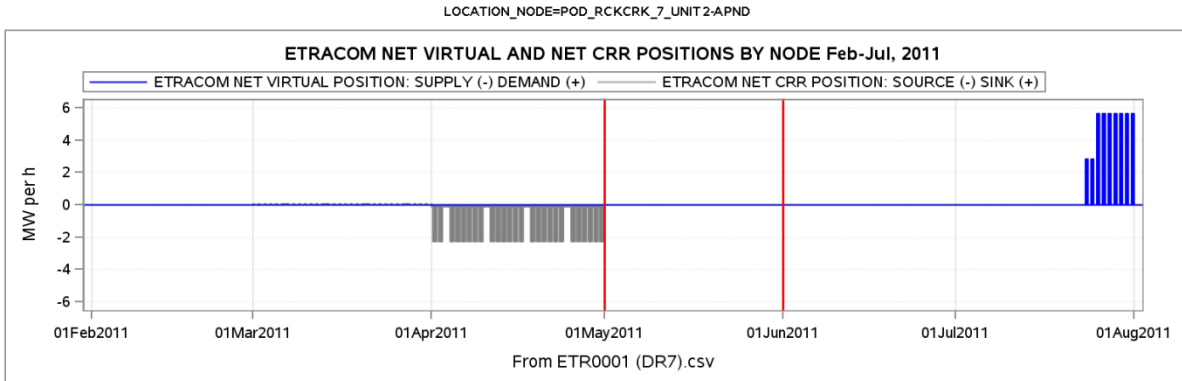
LOCATION_NODE=POD_PALOMR_2_PL1X3-APND

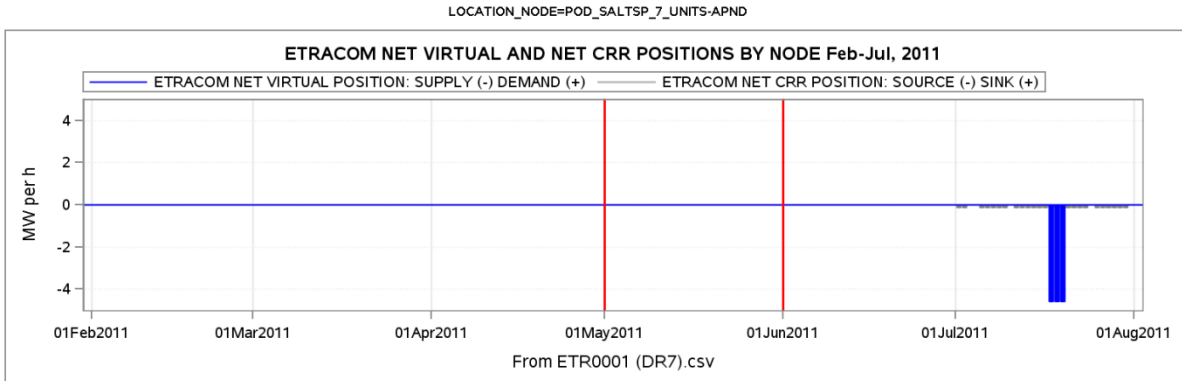


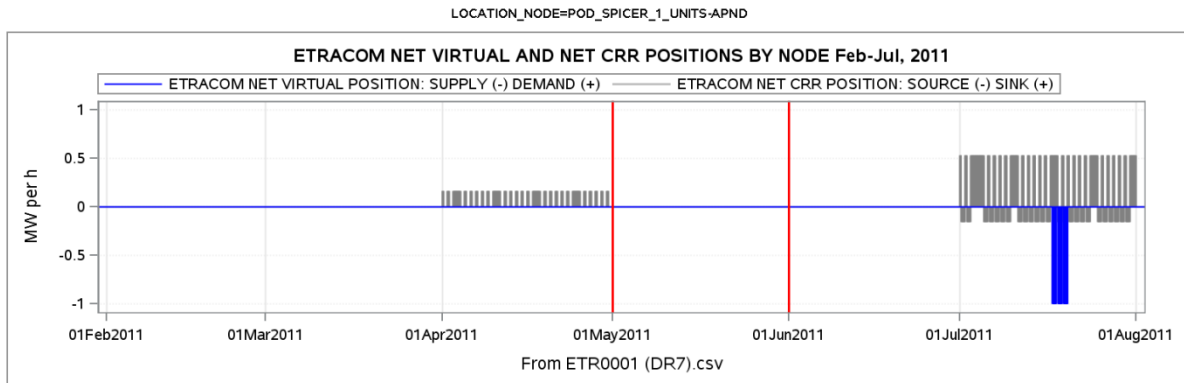


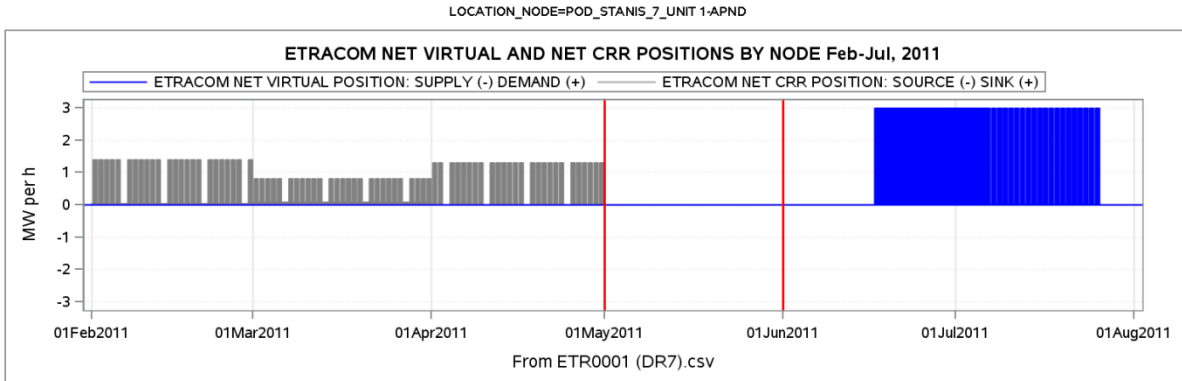


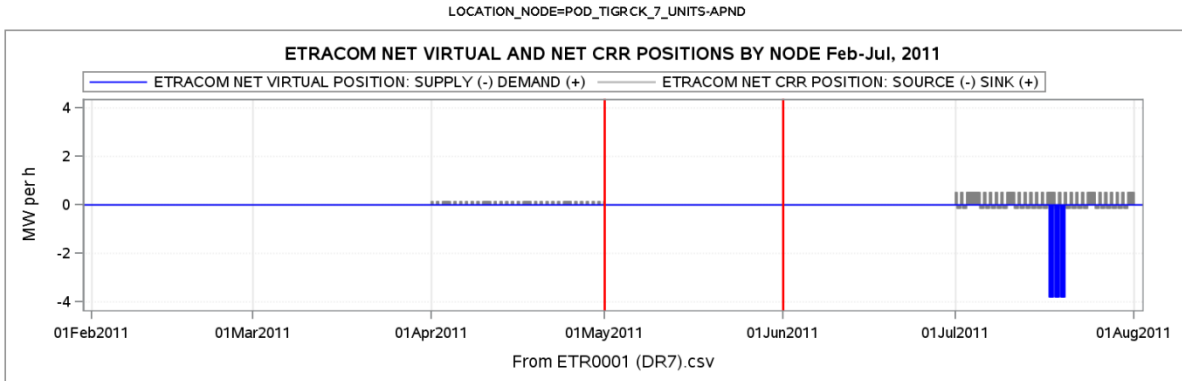


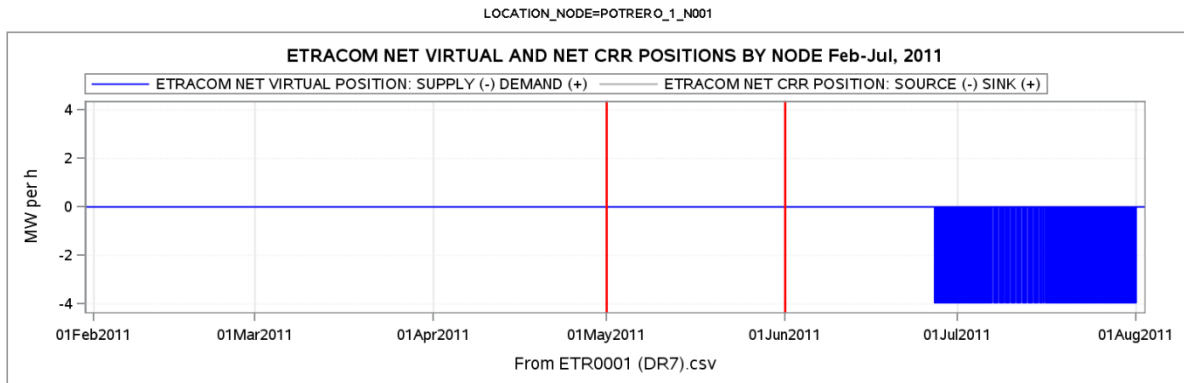


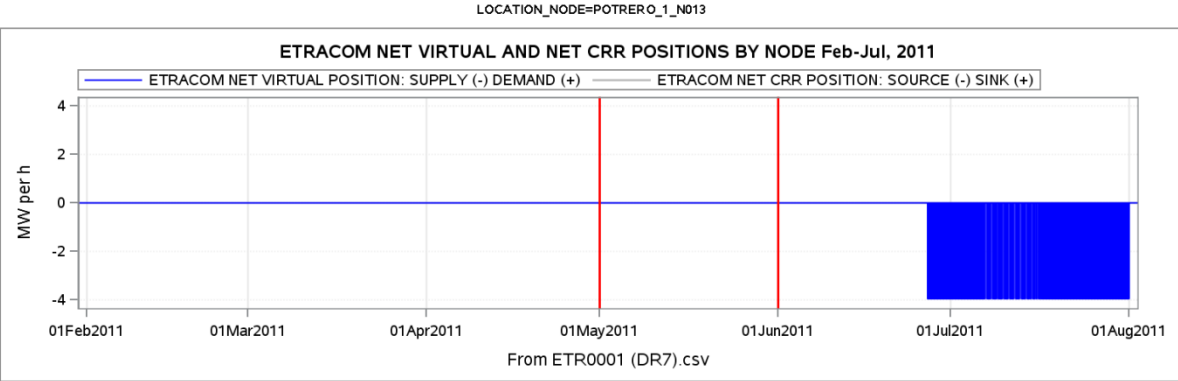


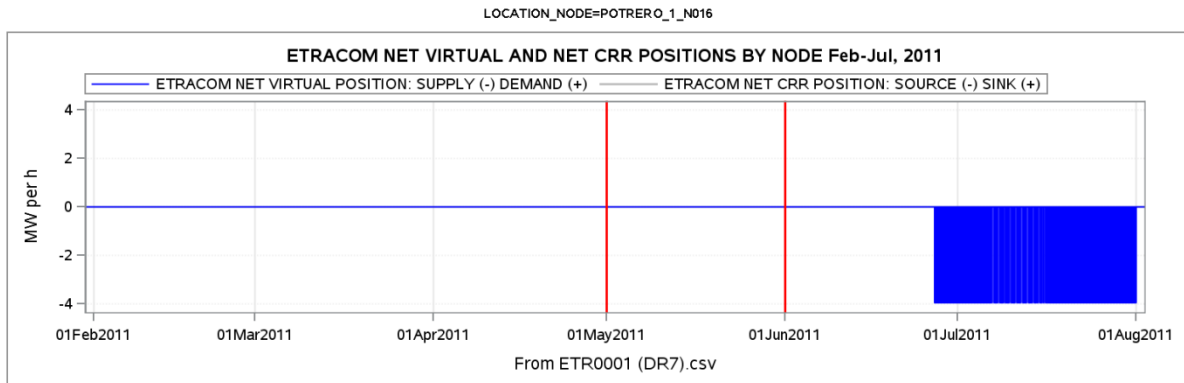




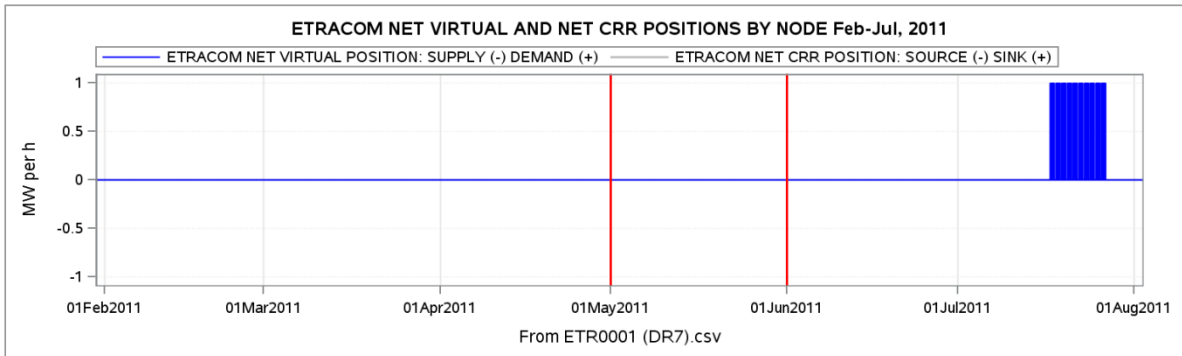


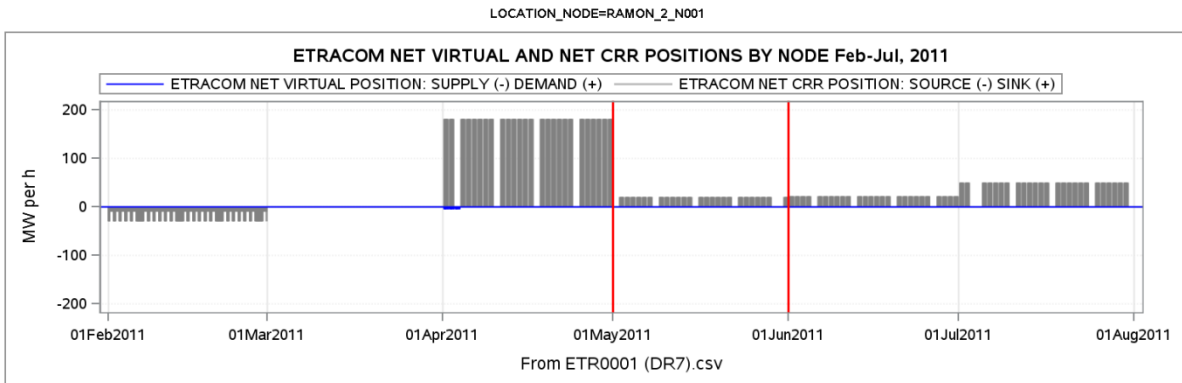


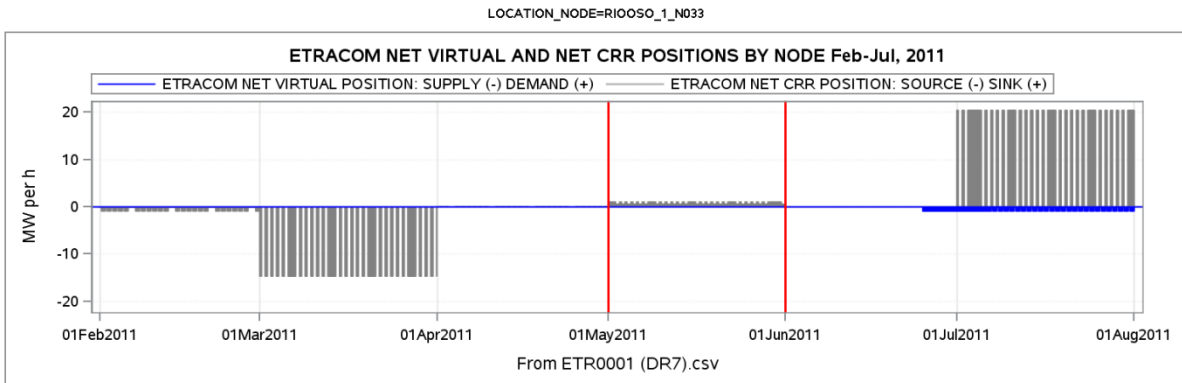


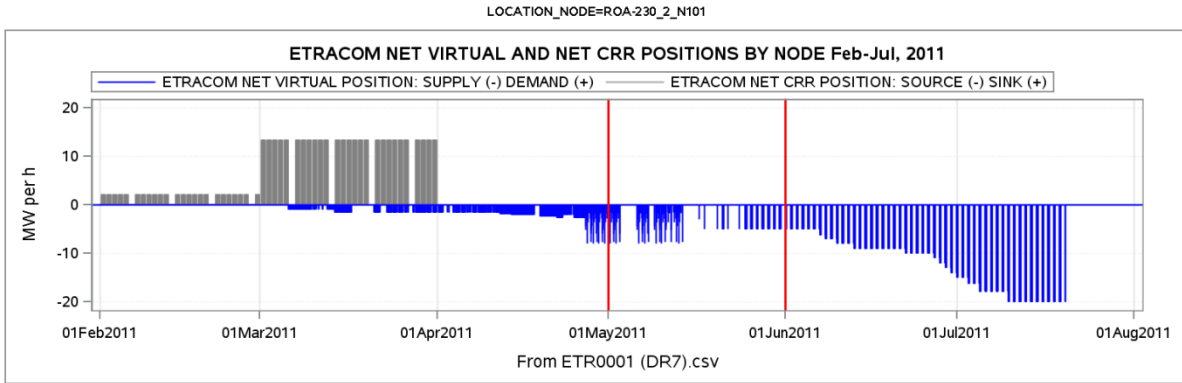


LOCATION_NODE=PSTCKTN_6_LN001

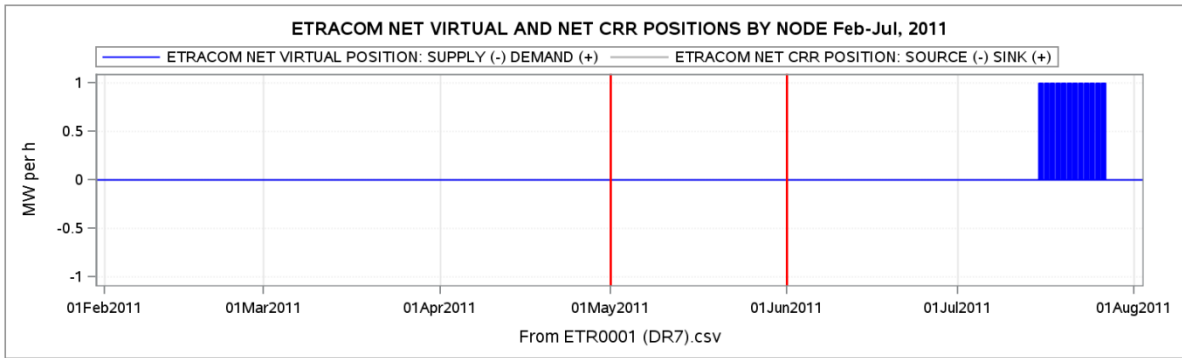


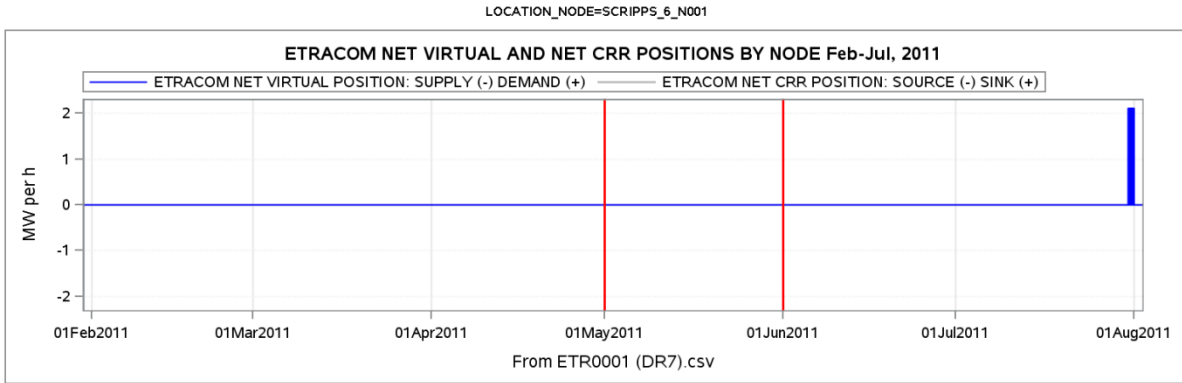


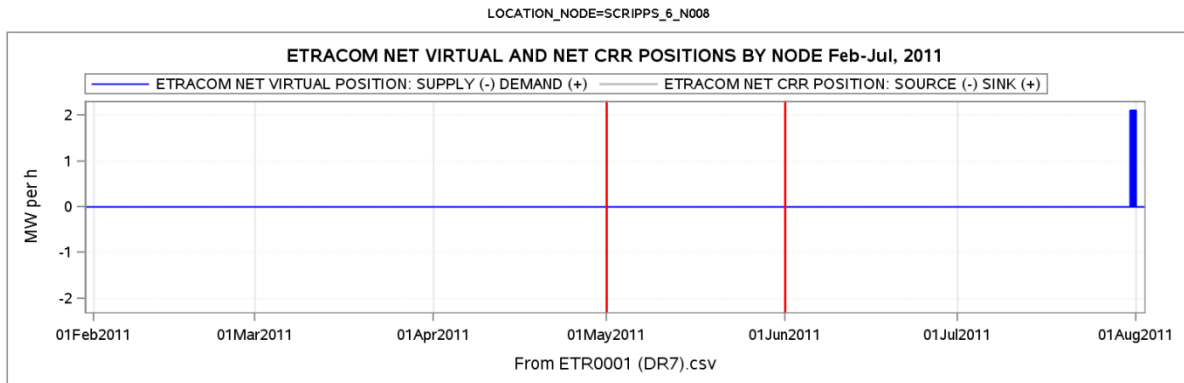




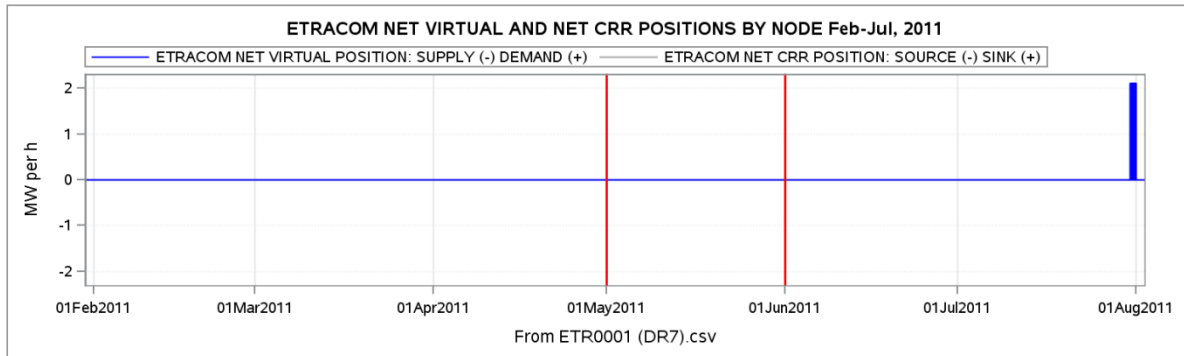
LOCATION_NODE=ROGH-RDY_6_N001

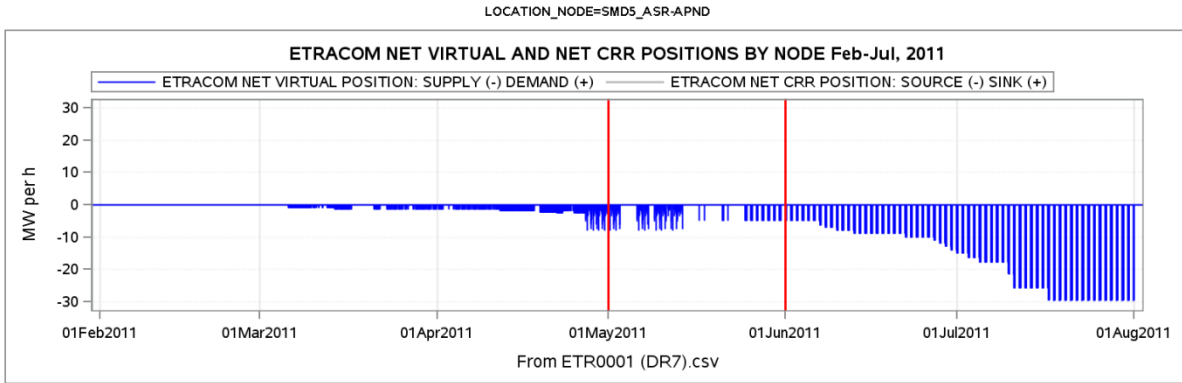


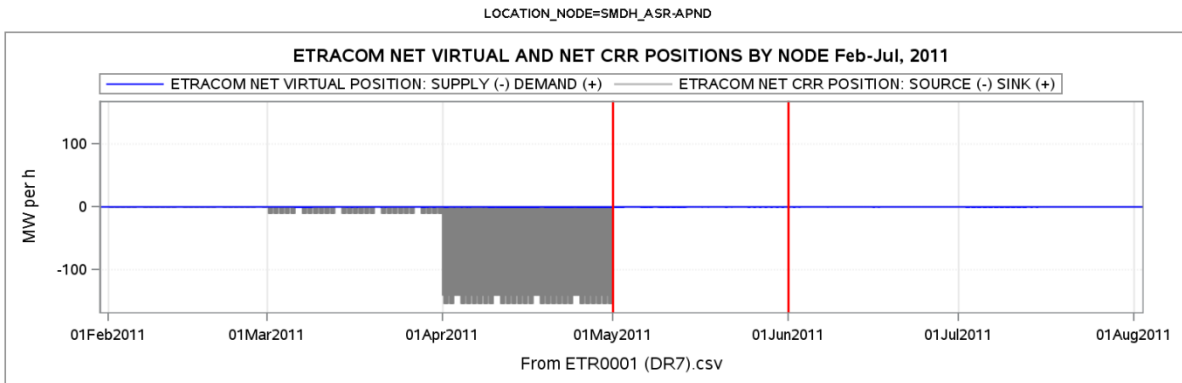


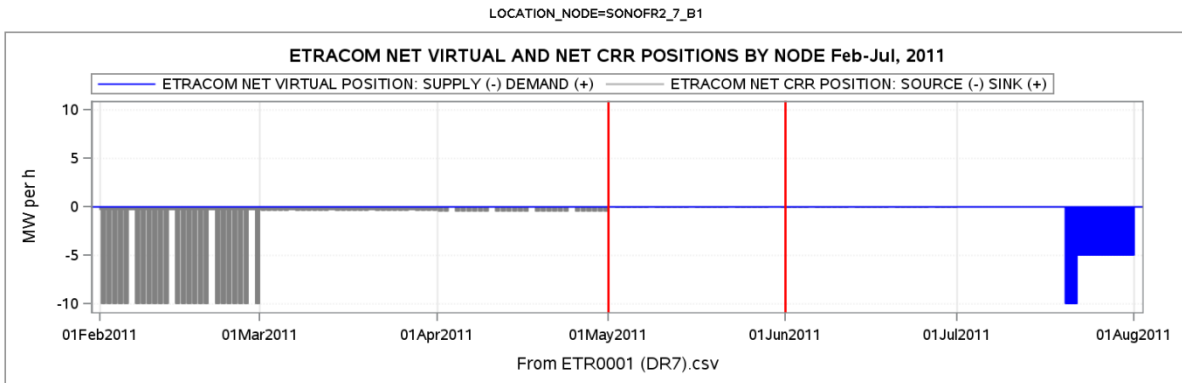


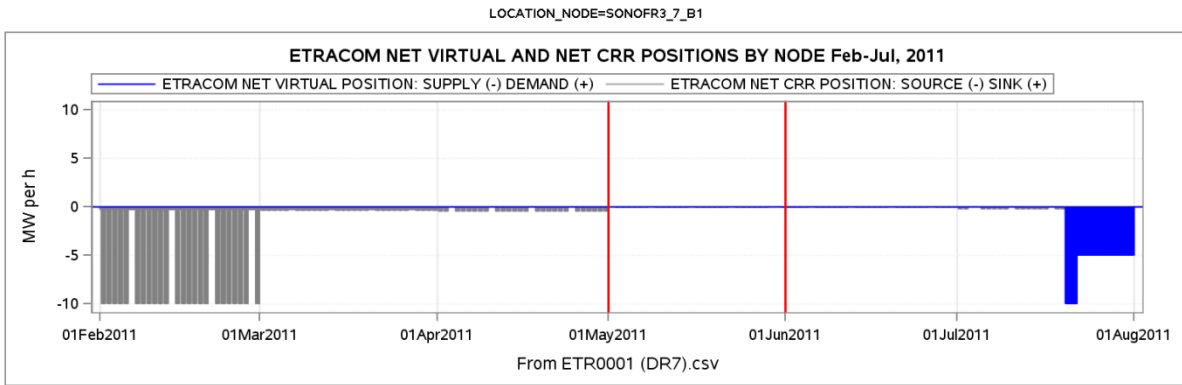
LOCATION_NODE=SCRIPPS_6_N013

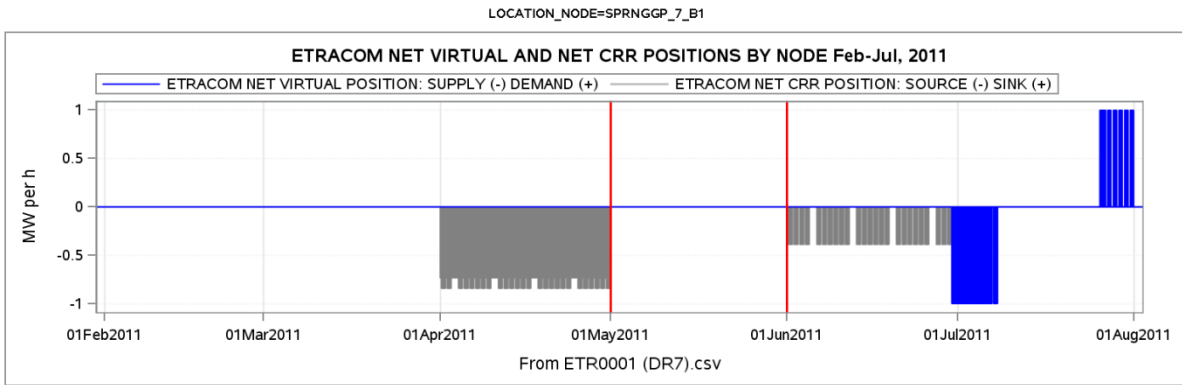




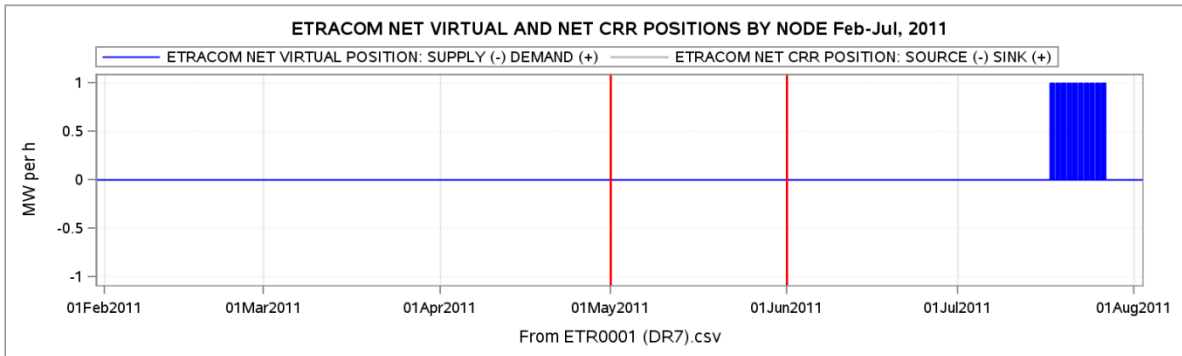


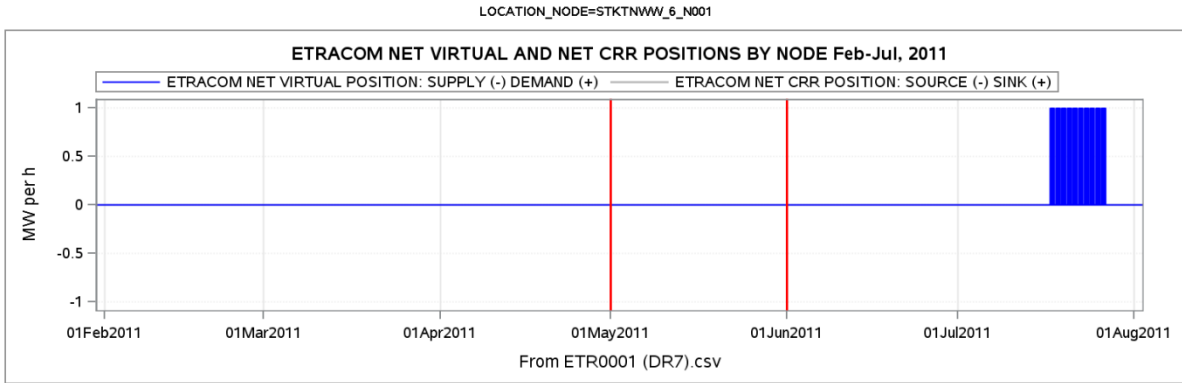


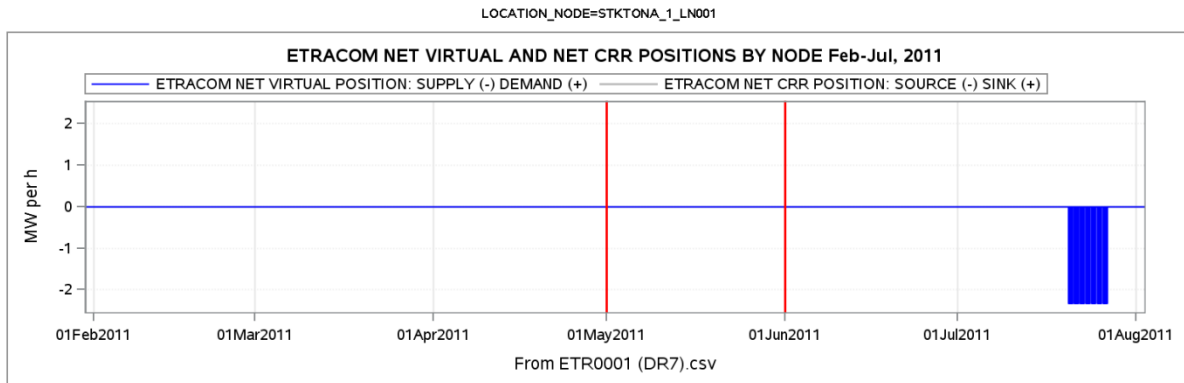


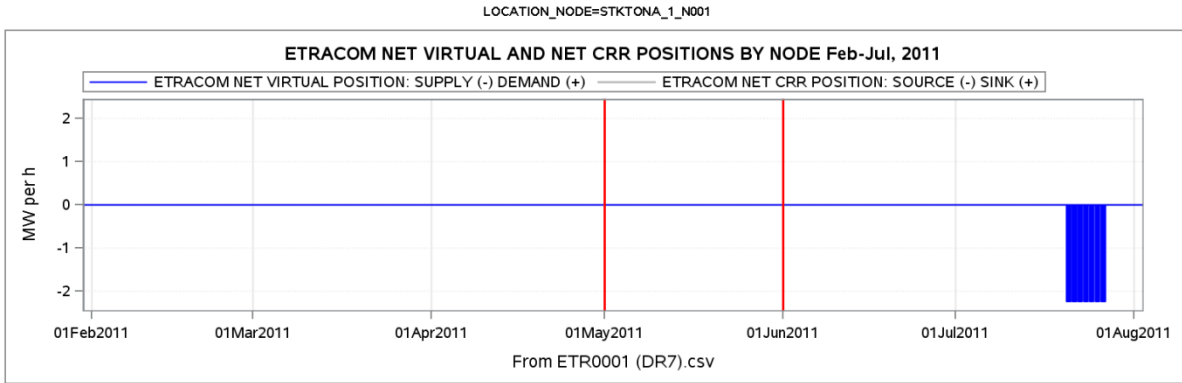


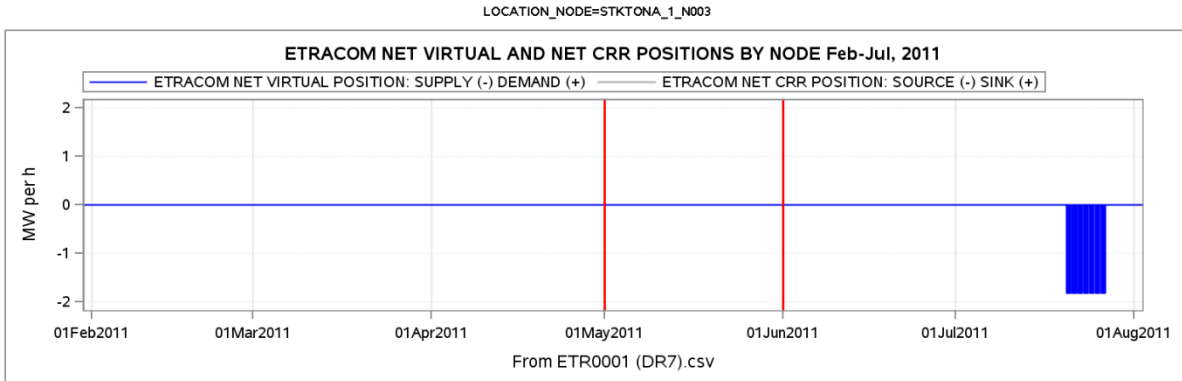
