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United States General Accounting Office
Washington, DC 20548

June 6, 2003

Congressional Requesters:

Subject: *Electricity Markets: FERC's Role in Protecting Consumers*

The electricity industry is currently undergoing a restructuring, evolving from an industry characterized by monopoly utilities that provide consumers with electricity at regulated rates to a competitive industry in which prices are largely determined by supply and demand. The Federal Energy Regulatory Commission (FERC) has been engaged in this restructuring effort and is currently working, among other things, to foster competitive wholesale energy markets across the nation while protecting consumers against abuses of market power. At the retail level, about half the states have pursued restructuring their retail electricity markets in order to allow consumers such as residential, commercial, and industrial customers to choose their electricity suppliers. Proponents of electricity restructuring believe that it will ultimately provide consumers with lower electricity prices, more services, and technological innovation. However, opponents cite extremely high prices and market manipulation in California as evidence that, without more stringent oversight, restructuring may leave consumers vulnerable to higher prices, market manipulation, and less reliable service.

In light of ongoing electricity restructuring efforts, you asked us to describe FERC's role in protecting electricity consumers. This report does not evaluate FERC's success in serving this role, but does provide examples of how FERC has acted previously to protect consumers. GAO plans to issue a report in the summer 2003 on the progress FERC has made so far in preparing itself to monitor competitive energy markets. A complete list of the requesters appears at the end of this report.

Results in Brief

FERC's role in protecting electricity consumers is to ensure that prices in the wholesale electricity market are just and reasonable. Traditionally, FERC has ensured rates are just and reasonable in the wholesale market by regulating them based on a utility's costs of service plus a regulated return on the utility's investment. However, with the advent of greater competition in the electricity industry, FERC believes the best ways to ensure wholesale prices are just and reasonable today is by (1) fostering competitive regional wholesale markets that have balanced market rules (i.e., rules that encourage efficient behavior and infrastructure development and deter abusive behavior), (2) continuously monitoring these markets for anticompetitive behavior, and (3) enforcing or correcting market rules as needed. As part of these efforts, FERC oversees the interstate transmission system to ensure it remains open without discrimination to all buyers and sellers of electricity. This oversight also works to protect consumers by ensuring companies that generate electricity will be able to transmit their power without disruptions or inefficiencies.

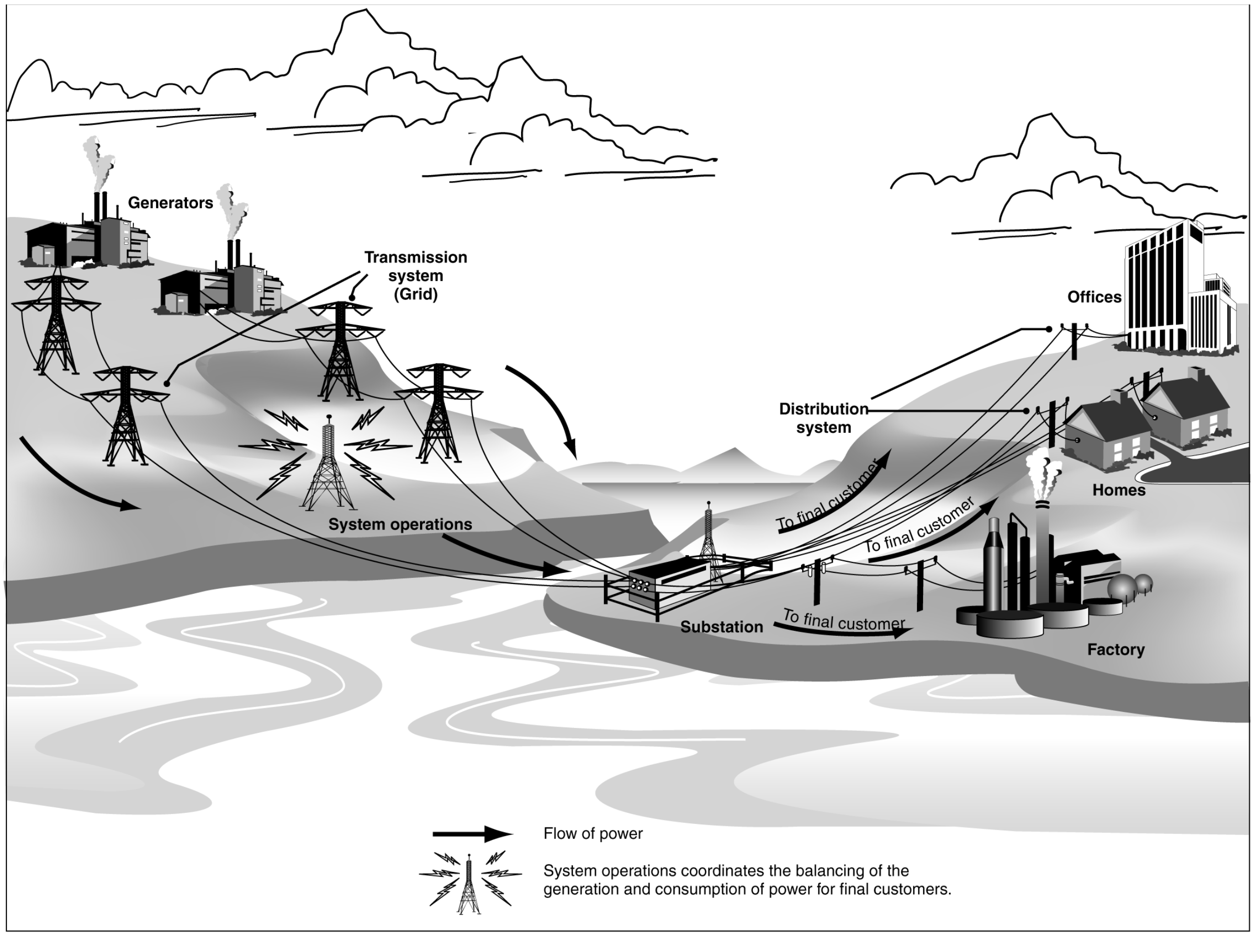
FERC has limits on where and how it can protect consumers. For example, FERC does not oversee wholesale electricity sales and transmission in areas where it generally lacks jurisdiction, such as the areas served by federally owned utilities including the Tennessee Valley Authority and the Department of Energy's four federal Power Marketing Administrations, publicly owned (municipal) utilities, and most cooperative utilities. In addition, states, rather than FERC, have authority over the retail electricity rates paid by customers, the local distribution of electricity, and the construction and siting of power plants and transmission lines within their boundaries.

