

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)

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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

(continued...)

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.

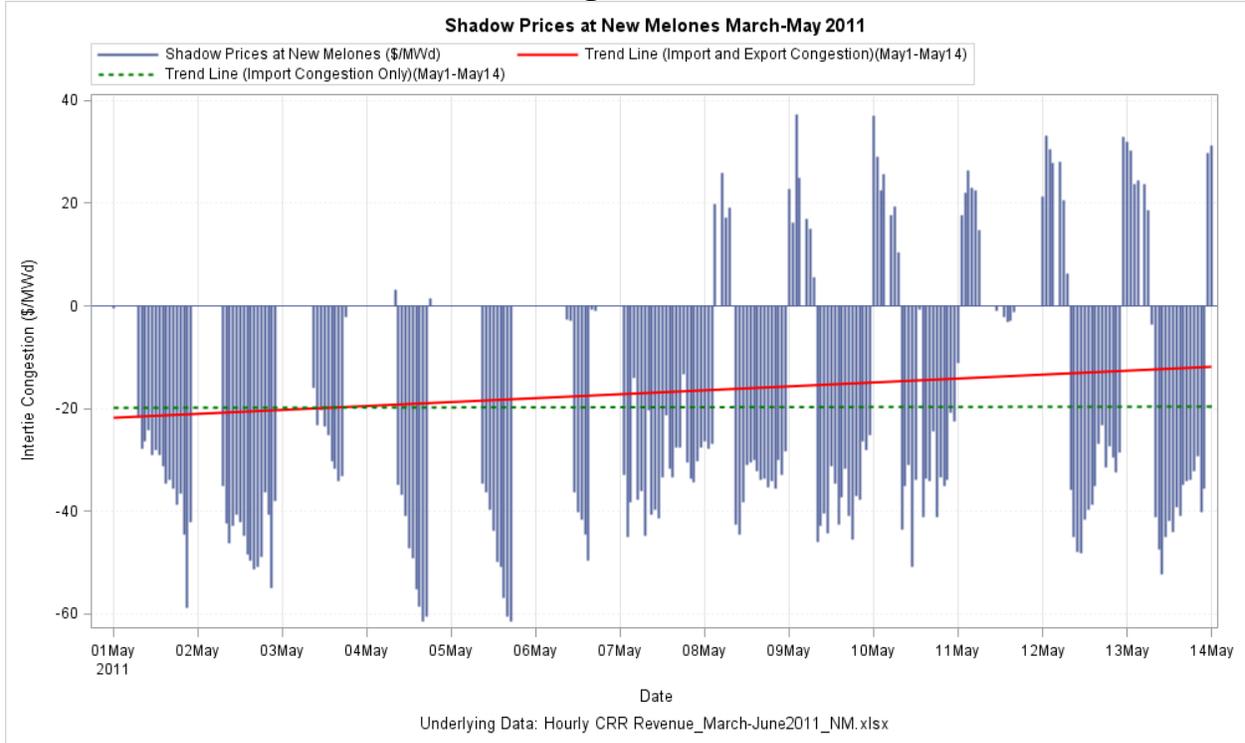
weather forecasts indicating frequent snow in the West (rather than melting) during May 2011;²⁴⁵ and (2) our finding that the market data in the record do not support Respondents' hydro theory as they claim. Respondents have asserted that ETRACOM observed consistent day-ahead congestion at New Melones, 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

(continued...)

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