LOCATION_NODE=STCKTNAR_6_N001

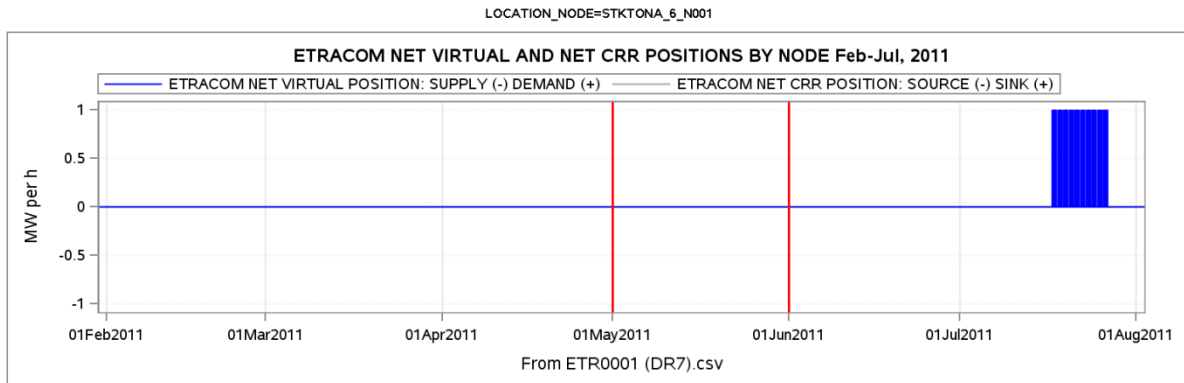




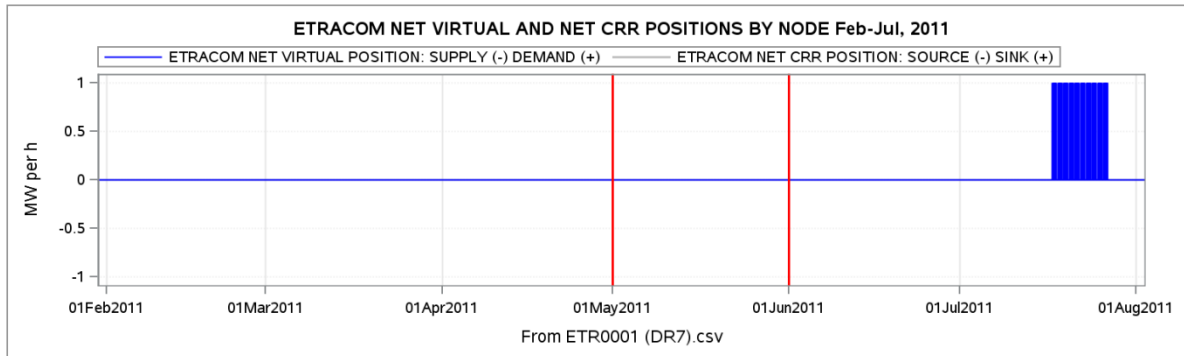


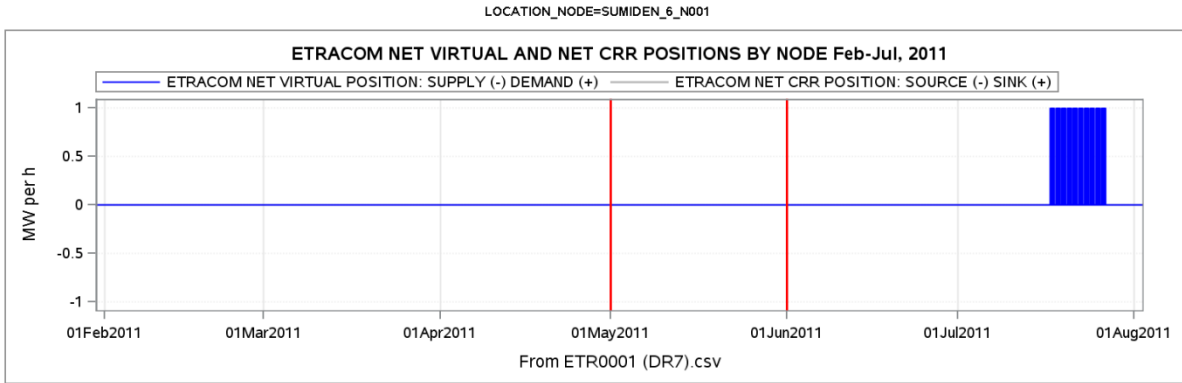


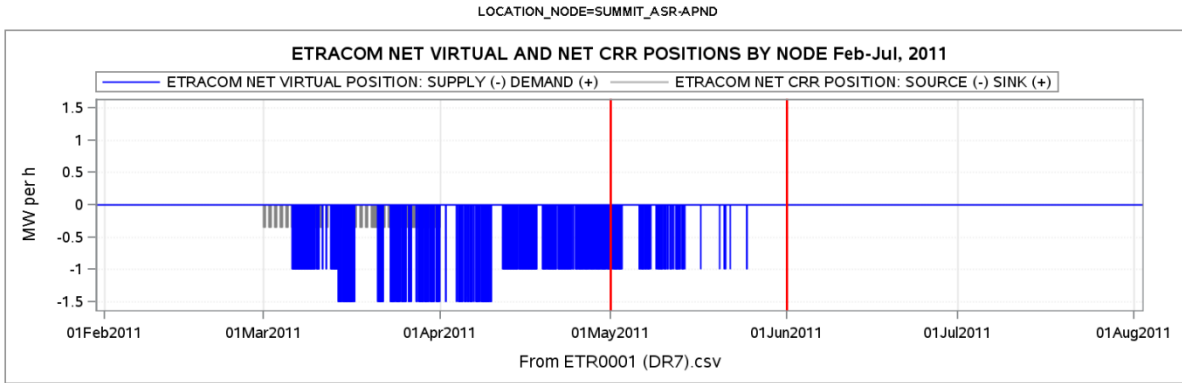


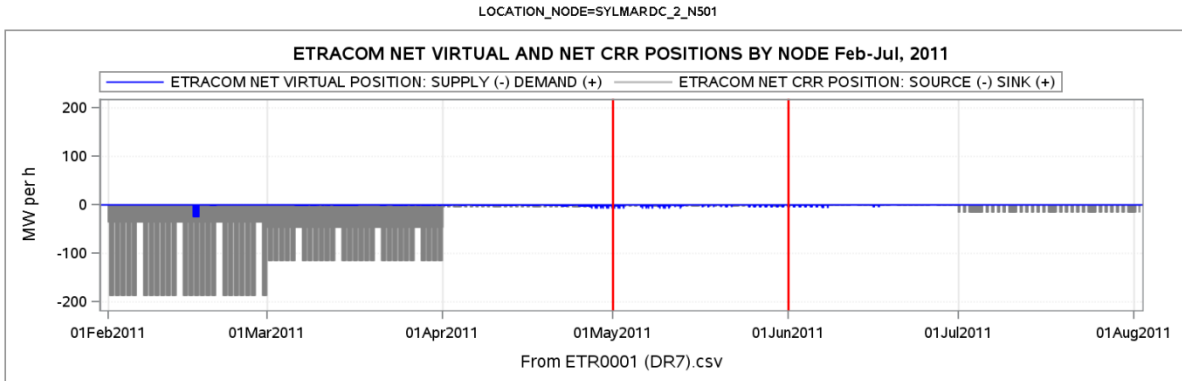


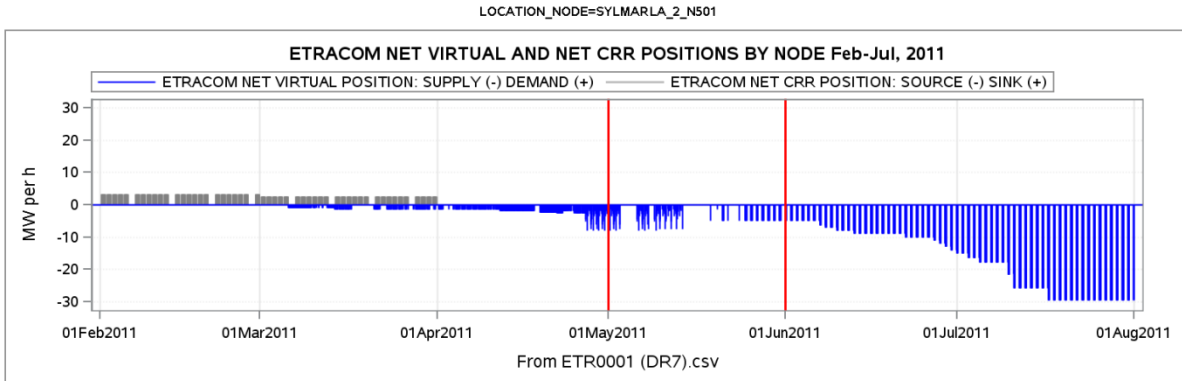
LOCATION_NODE=STKTONA_6_N004

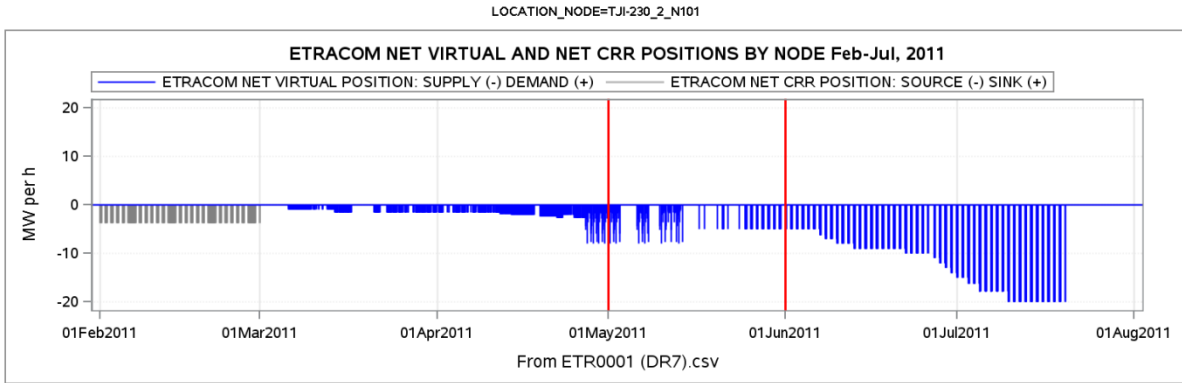


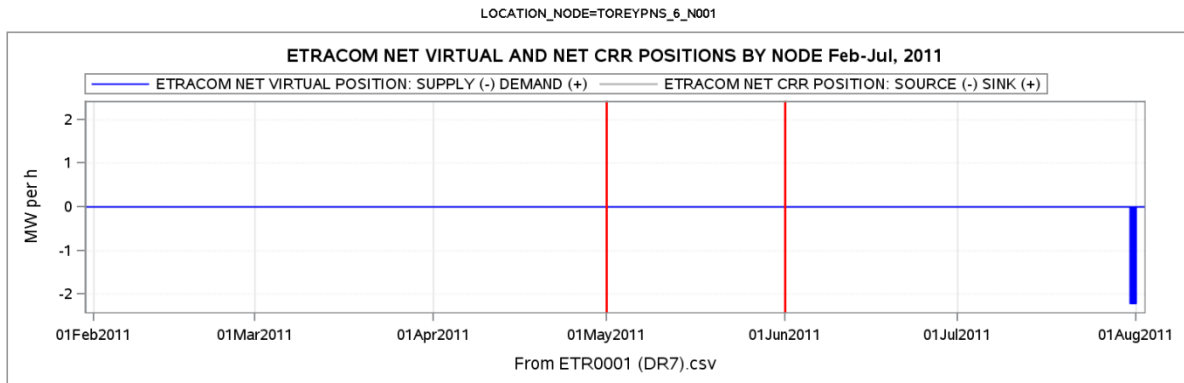


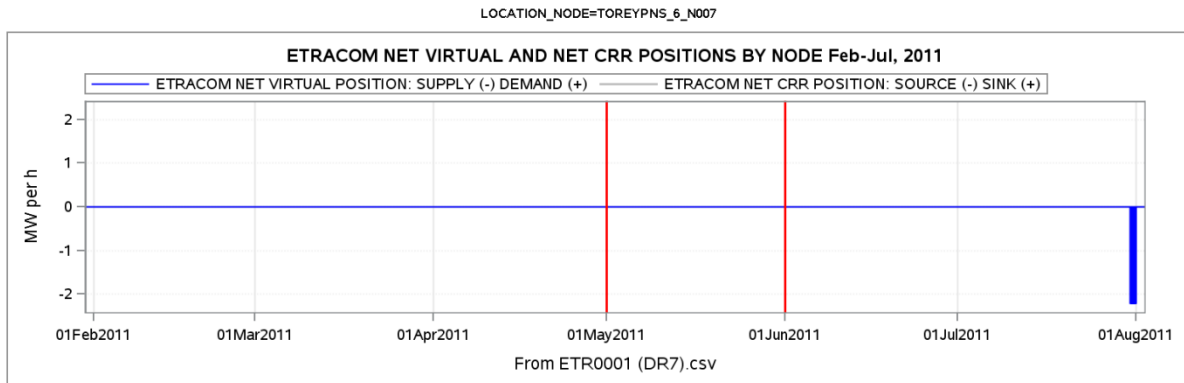


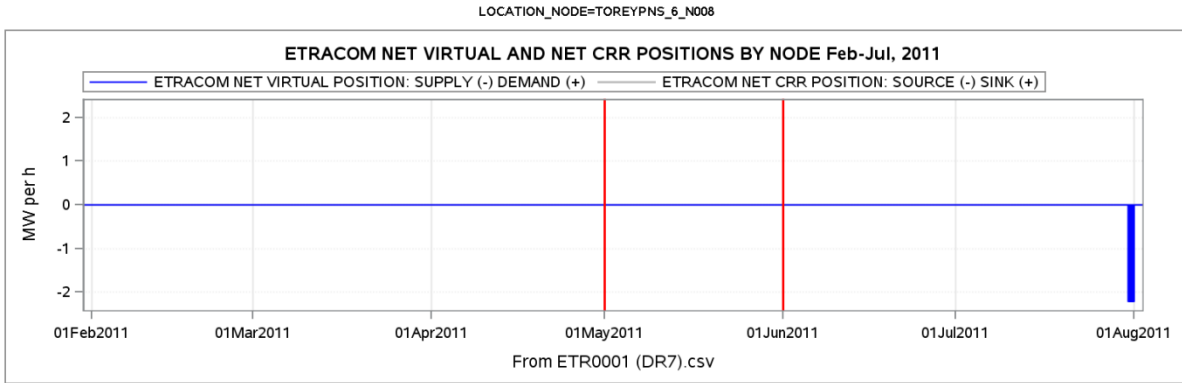


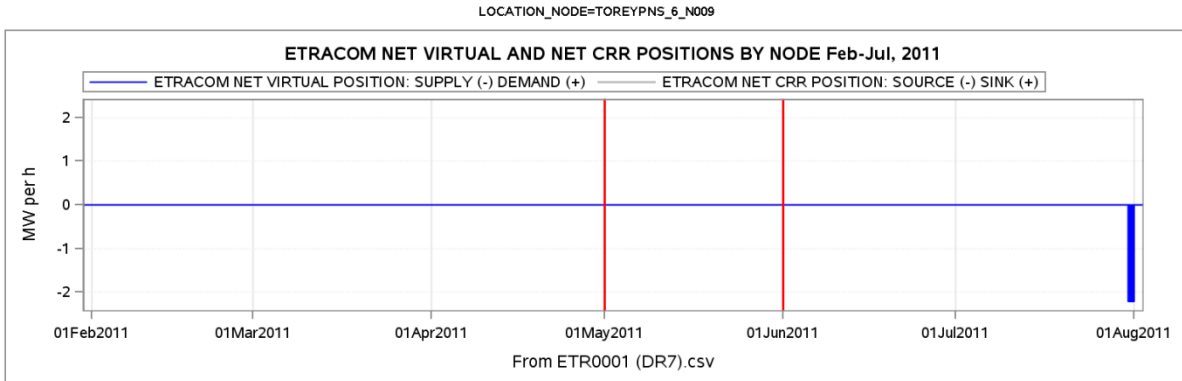




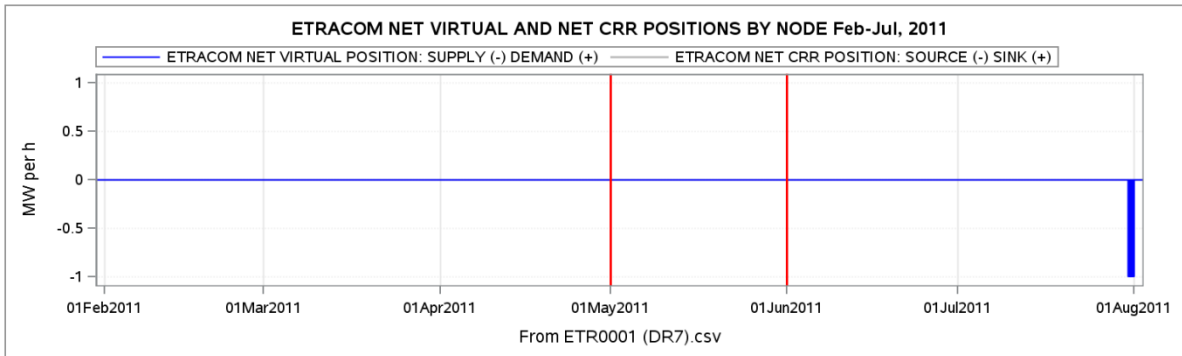




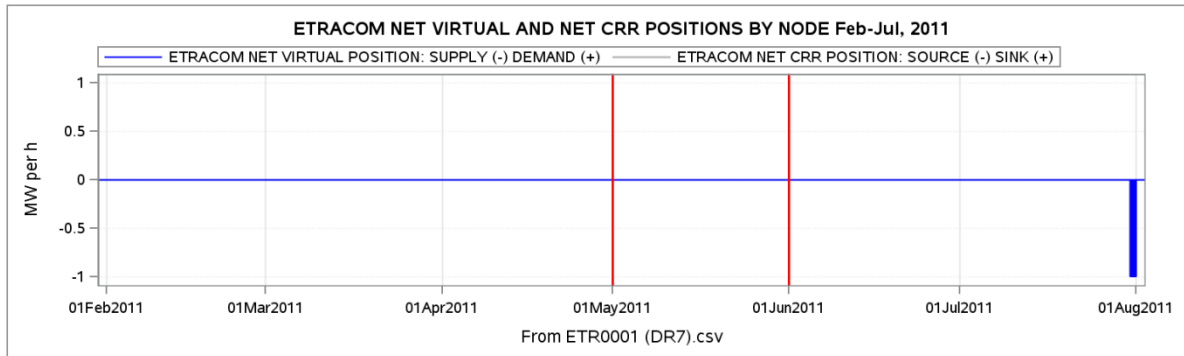




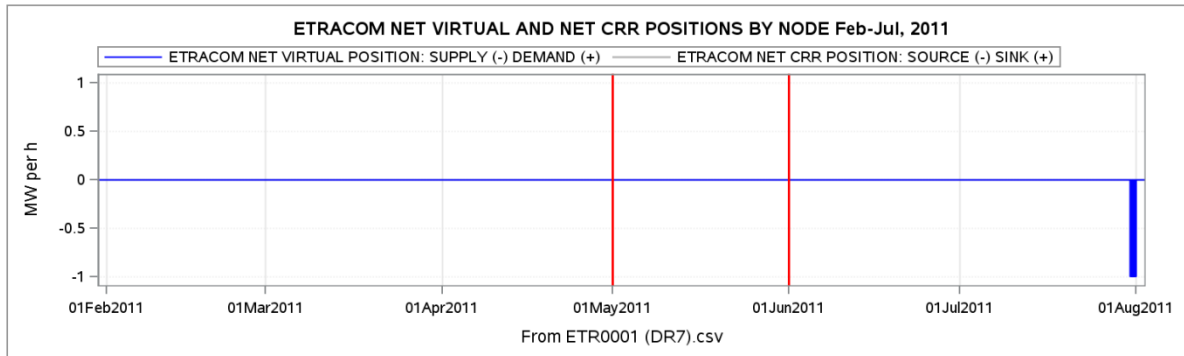
LOCATION_NODE=UCM_6_N001

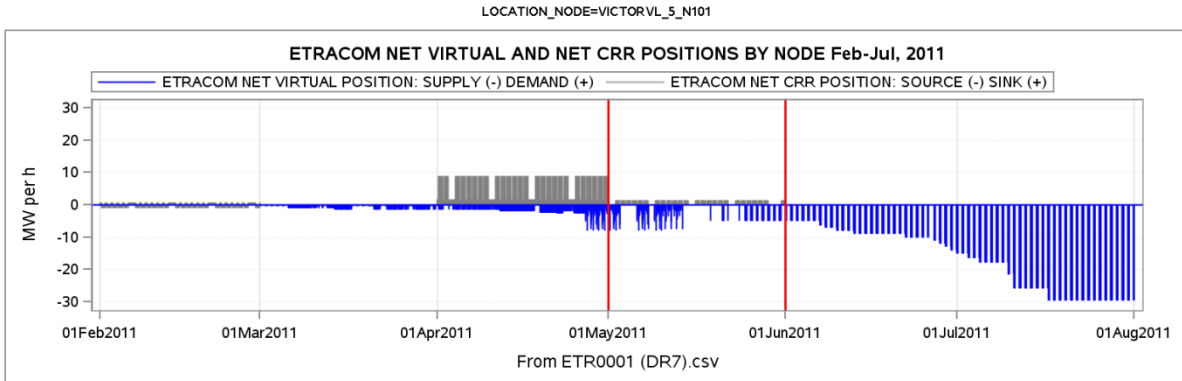


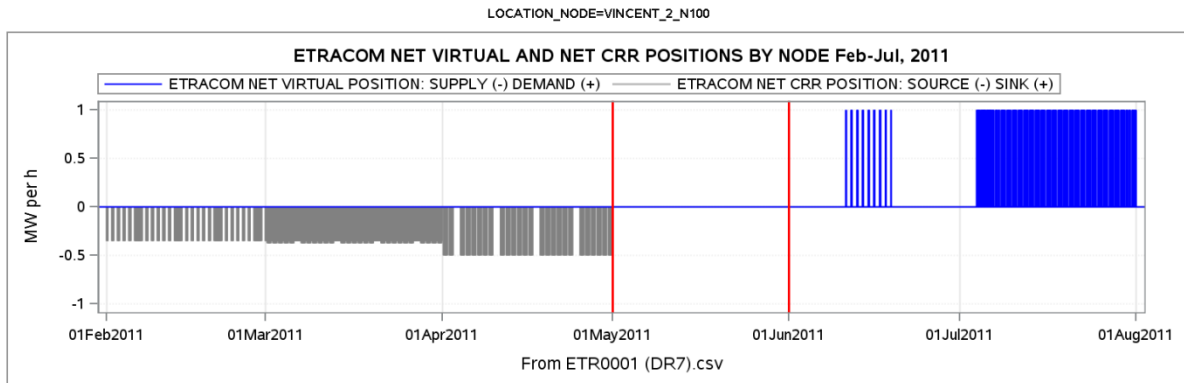
LOCATION_NODE=UCM_6_N002

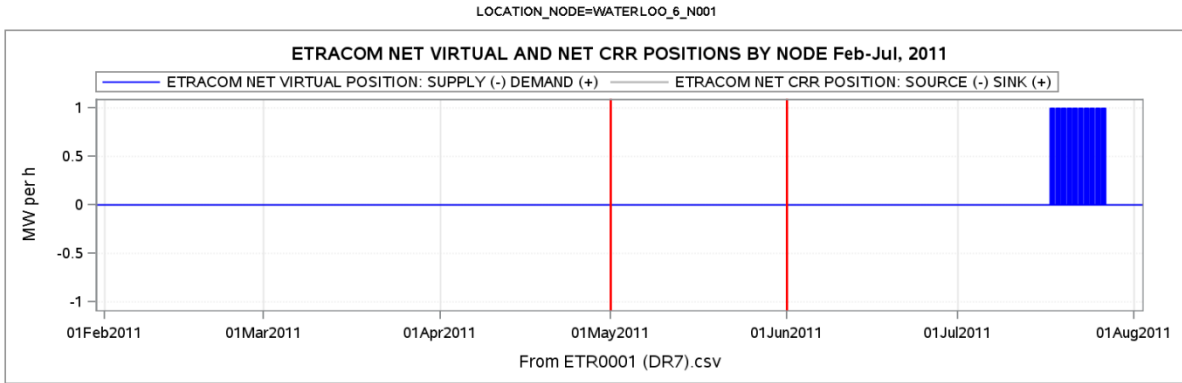


LOCATION_NODE=UCM_6_N006

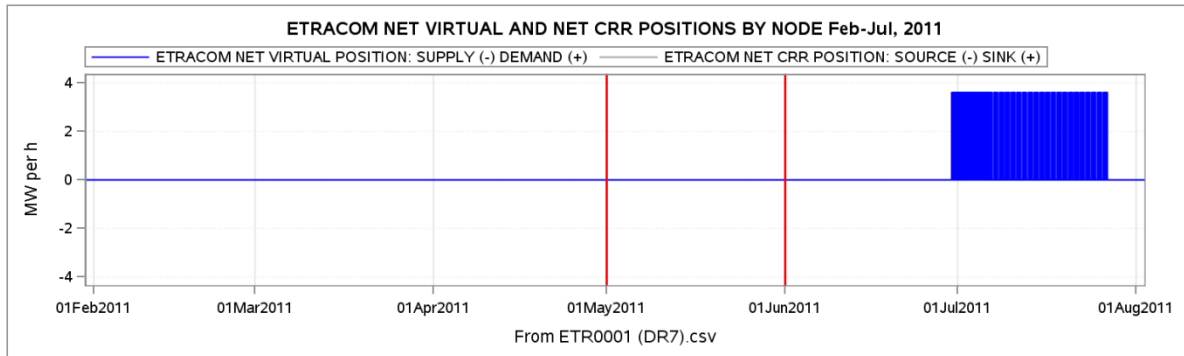


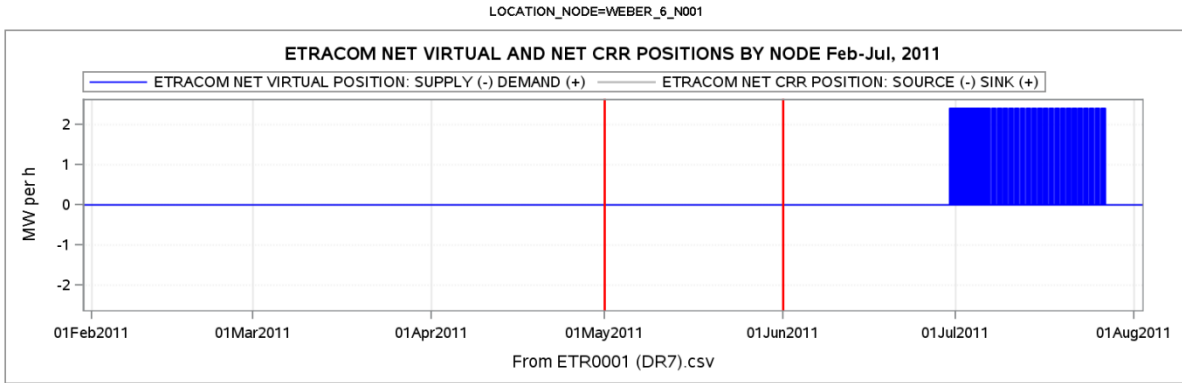


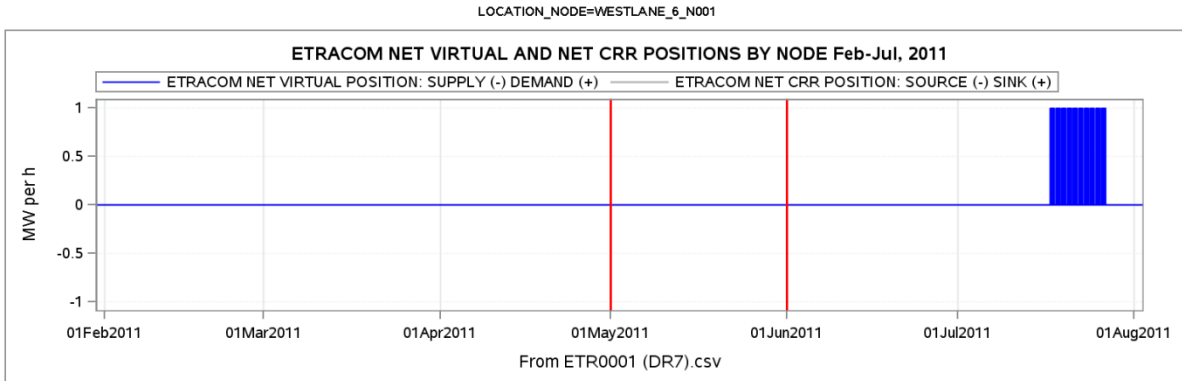




LOCATION_NODE=WEBER_2_B1







LOCATION_NODE=WILSONAB_1_N001

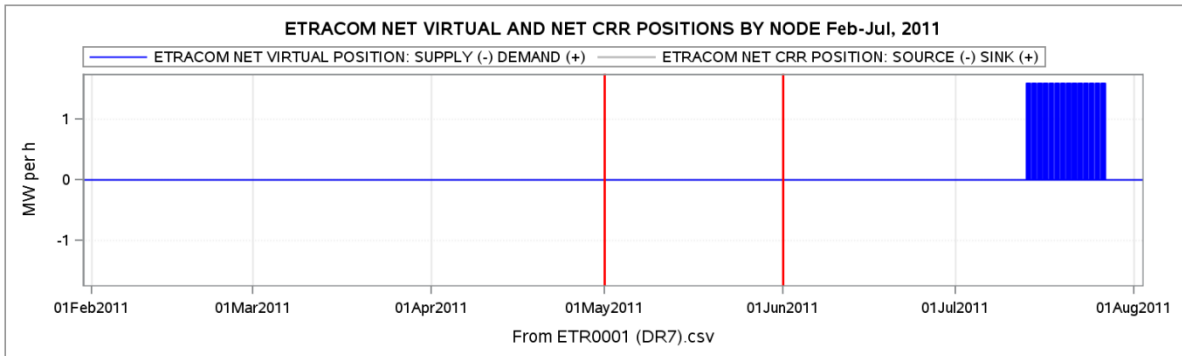


EXHIBIT 2

153 FERC ¶ 61,314
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

ETRACOM LLC and Michael Rosenberg

Docket No. IN16-2-000

ORDER TO SHOW CAUSE AND NOTICE OF PROPOSED PENALTY

(Issued December 16, 2015)

1. Pursuant to Rule 209(a)(2) of the Commission's Rules of Practice and Procedure,¹ the Commission's Revised Policy Statement on Enforcement,² and the Commission's Statement of Administrative Policy Regarding the Process for Assessing Civil Penalties,³ the Commission directs the above-captioned respondents, ETRACOM LLC (ETRACOM) and its principal member and primary trader Michael Rosenberg (together, Respondents), to show cause: (i) why they should not be found to have violated section 1c.2 of the Commission's regulations and section 222 of the Federal Power Act (FPA),⁴ by submitting virtual supply transactions at the New Melones intertie (New Melones) at the border of the California Independent System Operator (CAISO) wholesale electric market in order to affect power prices and economically benefit ETRACOM's Congestion Revenue Rights (CRRs) sourced at that location; (ii) why ETRACOM should not pay a civil penalty in the amount of \$2,400,000; (iii) why Rosenberg should not pay a civil penalty in the amount of \$100,000 and (iv) why ETRACOM should not disgorge

¹ 18 C.F.R. § 385.209(a)(2) (2015).