Background

Established in 1977 as the successor to the Federal Power Commission (FPC), FERC is the principal federal agency that regulates the electricity industry. An independent agency, FERC obtains much of its legal authority over electricity from three sources: the Federal Power Act of 1935, which created the FPC and charged it with overseeing the rates, terms, and conditions of wholesale sales and transmission of electric energy in interstate commerce; the Public Utility Regulatory Policies Act of 1978, which opened the door for competition in the U.S. electricity supply market by allowing nonutility generators that met criteria set by FERC to enter the wholesale market; and the Energy Policy Act of 1992, which created a new class of electricity supplier—the exempt wholesale generator—and led to FERC Order No. 888, which opened up the national transmission system to wholesale suppliers. In fiscal year 2002, FERC had a budget of about $191 million and funding for about 1,200 full-time staff.

The electricity industry is based on four distinct functions: generation, transmission, distribution, and system operations. (See fig. 1.) Once electricity is generated, it is sent through high-voltage, high-capacity transmission lines to electricity distributors in local regions. Once there, electricity is transformed into a lower voltage and sent through local distribution wires for end-use by industrial plants, commercial businesses, and residential consumers.

Figure 1: Functions of the Electricity Industry



Source: GAO.

A unique feature of the electricity industry is that electricity is consumed at almost the very instant that it is produced. As electricity is produced, it leaves the generating plant and travels at the speed of light through transmission and distribution wires to the point of use, where it is immediately consumed. Because electric energy is generated and consumed almost instantaneously, the operation of an electric power system requires that a system operator balance the generation and consumption of power. The system operator monitors generation and consumption from a centralized location using computerized systems and sends minute-by-minute signals to generators reflecting changes in the demand for electricity. The generators then make the necessary changes in generation in order to maintain the transmission system safely and reliably. Absent such continuous balancing, electrical systems would be highly unreliable, with frequent and severe outages.

Since the early 1900s, electric utilities have been largely considered natural monopolies because they have high fixed costs (the costs of large-scale power plants, transmission lines, and distribution wires) and can lower their production costs as they increase the volume of electricity they generate. At that time, large, centralized power plants were seen as the most efficient and inexpensive way to produce and distribute electricity to retail customers. As a result, utilities obtained exclusive service territories in exchange for the regulation of their retail rates and terms of service by state public utility commissions. Wholesale electricity generated and transmitted for the interstate market came (and still resides) under FERC's jurisdiction.