² *Enforcement of Statutes, Regulations and Orders*, 123 FERC ¶ 61,156, at PP 35-36 (2008).

³ *Process for Assessing Civil Penalties*, 117 FERC ¶ 61,317, at P 5 (2006).

⁴ 16 U.S.C. § 824v, as amended, and the Commission's "Prohibition of electric energy market manipulation" (Anti-Manipulation Rule), 18 C.F.R. § 1c.2 (2015). See *Prohibition of Energy Market Manipulation*, Order No. 670, FERC Stats. & Regs. ¶ 31,202 (2006) ("Order 670"), *reh'g denied*, 114 FERC ¶ 61,300 (2006).

\$315,072 plus interest in unjust profits, or a modification to these amounts as warranted.⁵ Pursuant to Rule 213(a) of the Commission's Rules of Practice and Procedure,⁶ the Commission directs Respondents to file an answer to the allegations with the Commission within 30 days of the date of this order. Office of Enforcement Staff (OE staff) may reply to that answer within 30 days of the filing of Respondent's answer.

2. This case presents allegations by OE staff of Respondents' violation of the Commission's prohibition on market manipulation. The allegations arose out of an investigation conducted by OE staff and are described in the Enforcement Staff Report and Recommendation (OE Staff Report).⁷ Issuance of this Order does not indicate Commission adoption or endorsement of the OE Staff Report.

3. The OE Staff Report alleges that in May 2011, ETRACOM submitted and cleared uneconomic virtual supply transactions intended to artificially lower the day-ahead LMP and create import congestion at New Melones, which greatly benefited ETRACOM's Congestion Revenue Rights (CRR) positions sourced at New Melones. Rosenberg developed and implemented both the CRR and the virtual trading strategies for ETRACOM in May 2011 at New Melones. Between May 14 and 31, ETRACOM's virtual supply offers resulted in a \$42,481 loss, while staff estimates that ETRACOM earned \$315,072 in unjust profits related to its CRR positions. Staff also estimates that ETRACOM harmed the market by \$1,514,207.

4. In light of the allegations contained in the OE Staff Report, the Commission directs Respondents to respond to this order as set forth above.⁸ This order also is the

⁵ See 18 C.F.R. § 385.209(b) (2015). We also note that under 15 U.S.C. §717t-1(c), the Commission "shall take into consideration the nature and seriousness of the violation and the efforts to remedy the violation."

⁶ 18 C.F.R. § 385.213(a) (2015).

⁷ The OE Staff Report is attached to this order. The OE Staff Report describes the background of OE staff's investigation, findings and analysis, and recommended sanctions.

⁸ Under 18 C.F.R. § 385.213(c), Respondents must file an answer that provides a clear and concise statement regarding any disputed factual issues and any law upon which they rely. Respondents must also, to the extent practicable, admit or deny, specifically and in detail, each material allegation contained in the OE Staff Report and set forth every defense relied upon. Failure to answer an order to show cause will be treated as a general denial and may be a basis for summary disposition under Rule 217. 18 C.F.R. § 385.213(e)(2).

notice of proposed penalty required pursuant to section 31 of the FPA.⁹ In the answer to this order, Respondents have the option to choose between either (a) an administrative hearing before an ALJ at the Commission prior to the assessment of a penalty under section 31(d)(2), or (b) a penalty assessment by the Commission under section 31(d)(3)(A). If Respondents elect an administrative hearing before an ALJ, the Commission will issue a hearing order unless it is determined that the matter can be resolved in a summary disposition. If Respondents elect a penalty assessment, and if, after a review of the full record to be developed in this proceeding, the Commission finds a violation, the Commission will issue an order assessing a penalty. If such penalty is not paid within 60 days of assessment, the Commission will commence an action in a United States district court for an order affirming the penalty.¹⁰

5. The Commission authorizes OE staff to disclose information obtained during the course of the investigation as necessary to advance this matter.

The Commission orders:

(A) Within 30 days of the date of this order, Respondents must file an answer in accordance with Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213, showing cause why they should not be found to have violated 18 C.F.R. § 1c.2 and 16 U.S.C. § 824v(a) with respect to their trading at New Melones.

(B) Within 30 days of the date of this order, Respondents must file an answer in accordance with Rule 213 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213, showing cause why their alleged violation should not warrant an order requiring Respondents to disgorge unjust profits and to be assessed civil penalties in the amounts described in Paragraph 1 of this order, or a modification of that amount consistent with section 31(d)(4) of the FPA.

(C) In any answer, Respondents should address any matter, legal, factual or procedural, that they would urge in the Commission's consideration of this matter. To the extent that Respondents cite any material not cited in the OE Staff Report, Respondents are directed to file non-publicly one (1) copy of such material on CD-ROM or DVD in the captioned dockets and to serve a copy of same on OE staff.

(D) Pursuant to section 31(d)(1) of the FPA, within 30 days of the date of this order, Respondents may also make an election to have the procedures set forth in section 31(d)(3) of the FPA apply to this proceeding. Under that provision, if the

⁹ 16 U.S.C. § 823b(d).

¹⁰ FPA Section 31(d)(3)(B), 16 U.S.C. § 823b(d)(3)(B). *See also Process for Assessing Civil Penalties, supra* note 3.

Commission finds a violation, the Commission will issue a penalty assessment and, if not paid within 60 days of the order assessing penalties, the Commission will institute an action in the appropriate United States district court. Should Respondents fail to make a timely election under section 31(d)(1), the procedures of section 31(d)(2) will apply.

(E) Within 30 days of the filing of the answer by Respondents, Enforcement staff may file a reply with the Commission.

By the Commission. Chairman Bay is not participating.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.



FEDERAL ENERGY REGULATORY COMMISSION

ETRACOM LLC and Michael Rosenberg

Docket No. IN16-2-000

Enforcement Staff Report and Recommendation

Office of Enforcement

Table of Contents

Executive Summary.....	1
I. Background.....	2
A. ETRACOM and Rosenberg	2
B. Electric power pricing and products at issue	3
C. Procedural history	5
D. Facts	5
1. Pre-Manipulation Period – February, March and April 2011	7
2. Manipulation Period - May 2011	8
3. Post-Manipulation Period - June 2011	13
II. Applicable law	13
III. Staff’s findings	15
A. The manipulative scheme	15
B. ETRACOM’s intent	23
C. The evidence does not support ETRACOM and Rosenberg’s explanations	25
1. ETRACOM’s supposed expectation of profit from negative HASP prices due to a hydroelectric runoff event is unreasonable	25
2. Market design flaws are not responsible for ETRACOM’s conduct or market harm	32
3. ETRACOM was not responding to price signals and its trading was uneconomic	34
4. ETRACOM understood and intended its virtual trading to impact its CRR positions.....	35
5. Trading strategy characteristics.....	37
D. The conduct is in connection with a jurisdictional transaction.....	38
IV. Sanctions.....	39
A. Harm and unjust profits	39
B. Civil penalties	40
C. ETRACOM’s arguments and staff’s responses	40
V. Conclusion.....	42

Executive Summary

The Office of Enforcement (Enforcement or staff) submits this report to the Federal Energy Regulatory Commission (Commission) setting forth its findings of fact and conclusions of law regarding the investigation of ETRACOM LLC (ETRACOM) and its primary trader, Michael Rosenberg. Enforcement concludes that in May 2011, ETRACOM and Rosenberg violated the Federal Power Act and Commission regulations by submitting virtual supply offers at the New Melones intertie (New Melones) in the California Independent System Operator (CAISO) in order to affect power prices to benefit ETRACOM's Congestion Revenue Rights (CRRs) at that location. ETRACOM's CRR positions sourced at New Melones were very profitable in early May, but beginning May 8 they experienced a decline in profitability due to unexplained export congestion in some hours. Between May 14 and 31, in response to that decline in profitability, ETRACOM submitted and cleared uneconomic virtual supply offers with the intent to counter the unexplained export congestion and create import congestion, which artificially lowered the day-ahead LMP. The lowered day-ahead LMP greatly benefited ETRACOM's CRR positions sourced at New Melones. ETRACOM's trading initially targeted the hours that experienced export congestion, but quickly expanded to 24 hours a day. ETRACOM ceased trading virtual supply at New Melones on May 31; its June CRR positions were substantially smaller. Rosenberg developed and implemented both the CRR and the virtual trading strategy at New Melones on behalf of ETRACOM.

Between May 14 and 31, ETRACOM's virtual supply offers resulted in a \$42,481 loss, while staff estimates that ETRACOM earned \$315,072 in unjust profits related to its CRR positions. Staff also estimates that ETRACOM harmed the market by \$1,514,207.

ETRACOM argues that its virtual trading strategy was intended to profit from a hydroelectric runoff event it anticipated in late May. Staff concludes the evidence does not support ETRACOM's explanation. Alternatively, ETRACOM argues that flaws in CAISO's administration of the New Melones node are responsible for the price outcomes there. Staff concludes that ETRACOM's arguments are post-hoc rationalizations that do not reflect ETRACOM and Rosenberg's intent at the time of the trades to manipulate the price at New Melones to benefit ETRACOM's CRR positions.

Enforcement recommends that the Commission issue an Order to Show Cause and Notice of Proposed Penalty to ETRACOM and Rosenberg requiring them to show cause why: (i) they did not violate the Anti-Manipulation Rule, 18 C.F.R. § 1c.2 (2015) and section 222 of the Federal Power; (ii) ETRACOM should not pay a civil penalty in the amount of \$2,400,000; (iii) Rosenberg should not pay a civil penalty in the amount of \$100,000 and (iv) ETRACOM should not disgorge \$315,072 plus interest in unjust profits.

I. Background

A. ETRACOM and Rosenberg

ETRACOM is a small financial trading company owning no physical energy assets. The company was formed in 2008 and only operates in the CAISO.¹ ETRACOM began trading in the CAISO at the inception of the Market Redesign and Technology Upgrade (MRTU) in 2009.² ETRACOM trades two products in the CAISO: (1) CRRs and (2) virtual supply and virtual demand.³ ETRACOM has only three members/employees and a few contractors on staff.⁴ There is no centralized office and the employees and contractors mostly communicate through Skype conference calls, supplemented by Instant Messages and email.⁵

Rosenberg is a founding member of ETRACOM and has a 75% interest in the company.⁶ Rosenberg is primarily responsible for data analysis and developing ETRACOM's trading strategies.⁷ He holds a bachelor's degree in physics from Saint Petersburg State University in Russia, a graduate degree in physics from The University of Texas at Austin and received a certificate in finance from the Cox School of Business at Southern Methodist University.⁸ Prior to founding ETRACOM, Rosenberg worked for several power and gas companies including three years as a Manager of Market Assessment at ISO New England and two years as a Manager of Quantitative Analysis at Pacific Gas & Electric Company.⁹

¹ Tr. 40:15-23 (Rosenberg).

² Tr. 27:1-3 and 30:10-31:21 (Rosenberg).

³ Virtual supply and virtual demand, together, are often referred to as "convergence bids" in CAISO.

⁴ Tr. 43:15-18; 51:15-20 (Rosenberg).

⁵ Tr. 31:13-20; 43:8-12 (Rosenberg).

⁶ Tr. 51:15-20 (Rosenberg).

⁷ Tr. 26:7-21 (Rosenberg).

⁸ Tr. 12:3-13:5 (Rosenberg).

⁹ Tr. 14:8-18:5 (Rosenberg).

B. Electric power pricing and products at issue

The CAISO uses locational marginal prices (LMP) to establish the price for wholesale electric energy purchases and sales at specific locations.¹⁰ Locations inside the CAISO market are called nodes and locations at the borders are called interties. Many of the products offered by CAISO settle off LMP values, including CRRs and virtual transactions. The CAISO optimizes bids and offers to determine the most cost effective way to distribute energy throughout the system. This results in an hourly LMP for every price node in the system (including interties) in the day-ahead, hour-ahead (Hour Ahead Scheduling Process (HASP)) and real-time. LMP is comprised of three components: energy, congestion and physical transmission losses. LMPs may differ between locations due to congestion and transmission losses. If there were no congestion or transmission losses, the system would be unconstrained and each nodal LMP would be identical. However, the system is often congested in certain directions because the lowest cost supply cannot always meet all the demand at every location. This is reflected by differences in the LMPs, and is referred to as the congestion component of LMP or the marginal cost of congestion.

In May 2011, ETRACOM held a CRR position sourced at the New Melones intertie and sunk at an internal node within CAISO. CRRs are a product offered by CAISO which settle off the difference in day-ahead congestion costs between two locations.¹¹ CRRs are acquired through monthly, seasonal or longer-term auctions and entities can purchase and sell them in a secondary market. Each CRR consists of a source node and sink node which designates the direction of the CRR. The holder is entitled to a CRR payment if congestion occurs in the same direction as the CRR and the holder incurs a charge if congestion occurs in the opposite direction as the CRR. The per-MW payment or charge is equal to the marginal cost of congestion at the sink minus the marginal cost of congestion at the source for each hour in the day-ahead market.

In May 2011, ETRACOM also engaged in virtual bidding at the New Melones intertie.¹² In the CAISO market, virtual transactions are a “mechanism whereby market participants can make financial sales (or purchases) of energy in the day ahead market,

¹⁰ See CAISO Tariff Appendix C.

¹¹ See CAISO Tariff § 36 and CAISO Business Practice Manual for Congestion Revenue Rights.

¹² See *Cal. Indep. Sys. Operator Corp.*, 133 FERC ¶ 61,039 (2010), *order on reh’g*, 134 FERC ¶ 61,070, *order on reh’g*, 136 FERC ¶ 61,156 (2011). In August 2011, CAISO temporarily ceased virtual bidding at interties. In September 2015, the Commission approved CAISO’s request to permanently discontinue virtual bidding at interties. *Cal. Indep. Sys. Operator Corp.*, 152 FERC ¶ 61,234 (2015).

with the explicit requirement to buy back (or sell back) that energy in the real time market.”¹³ An accepted virtual demand bid, also commonly referred to as a DEC, is equivalent to purchasing energy at a node in the day-ahead market, with the obligation to sell the same energy back in the real-time market. A company makes money if it buys energy at a lower price in the day-ahead market than it subsequently sells the energy back in the real-time. Conversely, a virtual supply offer, also commonly referred to as an INC, is equivalent to the sale of energy at a node in the day-ahead market with the obligation to buy that energy back in the real-time market. A company makes money when it sells the energy at a higher price in the day-ahead market than the price at which it buys the energy back in the real-time.

Virtual transactions at an intertie are similar. Interties represent the border between the CAISO and a neighboring Balancing Authority (BA). Therefore, at an intertie, power moving out of CAISO is considered an export; power moving into CAISO is considered an import. A virtual demand bid is evaluated as an export because CAISO views it as buying energy from the CAISO. At an intertie, virtual demand settles off the difference between LMP in the day-ahead and HASP.¹⁴ Conversely, a virtual supply offer at an intertie is evaluated as an import because CAISO views it as selling energy to the CAISO. At an intertie, virtual supply settles off the difference between LMP in the HASP and day-ahead.

Virtual supply and demand transactions are evaluated in CAISO’s day-ahead market pricing alongside traditional physical supply and demand transactions. Both virtual and physical transactions can create congestion on transmission constraints, including interties, and both can eliminate congestion on these constraints.¹⁵ For example, in a situation where an intertie had been congested by exports, placing a virtual supply offer (import) could relieve the congestion, as the net flow (*i.e.*, the net cleared imports and exports) would decrease or cancel out the level of exports. In relieving the congestion, the virtual supply offer would therefore lower LMP, impacting the profitability of any other products that settle off that LMP, including CRRs.

¹³ Convergence Bidding, <http://www.caiso.com/1807/1807996f7020.html>; *see* CAISO Tariff § 31 Day-Ahead Market.

¹⁴ CAISO no longer utilizes HASP prices in settling virtual bids and offers at interties. It now utilizes a 15-minute real-time market for interties and internal nodes.

¹⁵ CAISO Business Practice Manual for Market Operations, § 2.2.4 Congestion Revenue Rights and § 3.1 Model Description.

C. Procedural history

ETRACOM's CRR positions and virtual transactions during the month of May 2011 prompted the CAISO Department of Market Monitoring (DMM) to refer the matter to the Office of Enforcement.¹⁶ The DMM's referral alleged that ETRACOM's virtual bidding behavior from May 14 to 31, 2011 potentially violated FERC's prohibition of electric energy market manipulation. Staff opened an investigation analyzing ETRACOM's conduct in CAISO's virtual and CRR markets. Through its investigation, staff obtained responses to data requests from ETRACOM, took the sworn testimony of witnesses, and conducted analysis of trading, market, and pricing data provided by ETRACOM and CAISO.¹⁷

On July 17, 2014, staff sent a letter to ETRACOM and Rosenberg outlining its preliminary findings.¹⁸ ETRACOM and Rosenberg responded and staff fully considered the arguments and defenses that ETRACOM and Rosenberg raised in response. Staff engaged ETRACOM and Rosenberg in settlement negotiations, but has been unable to reach an agreement. On July 31, 2015, staff provided ETRACOM and Rosenberg written notice, pursuant to 18 C.F.R. § 1b.19, of staff's intent to recommend that the Commission issue an Order to Show Cause. ETRACOM and Rosenberg responded on September 30, 2015; that response was fully considered and was provided to the Commission.

D. Facts

The New Melones intertie is located in eastern central California and connects a hydroelectric generating resource located in the SMUD/WAPA balancing authority area with CAISO.¹⁹ It has a maximum physical capacity of 384 MW.²⁰ New Melones is a fully encumbered intertie, meaning that only one entity, WAPA, has physical scheduling rights at the intertie.²¹ In 2011, no other entity could submit bids for physical imports or exports at New Melones, but CAISO did allow for virtual bidding at the intertie. The

¹⁶ California Independent System Operator's Department of Market Monitoring Referral for Enforcement of Etracom LLC (July 29, 2011) (DMM Referral).

¹⁷ Staff is providing copies of all of this data and documents, which are part of the administrative record, to the Commission for consideration. ETRACOM and Rosenberg already have copies of all of this material (most of which is material they produced to staff during the course of the investigation).

¹⁸ *See Revised Policy Statement on Enforcement*, 123 FERC ¶ 61,156, at P 32 (2008).

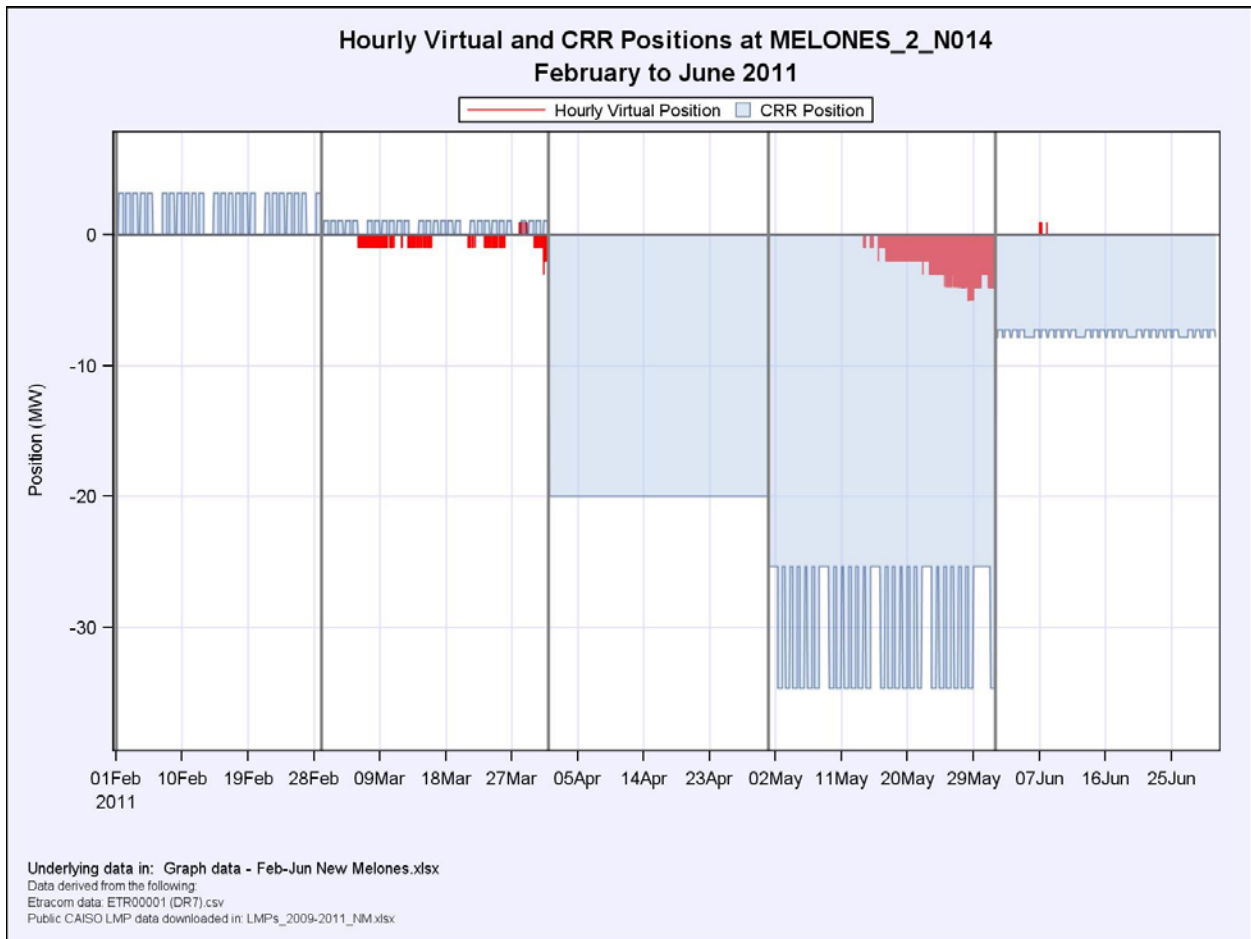
¹⁹ DMM Referral, Attachment 1 at 1.

²⁰ *Id.*

²¹ *Id.*

position limits, calculated by CAISO, at New Melones were 19.2 MW of virtual supply and 1 MW of virtual demand.²² CRR positions were available at New Melones through the seasonal and monthly CRR auctions.

New Melones was one of 723 unique locations at which ETRACOM held monthly CRR positions between January and June 2011 and one of 60 locations in which ETRACOM engaged in virtual trading.²³ Below is a graph summarizing ETRACOM's CRR positions and virtual trading at New Melones between February and June 2011. A narrative discussion of this period follows the graph.



²² *Id.*

²³ ETR0001 (DR7).csv (CRR locations in columns K and M and virtual locations in column O).

1. Pre-Manipulation Period – February, March and April 2011

In February, March and April 2011 ETRACOM was developing its trading strategies in CAISO and specifically at the New Melones intertie. ETRACOM had been participating in CAISO's CRR market since 2009²⁴ and began engaging in virtual trading in February 2011 when it was first introduced in CAISO.²⁵

In February, ETRACOM held about a 3 MW CRR position sinking at New Melones²⁶ and engaged in virtual trading at nine locations, but not New Melones.²⁷

In March, ETRACOM reduced its net on-peak CRR position sunk at New Melones to about 1 MW.²⁸ ETRACOM also engaged in virtual trading at 19 locations including New Melones.²⁹ ETRACOM's cleared virtual transactions at New Melones exhibited characteristics consistent with the trading strategies it had implemented at other locations, indicating that it was part of ETRACOM's overall strategy in the CAISO market.³⁰ For the entire month of March, ETRACOM's virtual transactions (mainly virtual supply) at New Melones lost \$2,029.³¹

In April, ETRACOM significantly expanded its CRR strategy at New Melones to 20 MW in both on-peak and off-peak hours.³² The company also reversed the direction of its position to being sourced (rather than sunk) at New Melones, hoping to profit from import congestion into CAISO. The positions became increasingly profitable over the month, earning the company almost \$200,000.³³ While its portfolio of virtual trading locations grew to 22 locations, ETRACOM did not engage in virtual transactions at New Melones in April.³⁴

²⁴ Tr. 25:6-26:5 (Rosenberg).

²⁵ ETR0001 (DR7).csv.

²⁶ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

²⁷ ETR0001 (DR7).csv.

²⁸ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

²⁹ ETR0001 (DR7).csv.

³⁰ *Id.*; Tr. 107:17-108:3 (Rosenberg).

³¹ Hourly Virtual PNL_March-July2011_NM.xlsx (March Tab).

³² ETRACOM company data – New Melones Only.xlsx (CRR Tab).

³³ Hourly CRR Revenue_March-June2011_NM.xlsx (April 2011 Tab, Column N).

³⁴ ETR0001 (DR7).csv.

2. Manipulation Period - May 2011

In May, through CAISO's monthly auction, ETRACOM acquired even larger CRR positions sourced at New Melones (and sunk at an internal node within CAISO). ETRACOM held 34.668 MW on-peak and 25.326 MW off-peak.³⁵ This represented 39% of the net on-peak and 16% of the net off-peak MW sourced at the New Melones Intertie.³⁶ Over the first 10 days of May, ETRACOM's CRR positions were profitable, earning revenue between \$6,800 and \$25,000 per day, for a total of \$147,388.³⁷

From May 1 through 7, only import congestion into CAISO appeared on the New Melones Intertie.³⁸ Based on the direction of ETRACOM's CRR, this is what it expected. However, beginning on May 8 and lasting through May 13, export congestion occurred most days in hours-ending 1-7 and 23-24.³⁹ This unexpected export congestion caused ETRACOM to lose over \$23,624 on its monthly CRR positions in those hours over those six days.⁴⁰ This drew ETRACOM's attention. There was some confusion within the company as to what was occurring. Mike Davis, a contractor for ETRACOM responsible for analytical support, noted on May 10 that "Melon[e]s did not bind in import today."⁴¹ Two days later, Arik Kapulkin, a co-owner/member of ETRACOM responsible for developing ETRACOM's IT infrastructure, expressed the belief that "melon[e]s imports make sense, exports do not."⁴² Davis again noted on May 13 that "melon[e]s reverse in early morning."⁴³ Rosenberg contacted a former colleague at

³⁵ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

³⁶ CRR_Awards_May2011_NewMelones.xlsx (Net CRR positions summary Tab, Columns B and C, Row 25).

³⁷ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Rows 2-11).

³⁸ Shadow_Prices_May_2011_NM.xlsx (Shadow_Prices_May_2011_NM Tab, Columns D and E).

³⁹ *Id.*

⁴⁰ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 Phase 2 Tab, Column L).

⁴¹ ETRACOM Response to DR 6, 5/10/2011 12:07:22 PM Instant Message from Mike Davis (Bates No. ETR01478-82).

⁴² ETRACOM Response to DR 6, 5/12/2011 3:03:02 PM and 3:03:10 PM Instant Messages from Arik Kapulkin (Bates Nos. ETR01487-92).

⁴³ ETRACOM Response to DR 6, 5/13/2011 11:29:03 AM Instant Message from Mike Davis (Bates No. ETR01493-95).

PG&E for more information on why export congestion was occurring.⁴⁴ ETRACOM never determined the cause of the export congestion.⁴⁵ But ETRACOM did react to it.

ETRACOM had not traded virtuals at New Melones for two and half months, but on May 13, just days after the unexpected export congestion appeared, ETRACOM started doing so based on a new virtual trading strategy that Rosenberg developed and implemented.⁴⁶ For May 14, ETRACOM placed \$0 virtual supply offers in hours-ending 1-6 and 23-24, all but one of the hours in which export congestion had appeared in previous days.⁴⁷ For those hours in which ETRACOM's offers cleared, its offers were identical to the LMP (*i.e.*, \$0), indicating that ETRACOM was the marginal bidder and that its bid set the LMP.⁴⁸ Export congestion disappeared in every hour in which ETRACOM placed its virtual supply offers, solving ETRACOM's problem and returning the positive revenue to the company's off-peak CRR positions in those hours.⁴⁹ However, in hour-ending 7, the only off-peak hour ETRACOM had not offered virtual supply, export congestion remained.⁵⁰

For May 15, ETRACOM again placed virtual supply offers for hours-ending 1-6 and 23-24, but it also added hour-ending 7.⁵¹ ETRACOM's virtual supply offers were again \$0.⁵² ETRACOM cleared in four hours and set the LMP at \$0.⁵³ As on May 14, export congestion disappeared in those hours, and ETRACOM's CRR positions earned

⁴⁴ ETRACOM Response to DR 6, e-mail from Michael Rosenberg to John Chiara on May 13, 2011 (Bates No. ETR00020).

⁴⁵ Tr. 120:2-121:13 (Rosenberg).

⁴⁶ *Id.* at 102:18-103:9.

⁴⁷ CAISO_bid_data_May2011_NewMelones.xlsx (Bid data Tab).

⁴⁸ *Id.* (Bid Data Tab, compare Column I and L in hours when ETRACOM cleared (Column J)).

⁴⁹ Shadow_Prices_May_2011_NM.csv (Shadow_Prices_May_2011_NM Tab, Column E).

⁵⁰ *Id.*

⁵¹ CAISO_bid_data_May2011_NewMelones.xlsx.

⁵² *Id.*

⁵³ ETRACOM cleared in hours-ending 1, 2, 6 and 7. ETRACOM's virtual supply offers in hour-ending 3 also set the LMP at \$0 because it was the next economic bid. *Id.* (Bid Data Tab, compare Column I and L in hours when ETRACOM cleared (Column J)).

positive revenue in those hours.⁵⁴ The company suffered a net loss of \$52 on virtual trades over those two days.⁵⁵ Its CRR positions earned \$28,059, significantly more than its losses and more than ETRACOM would have earned on these positions had its bids not eliminated the export congestion that had decreased the values of its positions between May 8 and May 13.⁵⁶

ETRACOM's virtual position experienced a net loss over May 14 and 15. This result justified a reduction in its virtual supply position at New Melones. But ETRACOM did the opposite - expanding its virtual trading strategy to nearly every hour from May 16 through 31, with predictable results. During this period, ETRACOM increased the MWs it was offering and decreased its offer price, often hitting the offer floor in an attempt to clear more MWs.⁵⁷ In 379 out of 393 (96%) of the hours it traded at New Melones in May, ETRACOM's virtual transactions lost money.⁵⁸ ETRACOM's trading, and associated losses, at New Melones were frequently discussed amongst ETRACOM's employees. On May 16 Davis reported, "We lost \$800 on Melon[e]s but made back \$200 on some evening trades."⁵⁹ On May 20, he again reported on the strategy's losses, "Yesterday Melon[e]s cost us about \$2K - continue with it?"⁶⁰ Despite concern over the company's losses, ETRACOM continued to trade virtual supply at New Melones until May 31—which is the exact date ETRACOM's monthly CRR positions expired. The company's total losses for the month on the virtual supply offers placed at New Melones were \$42,481.⁶¹

ETRACOM was losing money nearly every time it placed a virtual supply offer in the last half of May, but its profits on its New Melones CRR positions more than doubled

⁵⁴ Shadow_Prices_May_2011_NM.xlsx (Column E); Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 PHASE 3 Tab, Column J).

⁵⁵ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab, Column Y, Rows 2 and 3).

⁵⁶ Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011 PHASE 3 Tab, Column N).

⁵⁷ CAISO_bid_data_May2011_New Melones.xlsx.

⁵⁸ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab, Columns X-Z, Row 24).

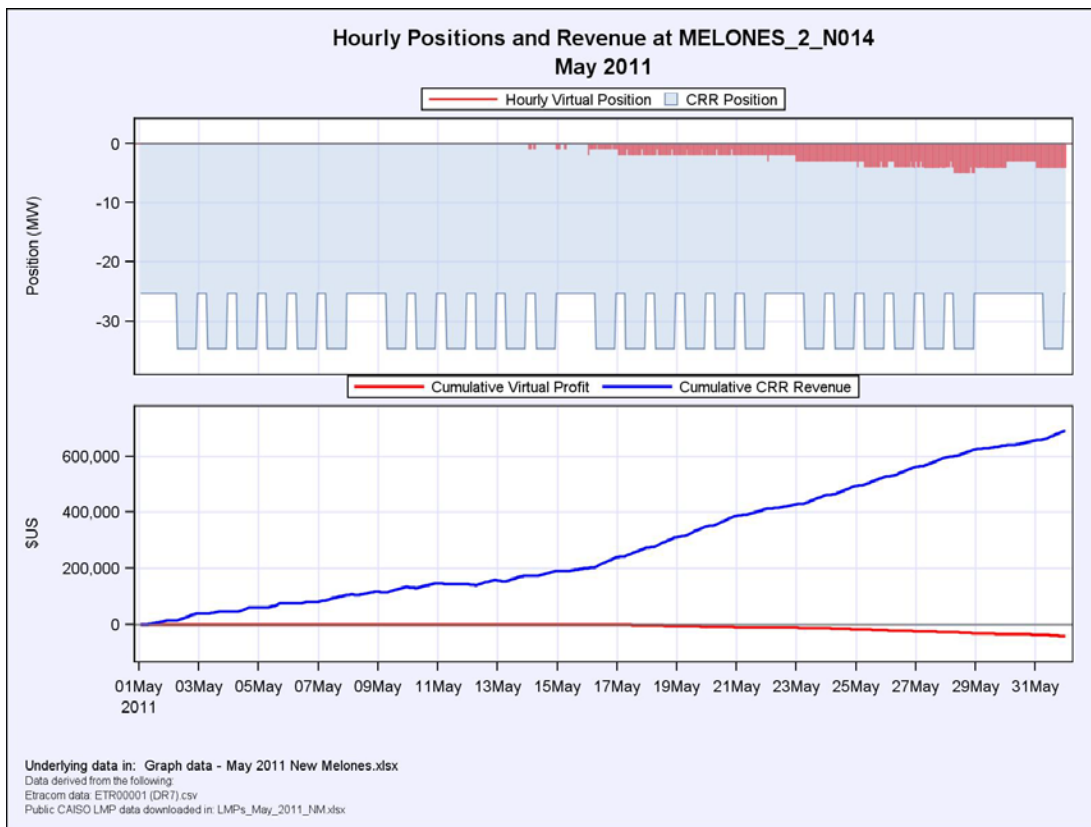
⁵⁹ ETRACOM Response to DR 6, 5/16/2011 9:47:36 PM Instant Message from Mike Davis (Bates No. ETR01506-08).

⁶⁰ ETRACOM Response to DR 6, 5/20/2011 7:33:20 AM Instant Message from Mike Davis (Bates No. ETR01509-11).

⁶¹ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab, Column Y, Row 20).

during that time. Between May 1 and May 13, average hourly revenue was \$554.⁶² Between May 14 and 31, when ETRACOM was placing virtual supply offers, its average hourly revenue more than doubled to \$1,198.⁶³ In total, ETRACOM earned over \$690,122 in revenue in May on its New Melones CRR positions, with \$517,423 (close to 75%) earned between May 14 and 31.⁶⁴

The graph below demonstrates the impact ETRACOM's virtual trading had on its CRR revenues. As the lower graph shows, gains on its CRR revenues grew dramatically as its virtual trading increased. These gains dwarfed the losses associated with its virtual trading.

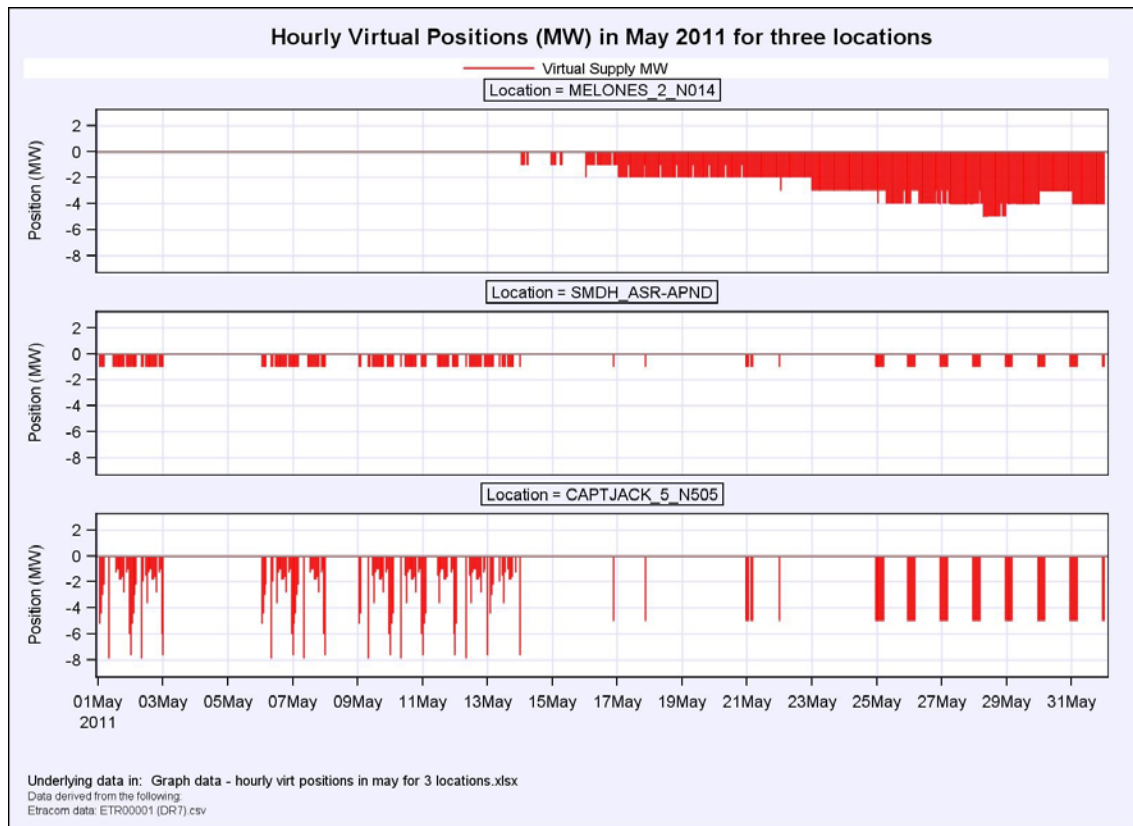


⁶² Hourly revenue represents the difference between the congestion component at the sink minus the congestion component at the source for each hour. It does not include the purchase cost of the CRR position. This is considered a sunk cost. Hourly CRR Revenue_March-June2011_NM.xlsx (May 2011_all days Tab, Column P, Row 36).

⁶³ *Id.* (May 2011_all days Tab, Column P, Row 37).

⁶⁴ *Id.* (May 2011_all days Tab, Column P).

ETRACOM's virtual trading at New Melones in May 2011 was anomalous compared to its trading at all 21 other locations. At those locations, ETRACOM cleared virtual bids/offers starting on May 1 and never submitted continuous bids/offers for 24 hours a day.⁶⁵ ETRACOM's virtual trading at New Melones was the only strategy that began mid-month and encompassed all hours for an extended period.⁶⁶ All of the other locations at which ETRACOM placed virtual supply offers in May 2011 were clearly related. At four locations ETRACOM cleared exactly 1 MW of virtual supply on intermittent days but similar hours across the month; at 14 locations ETRACOM cleared between 5 and 8 MW of virtual supply on those same intermittent days and hours.⁶⁷ At the three locations which ETRACOM cleared virtual demand, it was for 10 MW or greater in intermittent days but similar hours across the entire month. The graph below demonstrates how different ETRACOM's strategy at New Melones looked from the other virtual supply strategy.



⁶⁵ Etracom_May_2011_Virtuals-ALL LOCATIONS.pdf (generated from data originally located in ETR0001 (DR7).csv, formatted in Etracom_May_2011_Virtuals - all locations - graph data.xlsx).

⁶⁶ *Id.*

⁶⁷ *Id.*

3. Post-Manipulation Period - June 2011

In June 2011, ETRACOM held considerably smaller CRR positions sourced at New Melones (7.24 MW on-peak and 7.79 MW off-peak) than it had in May.⁶⁸ ETRACOM bid for larger amounts but was awarded smaller positions because the market was more competitive and prices were higher.⁶⁹ ETRACOM also attempted to purchase additional CRRs in bilateral transactions but was unsuccessful there too.⁷⁰

With a much smaller CRR position in place, ETRACOM's virtual activity in June at New Melones was also significantly reduced. ETRACOM cleared virtual demand bids in seven individual hours for June 7, for a total loss of about \$54.⁷¹ It cleared no virtual supply offers.

II. Applicable law

The Commission's Anti-Manipulation Rule, 18 C.F.R. § 1c.2, prohibits any entity from: (1) using a fraudulent device, scheme or artifice, or making a material misrepresentation or a material omission as to which there is a duty to speak under a Commission-filed tariff, Commission order, rule or regulation, or engaging in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity; (2) with the requisite scienter; (3) in connection with the purchase or sale of electricity subject to the jurisdiction of the Commission.⁷²

The Commission has defined fraud "to include any action, transaction, or conspiracy for the purpose of impairing, obstructing or defeating a well-functioning market."⁷³ Fraud is a question of fact to be determined by all the circumstances of a

⁶⁸ ETRACOM company data – New Melones Only.xlsx (CRR Tab).

⁶⁹ Tr. 134:12 (Rosenberg).

⁷⁰ *Id.* at 134:19-25, 135:1-12; ETRACOM Response to DR 6, e-mail from Michael Rosenberg to AK on June 2, 2011 (Bates Nos. ETR00043-47).

⁷¹ Hourly Virtual PNL_March-July2011_NM.xlsx (June 2011 Tab, Column S).

⁷² *See Prohibition of Energy Market Manipulation*, Order No. 670, 71 Fed. Reg. 4244 (Jan. 26, 2006), FERC Stats. & Regs. ¶ 31,202, at P 38, *reh'g denied*, 114 FERC ¶ 61,300 (2006) (Order No. 670). The terms "manipulative or deceptive device or contrivance" are understood by the Commission as they are used in Section 10(b) of the Securities Exchange Act of 1934. *Id.* at P 52.

⁷³ *Id.* P 50.

case.⁷⁴ In determining whether an entity has employed a fraudulent device, scheme, or artifice, the Commission has considered, for example, whether an actor is responding to pricing incentives in a market or whether the actor is seeking to manipulate prices in that market.⁷⁵ The Commission has also considered whether an actor intended to affect prices in a FERC-jurisdictional market to benefit a position in another market.⁷⁶

The term scienter, for purposes of the Securities Exchange Act of 1934, refers to “knowing or intentional misconduct ... conduct designed to deceive or defraud investors by controlling or artificially affecting the price of securities.”⁷⁷ The Commission applies this same concept to its own anti-manipulation rule and requires evidence of “knowing or intentional misconduct” or recklessness.⁷⁸

The Commission has repeatedly held that cross-product manipulation violates section 1c.⁷⁹ Additionally, the Commission has stated that “intentional manipulation of market prices for the purpose of benefitting other instruments in the actor’s portfolio is actionable, even in the absence of evidence that specific false statements were made.”⁸⁰

⁷⁴ *Barclays Bank PLC*, 144 FERC ¶ 61,041 at P 32 (2013); Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 50.

⁷⁵ *See N.Y. Indep. Sys. Operator, Inc.*, 128 FERC ¶ 61,049 at 61,256 (2009).

⁷⁶ *Barclays*, 144 FERC ¶ 61,041 at P 57-58.

⁷⁷ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 52 (citing *Ernst & Ernst v. Hochfelder*, 425 U.S. 185 (1976)).

⁷⁸ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 53.

⁷⁹ *See, e.g., Barclays*, 144 FERC ¶ 61,041 (order approving settlement finding that trading fixed price products to manipulate an index price to benefit a swap position violated section 1c); *MISO Virtual and FTR Trading*, 146 FERC ¶ 61,072 (2014) (order approving settlement finding that virtual trades used to manipulate FTR positions violated section 1c); *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056 (2013) (order approving settlement finding that physical exports used to manipulate a CRR position violated section 1c); *Constellation Energy Commodities Group, Inc.*, 138 FERC ¶ 61,168 (2012) (order approving settlement finding that uneconomic virtual transactions and day ahead power flows used to manipulate swap positions violated section 1c).

⁸⁰ *Amaranth Advisors L.L.C.*, 124 FERC ¶ 61,050, at P 65 (2008) (citing *Markowski v. SEC*, 274 F.3d 525, 527-28 (D.C. Cir. 2001)).

III. Staff's findings

A. The manipulative scheme

In May 2011, in response to a decrease in revenue associated with ETRACOM's New Melones CRR positions, Rosenberg developed a manipulative scheme in which ETRACOM lowered the day-ahead LMP at New Melones by submitting \$0 or negative virtual supply offers. The lower day-ahead LMP created import congestion into CAISO, increasing the profitability of ETRACOM's CRR positions. ETRACOM's virtual trades were unprofitable and timed such that they could only have been intended to benefit its CRR positions.

The implementation of ETRACOM's scheme is best explained by examining the price formation at New Melones before and after ETRACOM began its virtual trading. ETRACOM's virtual supply offers at the end of May contributed significantly to congestion direction and magnitude and therefore price formation.⁸¹ Staff divided the month into four phases summarized in the diagram below, which depicts the scheme using approximate prices for simplicity. The lower the price at New Melones (compared to the price in CAISO), the greater the profitability of ETRACOM's CRR positions.

⁸¹ As a fully encumbered line, no one may place physical bids except WAPA. Therefore, import and export congestion on the New Melones intertie occurs only as a result of virtual bids. If any virtual supply (imports) clears against virtual demand (exports), the marginal cleared virtual supply bid will set the day-ahead LMP. If no virtual bids clear, then the next economic MW of uncleared virtual supply or demand will set the day-ahead LMP. If the bid that set the LMP is below the system energy plus loss components of LMP, import congestion occurs because the price at New Melones is below the internal CAISO price. If the bid that set the LMP is above the sum of the system energy and loss components of LMP, export congestion is created as a result of the price differential. DMM Referral, Attachment 1 at 1-2.

		Price Formation at New Melones in May 2011					
Phase		LMP at New Melones	-	CAISO uncongested LMP*	=	New Melones Congestion Component of LMP**	
(1)	Pre-Manipulation	May 1-7	\$3	-	\$5	=	-\$2 { Etracom CRR profitable}
(2)	Pre-Manipulation	May 8-13 (offpeak)	\$7	-	\$5	=	\$2 { Etracom CRR NOT profitable}
Etracom begins offering virtual supply, lowering the LMP at New Melones							
(3)	Test Period	May 14-15 (offpeak)	\$0	-	\$5	=	-\$5 { Etracom CRR profitable}
(4)	Manipulation	May 16-31	-\$30	-	\$5	=	-\$35 { Etracom CRR profitable}

*CAISO uncongested LMP represents the energy plus loss components of the LMP at New Melones.

** The congestion component at New Melones is equal to the difference between the LMP at New Melones and the costs of energy in CAISO. Negative implies import congestion, which benefits Etracom's CRR position; positive implies export congestion, which hurts Etracom's CRR position.

The first two phases demonstrate congestion at New Melones prior to the implementation of ETRACOM's scheme. Initially from May 1-7, there was import congestion at New Melones in a majority of hours that benefited ETRACOM's CRR positions.⁸² During this phase other market participants' virtual supply offers were always less than the cost of energy in CAISO (plus loss component).⁸³ This surplus of cheap (virtual) energy offered from New Melones to serve the CAISO market created import congestion. In a small number of hours during this period there were no virtual offers and therefore no congestion.⁸⁴ ETRACOM did not place any virtual trades during this phase.⁸⁵

In the second phase, from May 8-13, WAPA began scheduling 1 MW of net physical exports during mostly off-peak hours.⁸⁶ During these hours, the binding limit

⁸² Shadow_Prices_May_2011_NM.xlsx (Shadow_Price_May_2011_NM Tab, Column D).

⁸³ CAISO_bid_data_May2011_NewMelones.xlsx.

⁸⁴ *Id.* (Bid Data Tab, Column O).

⁸⁵ CAISO_bid_data_May2011_NewMelones.xlsx.

⁸⁶ *Id.*

(i.e., the maximum volume allowed to flow across the constraint) at New Melones was set to 1 MW in the export direction and 0 MW in the import direction.⁸⁷ High-priced, uncleared virtual supply bids set the LMP and created export congestion in most hours.⁸⁸ ETRACOM did not know the cause of the congestion, but it knew that its CRR position in off-peak hours had become unprofitable as a result.⁸⁹ While assessing the situation during this phase, ETRACOM did not place any virtual trades.⁹⁰

The last two phases demonstrate the impacts of ETRACOM's virtual trading strategy designed to lower day-ahead LMP at New Melones. Rosenberg developed both the CRR strategy and the virtual trading strategy implemented by ETRACOM in May 2011 at New Melones.⁹¹ He was responsible for researching the New Melones intertie, setting ETRACOM's offer prices and monitoring the performance of ETRACOM's CRR positions and virtual trading.⁹² Staff finds that ETRACOM and Rosenberg implemented this strategy in response to the change in congestion, and associated CRR losses, that occurred in the second phase, not because they expected their virtual trades to be profitable.

Staff finds that the third phase, May 14 and 15, was the test period for ETRACOM's scheme.⁹³ During this phase, ETRACOM placed \$0 virtual supply offers in mostly off-peak hours, essentially offering free energy from New Melones into

⁸⁷ DMM Referral Attachment 1, at 3.

⁸⁸ CAISO_bid_data_May2011_NewMelones.xlsx.

⁸⁹ ETRACOM Response to DR 6, 5/10/2011 12:07:22 PM Instant Message from Mike Davis (Bates No. ETR01478-82); ETRACOM Response to DR 6, 5/12/2011 3:03:02 PM and 3:03:10 PM Instant Messages from Arik Kapulkin (Bates Nos. ETR01487-92); ETRACOM Response to DR 6, 5/13/2011 11:29:03 AM Instant Message from Mike Davis (Bates No. ETR01493-95); ETRACOM Response to DR 6, e-mail from Michael Rosenberg to John Chiara on May 13, 2011 (Bates No. ETR00020).

⁹⁰ CAISO_bid_data_May2011_NewMelones.xlsx.

⁹¹ Tr. 102:18-103:9 (Rosenberg); ETRACOM company data – New Melones Only.xlsx (Virtual Tab, Column F and CRR Tab, Column F).

⁹² Tr. 96:10-97:13, 105:1-106:7, 139:4-9 (Rosenberg).

⁹³ Rosenberg testified that when he initiated a new strategy it was good practice to go “from a position of limited scope to the target scope.” Tr. 348:9-11 (Rosenberg). With respect to its virtual trading strategy at New Melones, ETRACOM “wanted to make sure that what we started was successful and that [they] would grow that position to the targeted size.” Tr. 348:25-349:2 (Rosenberg).

CAISO.⁹⁴ ETRACOM frequently set the price during these hours because it was either the marginal virtual supply offeror or the next economic bid.⁹⁵ As the marginal offeror, ETRACOM's \$0 offers set the New Melones LMP at \$0 and created import congestion.⁹⁶ The import congestion created by ETRACOM's scheme benefited ETRACOM's CRR positions, which profited when the price at New Melones was below the price in CAISO.

In the fourth phase, having seen that it could effectuate a \$0 LMP at New Melones, ETRACOM expanded its virtual trading strategy to all hours of the day and began making virtual supply offers below \$0. In fact, in 94% of hours in which ETRACOM placed an offer, it was willing to sell at least a portion of its MWs between -\$28 and -\$30 (the offer floor).⁹⁷ From May 16-31, ETRACOM frequently set the price by being either the marginal virtual supply offer or the next economic bid.⁹⁸

The graph below shows the differences in congestion and CRR revenue between these four phases. Each point represents ETRACOM's hourly CRR revenue. In the first two phases, green points designate hours with import congestion and red points are hours with export congestion. In the third and fourth phase, the highlighted green points are hours with import congestion and when ETRACOM placed virtual supply. The graph shows: 1) the decrease in CRR profitability in the first two phases, attributable to the export congestion; and 2) the roughly \$20/MWh increase in CRR profitability aligning with ETRACOM's round-the-clock virtual bidding shown by the shift up of the trendline in phase four.

⁹⁴ CAISO_bid_data_May2011_NewMelones.xlsx.

⁹⁵ *Id.* (Bid Data Tab, compare Column I and L). In hours when ETRACOM did not clear, it was because there were no sufficiently priced virtual demand bids. *See Id.* (Bid Data Tab, 14May2011 Hour_Ending 4 and 15May2011 Hour_Ending 3).

⁹⁶ *Id.* (Bid Data Tab, compare Column I and L).

⁹⁷ CAISO_bid_data_May2011_NewMelones.xlsx.

⁹⁸ *Id.* (Bid Data Tab, compare Column I and L).

Throughout May, Rosenberg tracked the impact of his virtual trading strategy at New Melones and knew it was losing money. He compared the day-ahead price at New Melones to ETRACOM's offers⁹⁹ in a spreadsheet, specifically highlighting hours in which ETRACOM's offers equaled the LMP.¹⁰⁰ ETRACOM also tracked its profitability in daily reports.¹⁰¹ ETRACOM's employees had daily conference calls though Skype to discuss the company's activities and performance. The video and audio from these conference calls were not recorded. However, the participants routinely sent each other Instant Messages during the calls. Those messages show ETRACOM's disproportionate interest in New Melones; its employees discussed ETRACOM's performance at New Melones almost daily¹⁰² despite the fact that it was one of almost 300 locations in which

⁹⁹ Tr. 139:4-9 (Rosenberg).

¹⁰⁰ *Id.* 139:14-18; *see, e.g.*, Spreadsheet ETR03140.xlsx (20110522_20110522_PRC_LMP_DAM_2 Tab).

¹⁰¹ Tr. 88:15-17; 184:4-185:13 (Rosenberg).

¹⁰² ETRACOM Response to DR 6, 5/1/2011 2:20:51 PM Instant Message from Arik Kapulkin (Bates Nos. ETR01457-60); ETRACOM Response to DR 6, 5/10/2011 12:07:22 PM Instant Message from Mike Davis (Bates Nos. RTR01478-82); ETRACOM Response to DR 6, 5/11/2011 11:16:40 AM and 5/11/2011 11:21:23 AM Instant Messages from Mike Davis (Bates Nos. ETR01483-86); ETRACOM Response to DR 6, 5/12/2011 3:03:02 PM and 3:03:10 PM Instant Messages from Arik Kapulkin (Bates Nos. ETR01487-92); ETRACOM Response to DR 6, 5/13/2011 11:29:03 AM Instant Message from Mike Davis (Bates No. ETR01493-95); ETRACOM Response to DR 6,

ETRACOM was actively trading virtuals or holding CRR positions in May.¹⁰³ ETRACOM's mounting losses at New Melones, which ranged from \$871 and \$5,851 per day, could not be overlooked.¹⁰⁴ By the end of the month, ETRACOM's aggregate losses were almost three times greater than its next largest monthly loss at any node in the CAISO between February 2011 and July 2011.¹⁰⁵

On May 15, when its virtual position at New Melones was at a net loss and its CRR positions were back to profitable in all hours, Rosenberg reported to his colleagues that "we['re in good shape in CA" and directed them to review ETRACOM's portfolio tracker which included ETRACOM's "new strategies ... in ca."¹⁰⁶ On May 15, the only new strategy ETRACOM had initiated in California was at New Melones. On May 20, four days after expanding its strategy to 24 hours a day, Davis contacted Rosenberg with his concern regarding the mounting losses on ETRACOM's virtual supply positions, specifically noting "yesterday Melon[e]s cost us about \$2K."¹⁰⁷ As a way to limit the losses, Davis suggested limiting the trades to only off-peak hours, which were

5/14/2011 1:34:45 PM Instant Message from Arik Kapulkin (Bates Nos. ETR01496-98); ETRACOM Response to DR 6, 5/15/2011 1:32:48 PM, 2:45:01 PM, 2:45:55 PM, and 2:46:13 PM Instant Messages from Mike Davis and Arik Kapulkin (Bates Nos. ETR01499-01505); ETRACOM Response to DR 6, 5/16/2011 9:47:36 PM Instant Messages from Mike Davis (Bates Nos. ETR01506-08); ETRACOM Response to DR 6, 5/20/2011 7:33:20 AM through 7:38:19 AM and 11:23:30 AM, Instant Messages from Mike Davis and Michael Rosenberg (Bates Nos. ETR01509-11); ETRACOM Response to DR 6, 5/21/2011 10:09:57 PM, Instant Message from Mike Davis (Bates No. ETR01512); ETRACOM Response to DR 6, 5/23/2011 1:55:27 PM through 2:20:42 PM Instant Messages from Mike Davis, Michael Rosenberg and Arik Kapulkin (Bates Nos. ETR01515-19); ETRACOM Response to DR 6, 5/25/2011 1:00:02 PM through 1:56:21 PM Instant Messages from Mike Davis, Joseph D Bryngelson, Michael Rosenberg and Arik Kapulkin (Bates Nos. ETR01525-31); ETRACOM Response to DR 6, 5/30/2011 12:53:19 PM Instant Messages from Arik Kapulkin (Bates Nos. ETR01539-44).

¹⁰³ ETR0001 (DR7).csv.

¹⁰⁴ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Daily Summary Tab).

¹⁰⁵ Etracom_Monthly_Virtual_PNL_Feb-July2011.xlsx.

¹⁰⁶ ETRACOM Response to DR 6, 5/15/2011 11:07:48 AM Instant Message from Michael Rosenberg (Bates No. ETR01499) (within the Instant Message CA to refer to CAISO, VT to refer to virtual trading, and HPT to refer to ETRACOM's hypothetical portfolio tracker).

¹⁰⁷ ETRACOM Response to DR 6, 5/20/2011 7:33:20 AM Instant Message from Mike Davis (Bates No. ETR01509-11).

traditionally cheaper.¹⁰⁸ But Rosenberg was already aware of ETRACOM's losses and did nothing to mitigate them.¹⁰⁹ The losses were tolerable because gains on the CRR positions were much greater. ETRACOM continued to implement this new strategy for 24 hours each day. At the same time Rosenberg was monitoring ETRACOM's virtual trading losses, he was also monitoring the performance of ETRACOM's CRR positions.¹¹⁰ On May 20, Davis noted and Rosenberg acknowledged that Melones was continuing to bind in all hours in the import direction.¹¹¹ Rosenberg knew the export congestion at New Melones had been eliminated because of his virtual supply offers and he knew that ETRACOM's CRR positions benefited as a result.

By the end of May, ETRACOM had driven the LMP at New Melones so low that it attracted an increase in virtual demand bids, which resulted in ETRACOM clearing more MWs.¹¹² Virtual demand was very profitable during this period because ETRACOM was willing to pay an entity \$30/MWh to "buy" energy. No other entity was offering negative virtual supply because price signals did not indicate that negative supply was profitable.¹¹³ At times, these highly profitable virtual demand bids (many of which were negative) exceeded the volume of ETRACOM's supply offers and therefore set the LMP.¹¹⁴ By placing negative virtual supply offers (that is, paying to provide energy), ETRACOM caused the day-ahead LMP at New Melones to be even lower than it had been during the test period of ETRACOM's strategy. The average day-ahead LMP at New Melones was \$34/MWh lower in the second half of May than in the first half.¹¹⁵ Therefore, the price difference between New Melones and the system energy cost (and loss component) was even wider, indicating greater import congestion. Greater import congestion led to greater benefits to ETRACOM's CRR positions. The graph below shows the fundamental and persistent change in the LMP prices at New Melones as a direct result of ETRACOM's virtual trading strategy.

¹⁰⁸ *Id.*; Tr. 231:18-232:17 (Rosenberg).

¹⁰⁹ Tr. 225:1-10 (Rosenberg).

¹¹⁰ *Id.* 111:13-21; *See* Spreadsheet ETR00706 (Sheet 5).

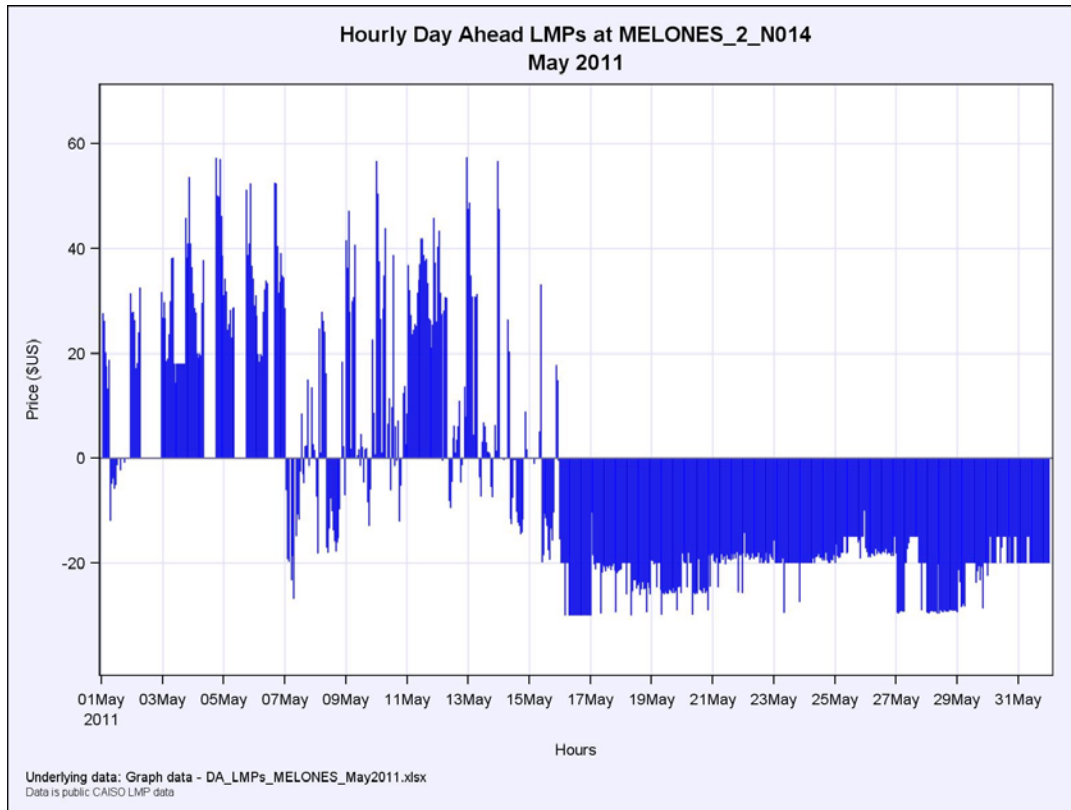
¹¹¹ ETRACOM Instant Message, 5/20/2011 11:23:30 AM, Bates No. ETR01510.

¹¹² CAISO_bid_data_May2011_NewMelones.xlsx (*See e.g.* Bid Data Tab, 31May2011 Hour_Ending 20).

¹¹³ CAISO_bid_data_May2011_NewMelones.xlsx.

¹¹⁴ *Id.*

¹¹⁵ LMPs_May_2011_NM.xlsx (Column L, Row 7).



ETRACOM ceased virtual trading at New Melones abruptly on May 31.¹¹⁶ ETRACOM offered no explanation for this. Moreover, as discussed below, abandoning this strategy after two weeks is inconsistent with ETRACOM's claim that its trades were designed to capture congestion caused by an anticipated hydro event that, by that time, had not yet materialized. The only material difference on June 1 (as compared to May 31) was the substantially smaller size of ETRACOM's CRR positions at New Melones.¹¹⁷

ETRACOM's virtual trading strategy at New Melones in May 2011 was uneconomic and led to increasing losses. Virtual supply offers are only profitable when the day-ahead LMP is higher than the HASP LMP. From May 1-13, the day-ahead LMP was approximately \$16 lower than the HASP LMP on average, meaning virtual supply offers lost \$16 per MWh.¹¹⁸ ETRACOM's \$0 and negative offers only decreased the day-ahead LMP further, increasing the spread between day-ahead and HASP LMPs,

¹¹⁶ ETRACOM company data – New Melones Only.xlsx (Virtuals Tab).

¹¹⁷ *Id.* (CRR Tab).

¹¹⁸ LMPs_May_2011_NM.xlsx (Data Tab, Column O, Row 10).

making ETRACOM's virtual transactions even more unprofitable. From May 14-31, the day-ahead LMP was approximately \$36 below the HASP LMP, on average.¹¹⁹

B. ETRACOM's intent

Staff finds that ETRACOM pursued its uneconomic virtual trades at New Melones in May 2011 with the intent to manipulate day-ahead LMP, lowering it to benefit its CRR positions. The lower ETRACOM was able to drive LMP, the more profitable its CRR positions became. In particular, the uneconomic nature of ETRACOM's virtual trades, the location, timing, and distinctiveness of its trades when compared to its CRR positions, and the implausible nature of its hydro event explanation all combine to establish scienter in this case.

ETRACOM's virtual trades as a whole were uneconomic, a fact known to ETRACOM prior to initiating its trading strategy and throughout the trading period. Market prices in early May made it obvious that absent a dramatic change in conditions, negatively priced virtual supply offers would lose money. In fact, ETRACOM's trades consistently lost money throughout the entire trading period. The only way ETRACOM's trades would have been profitable was if HASP prices dropped below ETRACOM's -\$30/MWh offer price. As discussed below in Section III.D, ETRACOM's claim that a hydro event was imminent, which would lead to significantly negative prices, is unpersuasive and unsupported. Historical data available in May 2011 shows that only 0.21% of hours had HASP prices lower than ETRACOM's -\$30/MWh supply offers, further demonstrating how unlikely it would be for ETRACOM to profit from its purported hydro event strategy.¹²⁰

The numerous characteristics of ETRACOM's virtual trading strategy indicate ETRACOM's intent to manipulate. These include: the location (*i.e.*, New Melones); timing (*i.e.*, start date, test period hours, expansion to 24 hour trading and end date); and the distinctiveness of the strategy compared to ETRACOM's virtual trading at other locations. Staff finds no other reason for ETRACOM to select New Melones for its virtual trading strategy other than an attempt to manipulate LMP to benefit its CRR positions. As discussed below, ETRACOM's only justification for this location is a purported hydro related strategy that inexplicably would only apply at New Melones. As outlined below, in fact, there were many other potentially more profitable locations ETRACOM could have chosen for such a strategy.

¹¹⁹ *Id.* (Data Tab, Column O, Row 11).

¹²⁰ LMPs_2009-2011_NM.xlsx (New Melones LMPs Tab, Column N, Row 4).

Furthermore, the timing associated with ETRACOM's trading strategy is revealing. The strategy was initiated only a few days after ETRACOM discovered that the profitability of its CRR positions was being adversely impacted by export congestion. This export congestion was unexpected and significant to ETRACOM, as evidenced by its failed attempts to determine the cause.¹²¹ Also significant is the targeting of those hours which experienced export congestion during the strategy's test period for May 14 and 15. The test period targeted precisely the eight hours that had experienced the export congestion. The exclusion of just one of those hours (hour-ending 7) on May 14 was the control variable in the test that ETRACOM used to see the impact of its trading strategy and gauge how successful it was at countering the export congestion and lowering the day-ahead LMP. This is a strong indication that ETRACOM intended its trades to counter the export congestion. The expansion of ETRACOM's strategy to 24 hours a day on May 16 (and thereafter) demonstrates that ETRACOM viewed its strategy as successful in the test period and worthy of expansion, even though the strategy suffered a net loss.¹²² Staff concludes it must be the impact on day-ahead LMP (and associated CRR profitability) that motivated the expansion. Finally, ETRACOM ended its trading strategy on the same day that the CRR positions that benefited from the strategy substantially decreased. ETRACOM's CRR positions at New Melones in June were substantially smaller and the incentive to continue the manipulation was greatly decreased.

Lastly, ETRACOM's virtual trading at New Melones in May 2011 was anomalous compared to its trading at all other locations. ETRACOM's virtual trading at New Melones was the only strategy that began mid-month and encompassed all hours for an extended period.¹²³ The distinctiveness of ETRACOM's trading strategy at New Melones indicates that it had a discrete purpose apart from ETRACOM's other strategies. Staff finds that purpose was to reverse congestion to benefit ETRACOM's CRR positions.

¹²¹ Tr. 120:2-121:13 (Rosenberg), ETRACOM Response to DR 6, e-mail from Michael Rosenberg to John Chiara on May 13, 2011 (Bates No. ETR00020).

¹²² Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Tab, Column Y, Rows 2 and 3).

¹²³ Etracom_May_2011_Virtuals-ALL LOCATIONS.pdf (generated from data originally located in ETR0001 (DR7).csv, formatted in Etracom_May_2011_Virtuals - all locations - graph data.xlsx).

C. The evidence does not support ETRACOM and Rosenberg’s explanations

ETRACOM and Rosenberg maintain that ETRACOM’s virtual trading at New Melones was part of a legitimate strategy based on expectations of a significant hydroelectric runoff event. They also argue that market design flaws led ETRACOM to trade the way it did. Additionally, they argue that ETRACOM’s trades were a legitimate response to observed price signals, ETRACOM did not intend or know its virtual trading would impact its CRR positions, and several characteristics of its strategy are not indicative of a manipulative scheme. Staff carefully considered these arguments and determined that they are either implausible or fail to explain ETRACOM’s behavior.

1. ETRACOM’s supposed expectation of profit from negative HASP prices due to a hydroelectric runoff event is unreasonable

ETRACOM’s explanation for its virtual trading at New Melones is that it expected to profit from a significant hydro event that failed to appear in May 2011 (or, in fact, at any time during 2011).¹²⁴ ETRACOM cites numerous NOAA and USDA reports that suggest that in early 2011 abnormally high snow pack and reservoir levels were recorded in the Pacific Northwest and California.¹²⁵ ETRACOM now claims – though there is no contemporaneous evidence to support it – that it predicted that these conditions would lead to dramatically increased hydro generation for some limited duration, lasting several hours to several days at New Melones, creating sudden and significant import congestion and negative HASP clearing prices in the -\$100s to -\$1000s/MWh (referred to as a hydro event).¹²⁶ ETRACOM predicted that these prices would be substantially lower than the day-ahead price, making virtual supply even at negative prices profitable during that period. Rosenberg said he believed the hydro event was “imminent” in May at New Melones because day-ahead congestion had been rising since March¹²⁷ and NOAA water flow predictions were revised significantly upward between March to early May.¹²⁸ While spring 2011 forecasts predicted high levels of hydro generation in California, and

¹²⁴ ETRACOM 1b.19 Response at 6-8 and 19-20.

¹²⁵ *Id.* Atts. F-I. Staff notes that none of these documents were provided to staff during the investigation despite staff’s request for all documents related to ETRACOM’s trading in CAISO. *See* ETRACOM Response to DR 3. Staff also notes that there is no evidence that ETRACOM employees reviewed these documents while developing their trading strategy at New Melones in May 2011.

¹²⁶ Tr. 306:9-17 (Rosenberg).

¹²⁷ *Id.* at 297:7-19; ETRACOM 1b.19 Response at 8-9 and 20.

¹²⁸ Tr. 298:1-14 (Rosenberg); ETRACOM 1b. 19 Response at 19.

ETRACOM was monitoring hydro conditions, the facts do not support ETRACOM and Rosenberg's claim.

i. Intensifying day-ahead congestion

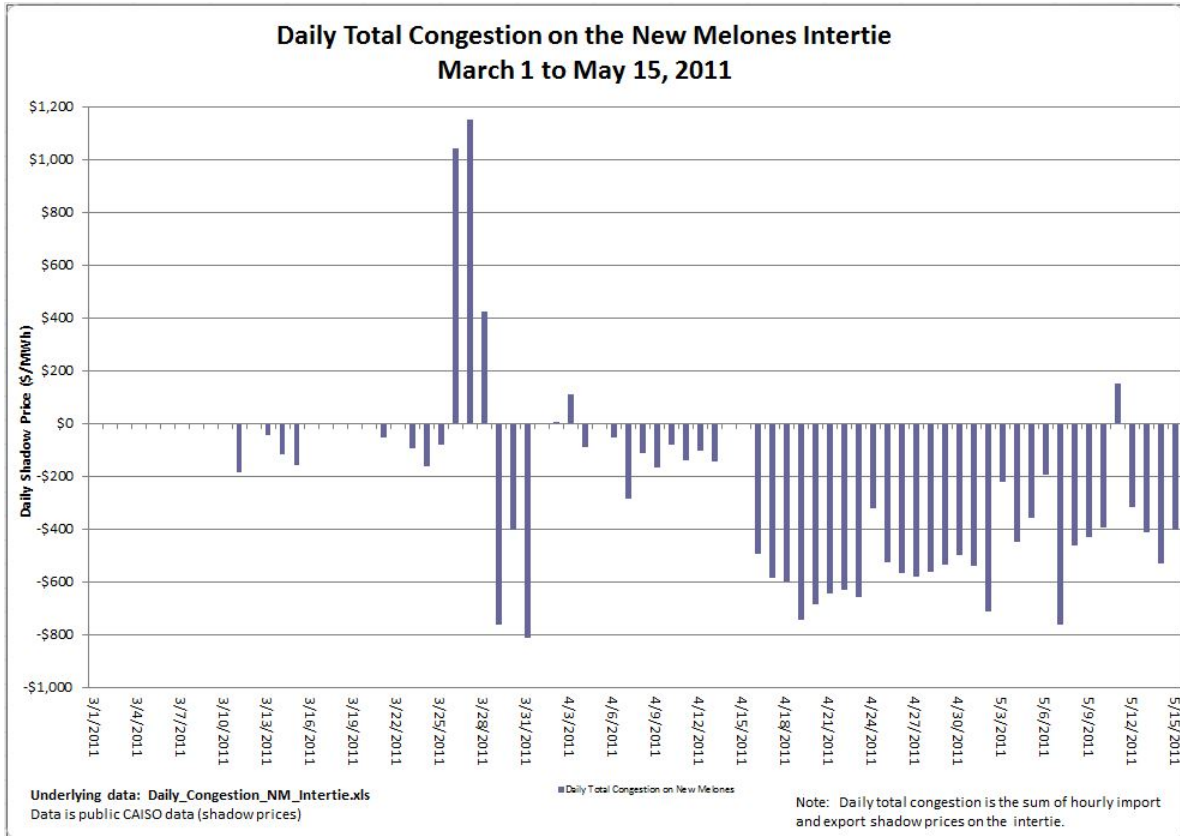
ETRACOM's assertion that increasing day-ahead import congestion in early May was an indication of an imminent hydro event not only fails to comport with ETRACOM's own congestion analysis, it ignores the role that ETRACOM itself played in causing increased levels of congestion at New Melones. ETRACOM's own analysis does not show increasing congestion in early May. It shows congestion in mid-April that was relatively consistent for the rest of that month, and all of early-to-mid May. Only in mid-May did congestion further increase - but that was attributable to ETRACOM's own conduct.¹²⁹ Increasing day-ahead congestion in late May is consistent with staff's finding that ETRACOM's virtual trades were placed to relieve export congestion and cause increased import congestion.¹³⁰

Below is a graph of daily total day-ahead congestion from March 2011 to mid-May, when ETRACOM initiated its virtual trading scheme.¹³¹ It is similar to ETRACOM's graph but the daily total includes both import and export congestion and does not include late May when ETRACOM was engaged in virtual trading that impacted congestion. As in ETRACOM's graph, overall import congestion (shown here as negative numbers) appears in March, and increases in mid-April. However, this is not when ETRACOM initiated its strategy. There is no significant increase in early May that could have signaled to ETRACOM that a change in market conditions was imminent. It is only after May 16 that a clear trend of increasing import congestion appears – a trend that is attributable to ETRACOM's own virtual bidding strategy.

¹²⁹ ETRACOM Response to 1b.19 at 9.

¹³⁰ Additionally, ETRACOM initially targeted hours with export congestion (not import congestion that it now claims was a significant signal) for its strategy.

¹³¹ Staff's Daily Total Congestion on the New Melones Intertie graph includes daily total net congestion, as opposed to ETRACOM's graph which only includes import congestion and does not account for export congestion. Staff selected daily total net congestion because ETRACOM placed offers in all 24 hours; therefore, its expected profits must consider congestion in all 24 hours.



ii. Magnitude of a hydro event

ETRACOM's claimed reliance on upward revisions to NOAA's water supply forecasts does not make sense.¹³² Each spring, NOAA projects and reports how much water the melting snow will supply to hundreds of river basins in the western United States. While NOAA revised its already high forecasts at the New Melones reservoir upward in May, the increased runoff associated with the water supply projections in 2011 were forecasted to occur gradually over a four-month period, rather than the sudden or multiple-day event that ETRACOM cites.¹³³ This is precisely why potential profits from hydro runoff are best captured by CRRs, a longer term product. Staff finds nothing in the NOAA forecasts to suggest that a large scale hydro event was poised to begin in mid-May.

¹³² ETRACOM Response to 1b.19 at 19-20 and Att. G-I.

¹³³ This is shown in the NOAA Seasonal Trend Plot cited by ETRACOM. *Id.* Att. I. As the title suggest, this is a seasonal projection for April to July. An upward adjustment in May was not indicative of an immediate event, but rather an increase in water supply for the entire 4 month period.

An unscheduled dramatic increase in hydro generation, causing significant congestion persisting for several hours or days, was highly unlikely. The Bureau of Reclamation manages the New Melones reservoir to prevent this outcome. Dam managers are constantly monitoring and adjusting water levels to account for water rights, environmental impacts and generation profitability. They forecast inflows in advance and adjust throughout the spring and summer to ensure they maintain safe and appropriate water levels. Only under extreme flood conditions would dams be operated unexpectedly at full capacity or above (spilling water). In May 2011, the Bureau of Reclamation operated the New Melones Dam at roughly 50 percent of capacity and maintained the reservoir at high levels, but still with capacity available to accommodate net inflows.¹³⁴

Rosenberg's claimed expectation that an event similar to a 1997 hydro event known as the Pineapple Express is implausible.¹³⁵ When the Pineapple Express occurred, a winter storm coming from Hawaii brought warm rain to California, which triggered a massive snow melt over several days.¹³⁶ This event led many reservoirs throughout the Sierra Nevada region to flood quickly and unexpectedly, resulting in prodigious hydro generation.¹³⁷ The key to this event was the combination of warm rain and high snow pack. Without warm rain to melt the snow at an accelerated rate, even heavy snow melt over the course of several months can be controlled by dam managers. While snow pack and water levels at New Melones in 1997 and 2011 were similar, there is no evidence that an event like the Pineapple Express, and the associated accelerated snow melt, could reasonably be expected.

ETRACOM's citation of numerous Instant Messages and emails regarding hydro expectations do not change this conclusion.¹³⁸ First, staff does not dispute that

¹³⁴ Bureau of Reclamation New Melones Dam Hydraulics & Hydrology (http://www.usbr.gov/projects/Facility.jsp?fac_Name=New+Melones+Dam&groupName=Hydraulics+%26+Hydrology) (showing 8,300 cubic feet per second as outflow capacity); U.S. Army Corps of Engineers, Sacramento District Water Control Data System (<http://www.spk-wc.usace.army.mil/cgi-bin/getplot.py?archive=true&plot=nmlr&length=wy&interval=d&wy=2011>) (showing outflow at approximately 4,000 cubic feet per second in mid-May 2011 and 200,000 acre feet of storage available in mid-May).

¹³⁵ Tr. 140:20-141:17 (Rosenberg); *see also* ETRACOM Response to 1b.19 at 12.

¹³⁶ NOAA Storm Summary (http://www.cnrfc.noaa.gov/storm_summaries/jan1997storms.php).

¹³⁷ *Id.*

¹³⁸ ETRACOM Response to 1b.19 at 24.

ETRACOM was interested in spring hydro conditions and related impacts on the market. It is very common for traders to consider seasonal changes in supply and demand. In fact, that is the basis for the purchase of ETRACOM's CRR positions at New Melones.¹³⁹ None of the Instant Messages or emails cited by ETRACOM demonstrate an expectation of an immediate and significant hydro event. If anything, they demonstrate ETRACOM's general understanding of hydro conditions during the spring and early summer. With such knowledge, ETRACOM would have known that the likelihood of a significant event was virtually impossible.

iii. Payout of a hydro event

Without the ability to predict the exact hours of a hydro event, losses from uneconomic bidding prior to the event can quickly outweigh potential gains. Rosenberg acknowledges it is impossible to predict the exact timing of a hydro event.¹⁴⁰ Therefore, it was ETRACOM's purported goal to be in the market at the start of the event because of the predicted limited duration and the risk that other market participants would quickly respond to price signals that would converge the HASP and day-ahead prices and limit the profitability of additional virtual supply.¹⁴¹ ETRACOM claims it viewed its trading on a day-to-day basis, viewing the prior day's losses as "sunk costs."¹⁴² Rosenberg testified that he expected to recoup his losses.¹⁴³ However, it is difficult to imagine how Rosenberg could have viewed this strategy as potentially profitable after several days of repeated and accumulating losses.

Rosenberg was also uncertain of the expected payout and did not conduct any return calculations or risk analysis.¹⁴⁴ At most he had a vague and wide ranging expectation that if a hydro event occurred, it would lead to negative HASP prices below his offer price.¹⁴⁵ Essentially he had no idea what the potential returns would be from this very expensive strategy. Because Rosenberg failed to run any return calculations, he cannot provide any contemporaneous evidence to support his claims that ETRACOM could have profited from this strategy. He also cannot provide any evidence to justify

¹³⁹ Tr. 114:21-115:5 (Rosenberg).

¹⁴⁰ *Id.* at 142:11-17.

¹⁴¹ *Id.* at 320:6-321:5.

¹⁴² ETRACOM Response to 1b.19 at 21.

¹⁴³ Tr. 315:2-9 (Rosenberg).

¹⁴⁴ *Id.* at 306:9-308:12.

¹⁴⁵ "...it could be hundreds, hundreds of dollars. You look at -- it could be \$1,000 or thousands of dollars, more than \$1,000, right, for LMP at that location." *Id.* at 306:11-13.

how long he thought he could afford to keep his position on and still profit had a hydro event had actually occurred. While his potential gains were uncertain, his losses were evident immediately. Between May 16 and May 31, ETRACOM's virtual supply strategy cost the company an average of about \$2,600 per day.¹⁴⁶ Given the difficulty in predicting the timing of an event, the uncertain payout, and the fact that a significant hydro event was not likely to occur at all – staff finds ETRACOM's claimed motivation behind its trading strategy to be implausible.

ETRACOM and Rosenberg's argument that their hydro event predictions were borne out by their post-hoc observation that modestly negative LMPs appeared at New Melones sporadically in mid-July – six weeks after abandoning the position – is not persuasive.¹⁴⁷ Reservoir levels were only slightly higher in July than in May and still below max levels. The outflow rates at New Melones remained at roughly 50 percent of capacity.¹⁴⁸ These physical conditions are not indicative of the large-scale, unprecedented pricing event ETRACOM purportedly predicted. Consistent with these physical conditions, prices during the July 8-22 period isolated by ETRACOM also do not indicate an unprecedented event. HASP prices at New Melones were only below -\$30/MWh (ETRACOM's virtual supply offer price from May) in fewer than 7% of hours.¹⁴⁹ While a few of these hours had significantly negative HASP prices, those hours are heavily outweighed by hours with a \$0 HASP. When one views HASP prices on each day during this period as a whole, as ETRACOM must because its strategy had been to bid 24 hours a day, and were therefore exposed to pricing in all 24 hours, the daily HASP prices were only negative on July 14. And that price, -\$47/MWh¹⁵⁰ is only a fraction lower than ETRACOM's -\$30/MWh offers; it was nowhere close to the multitudes of -\$100s to -\$1,000s/MWh lower that Rosenberg allegedly predicted.

ETRACOM argues its scheme would have netted approximately \$25,000 between July 8 and 22 from 5 MW of virtual supply.¹⁵¹ But this is misleading. Most importantly, ETRACOM's calculations assume that day-ahead LMP would not be set by its negative supply offers, as in May. Instead ETRACOM used published prices that were not

¹⁴⁶ Hourly Virtual PNL_March-July2011_NM.xlsx (May 2011 Daily Summary, Column E, Row 4).

¹⁴⁷ ETRACOM Response to 1b.19 at 13 and 20.

¹⁴⁸ U.S. Army Corps of Engineers, Sacramento District Water Control Data System (<http://www.spk-wc.usace.army.mil/fcgi-bin/getplot.py?archive=true&plot=nmlr&length=wy&interval=d&wy=2011>).

¹⁴⁹ LMPs_July_2011_NM.xlsx (LMP Data Tab, Column H).

¹⁵⁰ *Id.* (Daily Summary Tab, Row 17).

¹⁵¹ ETRACOM Response to 1b.19 at 13.

artificially lowered by its manipulative conduct. ETRACOM's calculation also assumes it would clear 5 MW, which is more than it was able to consistently clear in May. Lastly, its calculations isolate the July 8-22 period without justifying how ETRACOM would know to trade during that specific period. Losses from before or after that period could quickly reduce ETRACOM's potential \$25,000 profit.

In sum, nothing about physical or market conditions in July reasonably supports ETRACOM and Rosenberg's claim that their virtual trading strategy in May was motivated by the expectation of a significant hydro event. Instead, the record consistently supports the conclusion that ETRACOM's motivation was to increase the value of its CRR positions.

iv. Location of a hydro event

Other factors undermine ETRACOM's argument that it was implementing a legitimate, fundamentals-based strategy. For one, ETRACOM failed to offer a plausible explanation of why it expected a hydro event to occur at New Melones, as opposed to other similar locations in CAISO that are also impacted by hydro flows. Staff finds that ETRACOM's virtual strategy would have been potentially more profitable at other similar locations where the day-ahead LMP was typically positive.¹⁵² Consequently, ETRACOM likely could have cleared positive (as opposed to negative) supply offers. That would have lessened its losses on non-event days because the spread between the day-ahead LMP and HASP would have been smaller. However, at those locations ETRACOM did not hold CRR positions that were unexpectedly declining in profitability.

ETRACOM argues that New Melones was the dominant constraint in the region and that it had not yet observed HASP congestion.¹⁵³ Price data shows this assertion to be incorrect. Congestion levels at New Melones and similar locations were comparable in April and early May, except in a few isolated hours.¹⁵⁴ Further, in those hours the congestion was largely driven by a high internal price in CAISO rather than supply fundamentals. As a result, virtual supply was not particularly profitable because the congestion was largely negated by a high internal energy price resulting in modest real-time (or HASP) LMPs. Even if this did suggest that hydro had come in at these points, it should have further demonstrated to ETRACOM the unlikely nature of a significantly

¹⁵² Hourly_Charts_Hydrnodes.pdf (graphs of price spreads and real-time congestion at comparable hydro nodes generated from CAISO LMP data available in lmps_hydrnodes_2011.csv).

¹⁵³ ETRACOM claims its strategy need not be optimal to be legitimate. ETRACOM Response to 1b.19 at 33-34.

¹⁵⁴ Hourly_Chart_Hydrnodes.pdf.

negative priced event lasting for more than a few isolated hours. Lastly, ETRACOM's alleged belief that hydro had already come in at these locations is not credible. It was still in the early part of what was predicted to be a record hydro season and they knew significant snow melt was still to come.¹⁵⁵ The only reasonable explanation for why ETRACOM engaged in virtual trading at New Melones was to impact the LMP and benefit its CRR positions.

2. Market design flaws are not responsible for ETRACOM's conduct or market harm

ETRACOM argues that because CAISO eventually stopped offering CRRs at New Melones, and ceased virtual bidding at all interties, the market was "dysfunctional" and the direct cause of the harm to the market.¹⁵⁶ ETRACOM also blames a software error for incentivizing its virtual supply offers at New Melones.¹⁵⁷ These arguments have no bearing on the matter before the Commission. The issue in this case is whether ETRACOM entered into intentional manipulative conduct. Despite ETRACOM's exhaustive discussion of what they classify as market flaws, it does not and cannot link these flaws to a legitimate explanation for its trading.

CAISO's decision to discontinue offering CRR positions and virtual trading at New Melones occurred after ETRACOM's conduct in May 2011 and is irrelevant to ETRACOM's conduct. As ETRACOM admits in its response, the substantive concern underlying CAISO's decision to stop offering CRR positions at New Melones was based on revenue inadequacy.¹⁵⁸ Due to the fully encumbered nature of the line (physical flows were limited to one entity and perfectly hedged) there simply were not enough funds from physical transactions to pay the congestion fees to CRR holders. ETRACOM fails to argue why revenue inadequacy justifies its conduct. Similarly, CAISO terminated virtual trading at New Melones in August 2011 due to inefficiencies related to the fully encumbered nature of the line. CAISO eventually determined that virtual trading at all interties created an undesirable incentive to arbitrage the structural difference between congestion prices in the day-ahead and the 15-minute market (successor to the HASP

¹⁵⁵ In fact, Mike Davis noted in an Instant Message on May 14, 2011 that "ski resorts are still open" indicating that snow melt had not yet occurred. ETRACOM Response to DR 6, 5/14/2011 1:45:21 PM Instant Message from Mike David (Bates No. ETR01496-98).

¹⁵⁶ ETRACOM 1b.19 Response at 15-17 and 38-42.

¹⁵⁷ *Id.* at 39.

¹⁵⁸ DMM 2011 Annual Report at 152, *available at* <http://www.caiso.com/Documents/2011AnnualReport-MarketIssues-Performance.pdf>; ETRACOM 1b.19 Response at 15-16.

market) to the detriment of market efficiency.¹⁵⁹ This inefficiency is unrelated to ETRACOM's intent to lower day-ahead LMP by submitting uneconomic virtual supply to benefit its CRR positions.

ETRACOM also argues that a software pricing error at New Melones, disclosed by the DMM in its referral, resulted in false price signals in early May 2011, leading ETRACOM to believe it must place \$0 or negative offers to clear virtual supply at New Melones.¹⁶⁰ The software error was present when virtual trading began in Feb. 2011 and was not corrected until after July 2011. In some hours, the software set the LMP at \$0 when it should have been a positive amount. Specifically, it set LMP to \$0 if the lowest-priced virtual supply offer, which should have set LMP, was positive.¹⁶¹ ETRACOM argues these price signals, not an intent to manipulate the market, influenced its bidding strategy.

The logic underlying ETRACOM's argument is flawed. First, ETRACOM fails to explain why this error influenced its bidding behavior for two weeks in May, but not during the other five and a half months that it was present during which ETRACOM was active in the market. Moreover, during the two weeks when this error supposedly did influence its behavior, at best, this argument could only explain why ETRACOM's offers were zero or negative. ETRACOM's low offers, including offers at the bid floor, demonstrate its willingness to transact at any cost regardless of the price signal. The software error fails to explain why ETRACOM submitted virtual offers to begin with, nor does it explain why ETRACOM persisted in sustaining money-losing virtual trades. Even if in some hours the software error misled ETRACOM, an economic strategy to sell at negative prices would only make sense if there was significant negative pricing persisting in the HASP, which ETRACOM could not have reasonably expected. Indeed, the software error should have signaled to ETRACOM that its virtual trading was more costly and potentially less profitable.¹⁶²

¹⁵⁹ *Cal. Indep. Sys. Operator Corp.*, 152 FERC ¶ 61,234 at P 42 (2015).

¹⁶⁰ ETRACOM Response to 1b.19 at 39-40.

¹⁶¹ DMM Referral, Attachment 1 at fn. 2.

¹⁶² With regard to these claims, ETRACOM also argues staff has withheld exculpatory or potentially exculpatory information from ETRACOM. ETRACOM Response to 1b.19 at 46-47. This is based on ETRACOM's fundamental misunderstanding of the Commission's Policy Statement on Disclosure of Exculpatory Materials, 129 FERC ¶ 61,248 (2009). Staff has no exculpatory material to provide ETRACOM. The vast majority of evidence gathered in this investigation was provided by ETRACOM or is publically available, and therefore not subject to the policy. Additionally, while not exculpatory, staff has provided other factual material in staff's possession, such as market data and documents produced by the DMM. What little staff has not provided is in the

3. ETRACOM was not responding to price signals and its trading was uneconomic

ETRACOM argues that its virtual supply offers are a legitimate response to export congestion that appeared beginning May 8.¹⁶³ This argument fails for several reasons.¹⁶⁴ First, this rationale is not supported by contemporaneous documents or testimony obtained during the investigation. It was introduced after the fact by ETRACOM's expert economist. Moreover, it is inconsistent with ETRACOM's hydro event explanation. ETRACOM maintained throughout the investigation that it placed its virtual supply offers to be profitable in a hydro event that would be reflected in *future* prices. It cannot at the same time argue that it placed the virtual supply offers in response to *current* price signals. Furthermore, had ETRACOM been trying to capture potential profits available due to export congestion, it would not have continued to bid when it became evident it was a losing position. Lastly, there was no reason for ETRACOM to expand its strategy to 24 hours if it was only responding to price signals from export congestion that only occurred in some off-peak hours.

Staff also disagrees with ETRACOM's argument that because it did not set price in every hour it bid, its offers were not solely responsible for the low LMP during the end of May and therefore its trading was economic.¹⁶⁵ First, ETRACOM need not set the price in every hour to engage in manipulation. Second, ETRACOM's behavior drove market conditions during the entire May 14 to 31 period, regardless of whether its offers set price. Virtual demand bids increased in late May in response to low day-ahead prices caused by ETRACOM's bidding.¹⁶⁶ Virtual demand bids were quite profitable because ETRACOM's negative offers broadcast the signal that it was willing to pay up to \$30/MWh to provide supply to a virtual demand bidder. By the end of May, ETRACOM had attracted more virtual demand bids than it was offering in supply; therefore, in some

nature of notes and analysis that reflect attorney work product and mental impressions, and again, it is not exculpatory. ETRACOM's argument that the production of non-exculpatory evidence somehow establishes that staff has additional evidence it has not provided is without foundation.

¹⁶³ ETRACOM Response to 1b.19 at 10 and 29-30.

¹⁶⁴ ETRACOM also argues that other participants were also incentivized to submit virtual supply. *Id.* at 22. In fact, only one other entity placed virtual supply offers at New Melones in early May 2011 and its offers were mostly at positive prices. When ETRACOM was bidding virtual supply that entities offers did not compete with ETRACOM's. CAISO_bid_data_May2011_NewMelones.xlsx.

¹⁶⁵ ETRACOM Response to 1b.19 at 21-22.

¹⁶⁶ *Id.*

hours the uncleared virtual demand bids set the clearing price because they were the next increment.¹⁶⁷ Absent ETRACOM's negative virtual supply offers, fewer virtual MWs would have cleared and the LMP would have been higher.

4. ETRACOM understood and intended its virtual trading to impact its CRR positions

ETRACOM argues it was unaware that virtual transactions could impact the value of CRR positions and that its virtual trading was evaluated without regard for its CRR profitability.¹⁶⁸ To support this contention, ETRACOM: 1) argues it was inexperienced at trading virtuals; 2) blames numerous characteristics of the market for the market outcomes; 3) argues because its offers were within the CAISO established position limits it could not have known its virtual trades could move LMP or impact CRR positions; 4) argues that its profits from the New Melones CRR position were unremarkable, not extraordinary; and 5) argues that had it understood the relationship it would not have bid virtual demand in June 2011. These explanations are implausible.

ETRACOM tracked the relationship between its virtual bid prices and cleared LMP and was aware its negative bids set the day-ahead price.¹⁶⁹ Moreover, it had to know that the negative LMPs at New Melones benefited the profitability of its CRR positions: the relationship between the day-ahead price (including congestion) and the profitability of CRR positions is fundamental to the product's value, and Rosenberg understood this concept.¹⁷⁰ To a trader with Rosenberg's educational background and sophisticated understanding of market dynamics this would be basic knowledge. ETRACOM prepared daily profitability reports, which Rosenberg reviewed frequently.¹⁷¹ From these reports, Rosenberg would have quickly seen the dramatic increase in the profitability of ETRACOM's CRR positions at New Melones and, because of the obvious relationship between day-ahead price and CRR profitability, realized it was ETRACOM's virtual trading behavior that was causing that dramatic increase.

¹⁶⁷ CAISO_bid_data_May2011_NewMelones.xlsx.

¹⁶⁸ ETRACOM Response to 1b.19 at 14-15 and 34-37; Tr. 140:1-13 (Rosenberg).

¹⁶⁹ Tr. 139:14-18 (Rosenberg); *see, e.g.*, Spreadsheet. ETR03140.xlsx (20110522_20110522_PRC_LMP_DAM_2 Tab).

¹⁷⁰ ETRACOM Response to DR 6, e-mail from Michael Rosenberg to AK, Joseph Bryngelson and Mike W. Davis on March 30, 2011 (Bates No. ETR01284); Tr. 140:1-2 (Rosenberg).

¹⁷¹ Tr. 111:13-21 (Rosenberg); *See* Spreadsheet ETR00706 (Sheet 5).

Furthermore, ETRACOM's tracking of bids to cleared LMPs undermines ETRACOM's argument that it was "inexperienced." It demonstrates that it understood how its bids could set LMP and knew how the market functioned. Even if staff could reasonably conclude that Rosenberg was inexperienced – and we do not – that is not a valid defense to market manipulation.¹⁷²

ETRACOM next argues that the fully encumbered nature of the line allows very small virtual bids (relative to the physical capacity of the line and within the established position limits) to have a disproportionate impact on congestion prices at the intertie.¹⁷³ ETRACOM argues that because it was not aware of the line's characteristic, it could not have known that its virtual transactions would impact congestion prices and consequently its CRR positions. Staff does not dispute that ETRACOM may not have known the line was fully encumbered. However, the unique characteristic of the line is irrelevant. The line was congested before ETRACOM placed its virtual supply offers, so ETRACOM knew that the line was at its limit (regardless of what the limit was), and, consequently, that small virtual transactions would have an effect on pricing. If the line was not at its limit, congestion would not have been present. Moreover, ETRACOM also had reason to believe that small virtual transactions could affect pricing because it was aware of the maximum permitted virtual supply and demand position.¹⁷⁴ These position limits are set at 5% of a transmission line's Operating Transfer Capacity (OTC). The OTC at New Melones was set to 384 MW (the physical capacity of the intertie) in the import direction, but was set at only 15 MW in the export direction.¹⁷⁵ While ETRACOM's supply offers between 1-5 MW are a small portion of the import OTC, they are up to one-third of the export OTC. Because ETRACOM was aware of the small position limits in the export direction at New Melones, it was clear that it would only take a small MW amount of imports to counter export congestion.

ETRACOM's argument that its CRR profits were not extraordinary and therefore it would not notice the positions' gains as a result of ETRACOM's virtual trading also fails to persuade staff. ETRACOM's CRR positions sourced at New Melones were two of its most profitable CRR positions at the time.¹⁷⁶ The on-peak CRR position was over

¹⁷² See *Varljen v. H.J. Meyers, Inc.*, No. 97 Civ. 6742(DLC), 1998 WL 395266 (S.D.N.Y. July 14, 1998) (holding a trader's inexperience not only failed to excuse manipulation but established that they were reckless for the purpose of determining their scienter).

¹⁷³ ETRACOM Response to 1b.19 at 35-36.

¹⁷⁴ Tr. 256:24-259:5 (Rosenberg).

¹⁷⁵ DMM Referral, Attachment 1 at 2.

¹⁷⁶ *Etracom_CRR_profit_by_contract_Jan-July2011.xls* (Jan-July 2011 Tab, Column W, Rows 2 and 4).

twice as profitable as the next most profitable position between January and July 2011.¹⁷⁷ Additionally, New Melones was a frequent topic for discussion among ETRACOM's employees throughout May.¹⁷⁸ In fact, Davis even referred to ETRACOM's profits at New Melones as a "windfall."¹⁷⁹

Lastly, ETRACOM's June virtual demand trading does not validate its May virtual supply trading.¹⁸⁰ Staff does not argue that ETRACOM's June trading was part of its manipulative scheme. ETRACOM's June CRR positions sourced at New Melones were significantly smaller (approximately 21% of the May on-peak and 31% of the May off-peak);¹⁸¹ therefore, the incentive to manipulate CRR profits was significantly less. Additionally, ETRACOM's June virtual demand trading is inconsistent with its hydro event theory. ETRACOM offers no explanation for trading on May 31 based on a purportedly imminent hydro event that would lead to significantly negative HASP prices, only to contradict that expectation the following day, betting that virtual demand bids would be profitable because day-ahead prices are lower than those same HASP prices it predicted to be significantly negative.

5. Trading strategy characteristics

ETRACOM disputes staff's conclusion that May 14 and 15 served as a test period for ETRACOM's scheme. Instead, ETRACOM argues the selection of HE 1-6 and 23-24 for May 14 and 15 were consistent with its general practice of limiting the exposure of new strategies and the fact that off-peak hours were cheaper.¹⁸² When it was successful in those hours, it expanded the scope of its trading. Additionally, if ETRACOM really believed a hydro event was imminent, by its own logic it would have started its strategy by bidding in all 24 hours to ensure it was in the market when the event occurred in order to capture as much profit as possible from a potentially short-lived event. ETRACOM also argues that the addition of hour ending 7 for May 15 was not a "control hour" as staff suggests.¹⁸³ However, it provides no additional explanation why this hour was

¹⁷⁷ *Id.*

¹⁷⁸ *Supra* note 102.

¹⁷⁹ ETRACOM Response to DR 6, 5/21/2011 10:09:57 PM Instant Message from Mike Davis (Bates No. ETR01512).

¹⁸⁰ ETRACOM submitted 1 MW virtual demand bids for all hours from May 1-7. It only cleared on some hours on June 7. ETRACOM also argues its June trading demonstrates it had no intent to engage in market manipulation. ETRACOM Response to 1b.19 at 25.

¹⁸¹ ETR0001 (DR7).csv.

¹⁸² ETRACOM Response to 1b.19 at 29.

¹⁸³ *Id.* at 29.

chosen for May 15 and not May 14. The only reasonable explanation is that it provided an ETRACOM an opportunity to see the impact its virtual supply offers had on eliminating export congestion.

ETRACOM also argues the expansion of its scheme to 24 hours a day for May 16 through 31 is not evidence of manipulation because, in July 2011, congestion occurred primarily during peak hours.¹⁸⁴ As explained above, the July event was not the significant hydro event ETRACOM had predicted and did not influence the decisions ETRACOM made in May. In addition, ETRACOM argues that the decrease in its offer price after May 16 was an attempt by ETRACOM to clear more MWs and be inframarginal (offer low so that higher priced offers set the price).¹⁸⁵ Staff does not dispute that ETRACOM was attempting to clear more MWs. Indeed, ETRACOM was trying to clear more MWs because clearing more MWs, and at the lowest price possible, served to lower LMP further, thereby increasing the benefits to ETRACOM's CRR position.

Lastly, ETRACOM argues that implementing its trading scheme at New Melones in the middle of May 2011, and applying it to all hours of the day, was not anomalous compared to its trading at other locations. Specifically, ETRACOM points to subsequent occasions, primarily after May 2011, when it placed bids mid-month and for all hours for sequential days.¹⁸⁶ It also points to other strategies that had a test period.¹⁸⁷ However, ETRACOM admittedly relies on trading data from *after* May 2011. Staff's observation is that the New Melones trades were anomalous at the time the manipulation occurred. ETRACOM's later trading behavior does not refute this point.

D. The conduct is in connection with a jurisdictional transaction

The Commission has jurisdiction over trading activity conducted within Commission-approved RTOs/ISOs such as the CAISO. Therefore, ETRACOM's virtual supply offers and the CRR positions affected were jurisdictional transactions. ETRACOM's virtual trades also affected physical prices. ETRACOM's scheme, therefore, was conducted "in connection with the purchase or sale of ... electric energy or ... transmission of electric energy subject to the jurisdiction of the Commission,"¹⁸⁸ meeting the third element of the Anti-Manipulation Rule.

¹⁸⁴ *Id.* at 30.

¹⁸⁵ *Id.* at 10-11.

¹⁸⁶ *Id.* at 31-33.

¹⁸⁷ *Id.*

¹⁸⁸ Order No. 670, FERC Stats. & Regs. ¶ 31,202 at P 49.

IV. Sanctions

A. Harm and unjust profits

Staff conducted an analysis to determine what unjust profits ETRACOM received as a result of its manipulative conduct. Between May 14 and 31, ETRACOM earned \$517,417 on its CRR positions sourced at New Melones as a result of congestion on the intertie.¹⁸⁹ Staff calculated that \$202,345 was earned from non-manipulative trading.¹⁹⁰ Therefore, ETRACOM received unjust profits of \$315,072 and Enforcement staff recommends disgorgement of this amount, plus interest, to CAISO for distribution to market participants affected by ETRACOM's conduct.¹⁹¹

Staff also estimates that ETRACOM's manipulation resulted in the market overpaying all New Melones CRR source holders, including ETRACOM, \$1,514,207 between May 14 and 31, 2011.¹⁹² This overpayment was funded by New Melones CRR sink holders and revenue inadequacy. To calculate this amount, staff took the total amount paid to source holders between May 14 and 31 and subtracted what staff estimated to be the earnings based on non-manipulative trading. CRR positions sourced at New Melones were profitable prior to the implementation of ETRACOM's scheme; however, the profitability of the positions decreased between May 8 and 13 because WAPA had scheduled 1 MW of export at New Melones in off-peak hours. WAPA continued to schedule 1 MW of export in most off-peak hours throughout the end of May. Therefore, staff determined that the average profits earned between May 8 and 13 provide a reasonable measure of what profits would have been for the rest of the month had ETRACOM not engaged in manipulation. Staff used those averages to estimate what portion of the payment to source holders was legitimate. Staff concluded that of the total \$2,122,947 paid to source holders, \$608,740 was legitimate gain and \$1,514,207 was due to ETRACOM's manipulation.¹⁹³

¹⁸⁹ Etracom – Unjust Profits.xlsx (Etracom Unjust Profits Tab, Column B, Row 5). The value of congestion at the intertie is marginally (approximately \$6) less than CRR revenue based on the difference between the LMP congestion components of ETRACOM's source and sink locations.

¹⁹⁰ *Id.* (Etracom Unjust Profits Tab, Column C, Row 5).

¹⁹¹ *Id.* (Etracom Unjust Profits Tab, Column D, Row 6).

¹⁹² Etracom – Market Harm.xlsx (Market Harm Summary Tab, Column L, Row 6).

¹⁹³ *Id.* (Market Harm Summary Tab, Columns F, K and L, Row 6).

B. Civil penalties

ETRACOM's violation falls under the Penalty Guidelines' Chapter Two category guideline for tariff and regulatory violations.¹⁹⁴ (§ 2B1.1) In applying the Penalty Guidelines staff considered that ETRACOM's manipulative trades led to \$1,514,207 in harm to the market and lasted for more than 10 days. Staff also considered that ETRACOM cooperated with the investigation. Staff recommends the Commission impose a civil penalty on ETRACOM of \$2,400,000 consistent with the application of the Penalty Guidelines.

Staff also recommends the Commission impose a civil penalty on Rosenberg of \$100,000. Staff finds this to be an appropriate range given Rosenberg's primary responsibility for developing and implementing ETRACOM's manipulative scheme and the seriousness of the violation.

C. ETRACOM's arguments and staff's responses

ETRACOM has argued that staff overestimates market harm and unjust profits. Specifically, it argues staff should not consider: 1) hours in which WAPA scheduled 1 MW of exports because that sent a price signal to incentivize virtual supply, and 2) hours where ETRACOM's bids were inframarginal or did not clear.¹⁹⁵ Staff finds incorporation of these hours appropriate because ETRACOM's trading was not responding to price signals from WAPA's scheduled export; its trades were placed with an intent to lower prices to benefits its CRR positions. ETRACOM's intent to manipulate prices occurred in all hours it bid, whether or not it was inframarginal or cleared. ETRACOM's behavior drove market conditions the entire May 14 to 31 period. As stated above, when ETRACOM was inframarginal or failed to clear it was because demand bids prompted by ETRACOM's negative supply offers set the price.¹⁹⁶

¹⁹⁴ *Revised Policy Statement on Penalty Guidelines*, 132 FERC ¶ 61,216 (2010).

¹⁹⁵ ETRACOM Response to 1b.19 at 42-44.

¹⁹⁶ In ETRACOM's response to staff's preliminary findings letter, it proposed an extrapolation method for calculating harm and unjust profits that yielded lower values than staff's calculation. Specifically, ETRACOM's method averaged profits between May 1 and May 13, as opposed to May 8 through 13, then extrapolated profits between May 14 and May 31 based on that average. Staff finds ETRACOM's inclusion of average profits from May 1 through 7 inappropriate. Export congestion caused by WAPA's physical schedules beginning May 8 lowered ETRACOM's legitimate profits, therefore an average including profits from days in which there was no export congestion inflates ETRACOM's legitimate profits and decreases its unjust profits. ETRACOM did not make this argument in response to staff's 1b.19 letter.

ETRACOM also argues that even if the Commission finds it to be in violation, the Commission should assess no civil penalty.¹⁹⁷ ETRACOM argues the Commission should deviate from the Penalty Guidelines because of the market design flaws it argues are responsible for its conduct and the associated market harm. Staff disagrees. Nothing about ETRACOM's conduct or underlying market conditions suggests a departure from the Penalty Guidelines is appropriate. As staff has stated above, the market design flaws noted by ETRACOM do not explain or excuse ETRACOM's manipulative conduct. ETRACOM cites two settlements from 2011 to support its case; however, these are not comparable.¹⁹⁸ The facts of these cases are significantly different; the conduct in those settlements was not cross product manipulation, and did not cause harm to the market.¹⁹⁹ Here, staff estimates ETRACOM harmed the market by \$1,514,207.

Lastly, ETRACOM argues that the Commission lacks authority to bring an enforcement action against Rosenberg in his individual capacity. Section 222 of the Federal Power Act prohibits "any entity" from using a "manipulative or deceptive device or contrivance" in connection with the purchase or sale of wholesale electric energy or transmission services.²⁰⁰ ETRACOM argues the plain meaning of the term "entity" includes organizations, and does not include natural persons.²⁰¹ This is contrary to Order 670, Commission precedent, and federal district court precedent.²⁰² ETRACOM also argues it would be unfair to penalize Rosenberg because as a 75% owner of the company,

¹⁹⁷ ETRACOM Response to 1b.19 at 46.

¹⁹⁸ *In re Holyoke Gas and Electric Dept.*, 137 FERC ¶ 61,159 (2011) (order approving settlement finding that a failure to report and schedule generator outages with ISO New England, Inc. (ISO-NE) violated section 1c.2); *Dartmouth Power Associates LP*, 134 FERC ¶ 61,085 (2011) (order approving settlement finding that a failure to schedule a generator outage prior to taking a unit of service for repairs violated 18 C.F.R. § 35.41(b), and various provisions of ISO-NE's tariff).

¹⁹⁹ *Holyoke*, 137 FERC ¶ 61,159 at P 14; *Dartmouth*, 134 FERC ¶ 61,085 at P 19.

²⁰⁰ 16 U.S.C § 824v (2015).

²⁰¹ ETRACOM Response to 1b.19 at 45.

²⁰² Order 670, FERC Stats. & Regs. ¶ 31,202 at P 18; *City Power Marketing, LLC, et al.*, 152 FERC ¶ 61,012 (2015); *Houlian Chen, et al.*, 151 FERC ¶ 61,179 (2015); *Maxim Power Corporation, et al.*, 151 FERC 61,094 (2015); *Barclays Bank PLC, et al.*, 144 FERC ¶ 61,041 (2013); *Richard Silkman*, 144 FERC ¶ 61,164 (2013); *Federal Energy Regulatory Commission v. Barclays Bank PLC*, No. 2:13-cv-2093-TLN-DAD, 2015 WL 2448686, at *20-21 (E.D. Cal. May 22, 2015) ("Thus, the Court does not conclude that "entity" as used in FPA § 222 prevents FERC from bringing claims against the individual Defendants.").

he will be affected by any penalty assessed against ETRACOM.²⁰³ Staff finds an individual penalty is appropriate. As an owner of ETRACOM, while Rosenberg might be impacted by a civil penalty, he also stood to benefit personally, according to his ownership interest, from any profits or distributions made as a result of ETRACOM's manipulation.²⁰⁴

V. Conclusion

ETRACOM and Rosenberg violated the Commission's Anti-Manipulation Rule and the Federal Power Act by placing uneconomic virtual transactions at the New Melones Intertie with the intent to benefit related CRR positions between May 14 and 31, 2011. Therefore, for the reasons discussed above, Enforcement staff recommends that the Commission issue an Order to Show Cause and Notice of Proposed Penalty to ETRACOM and Rosenberg requiring them to show cause why: (i) they did not violate the Anti-Manipulation Rule, 18 C.F.R. § 1c.2 (2015) and section 222 of the Federal Power; (ii) ETRACOM should not pay a civil penalty in the amount of \$2,400,000; (iii) Rosenberg should not pay a civil penalty in the amount of \$100,000 and (iv) ETRACOM should not disgorge \$315,072 plus interest in unjust profits.

²⁰³ ETRACOM Response to 1b.19 at 45.

²⁰⁴ Tr. 51:11-20 (Rosenberg).