Technological advances, such as the development of smaller, less costly generation units, and the passage of the Public Utility Regulatory Policies Act of 1978 created opportunities for companies other than utilities to generate and sell electricity in the wholesale market. The Energy Policy Act of 1992 gave FERC the authority, on a case-by-case basis, to require utilities to provide nonutility generators with access to the utility's interstate transmission lines. Subsequent FERC orders advanced this principle, requiring most utilities to provide nonutility generators access to their interstate transmission lines on a nondiscriminatory basis. Several states have restructured their intrastate market to allow retail customers to choose their electricity provider while retaining their utility's traditional distribution services. As we reported in December 2002, 24 states and the District of Columbia had enacted legislation or issued regulations opening their retail markets to competition.[1] Of those, 17 states and the District of Columbia were implementing programs that enable retail customers to choose their electricity supplier.

FERC's Role is to Protect Consumers through the Wholesale Markets

FERC's role with respect to protecting electricity customers is to ensure that prices in the wholesale electricity market are just and reasonable and to oversee the interstate transmission of electricity.[2] Traditionally, FERC approved its regulated rates for wholesale electricity based on a utility's cost to generate and transmit the power, plus a rate of return on investment. Opponents of cost-based rate regulation contend that it is less efficient than market pricing and results in, among other things, over investment in a utility. In light of the advances in technology, the introduction of nonutility power generators, and the nation's general shift in policy over the past three decades away from government regulation and toward markets, FERC now believes that the best way of achieving just and reasonable rates is to

- foster competitive regional wholesale markets that have balanced market rules (i.e., rules that encourage efficient behavior and infrastructure development and deter abusive behavior),
- continuously monitor these markets for anticompetitive behavior, and
- enforce or correct market rules as needed.

Under this approach, FERC's first goal is to advance the development of competitive wholesale markets by implementing clear and balanced market rules and regulations on sales and transmission. According to FERC, establishing balanced market rules up front encourages efficient behavior and infrastructure development and deters abusive behavior in the market. More specifically, following Order No. 888, FERC approved the creation of independent system operators for New England, the Mid-Atlantic states, New York, and California to operate

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[1] U. S. General Accounting Office, *Lessons Learned from Electricity Restructuring: Transition to Competitive Markets Underway, but Full Benefits Will Take Time and Effort to Achieve*, GAO-03-271 (Washington, D.C.: Dec. 17, 2002).

[2] Although FERC has authority to oversee the interstate transmission system, the North American Electric Reliability Council (NERC) makes sure the interconnections among transmission systems work reliably by developing and monitoring standards of operation.

wholesale energy markets and transmission systems within their regions. Then, in December 1999, FERC issued Order 2000, which encouraged all privately owned utilities to voluntarily place their transmission facilities under the control of a broader market entity called a regional transmission organization (RTO). RTOs are intended to bring the nation's transmission systems under regional control in order to increase access for all suppliers, improve management of system congestion and reliability, and achieve fully competitive wholesale power markets. Since issuing Order 2000, FERC has approved the creation of two RTOs—the Midwest Independent Transmission System Operator, Inc. (Midwest ISO) and the PJM Interconnection. Five others are in various stages of the approval process—GridFlorida, GridSouth, RTO West, WestConnect, and SeTrans[3]. Additionally, in July 2002, FERC issued a Notice of Proposed Rulemaking to establish a standard market design for all jurisdictional electric transmission providers. In FERC's view, the proposal will enable sellers to transact for electricity more easily across transmission boundaries, thus potentially bringing more sources of electricity to consumers and allowing them to receive the benefits of lower-cost and more reliable electricity supply. Since 1992, FERC has granted authority to more than 850 companies to charge market prices for their electricity, provided that the companies comply with market rules and charge wholesale prices that are just and reasonable.

Second, according to FERC, it will also monitor these markets and thereby protect consumers by proactively identifying market violations or mismanagement. In order to better monitor markets for anticompetitive behavior, in August 2002, FERC established the Office of Market Oversight and Investigations (OMOI). The role of this office is to scrutinize wholesale energy markets in order to identify issues before they develop into major problems and to monitor the market to ensure that participants play by the rules. In addition, to help monitor the markets, the Office of Market Oversight and Investigation manages FERC's Enforcement Hotline, which is designed to provide industry participants and the public a way to tell the commission their concerns or complaints about behavior in electricity markets. In 2002, the Hotline handled 584 calls.

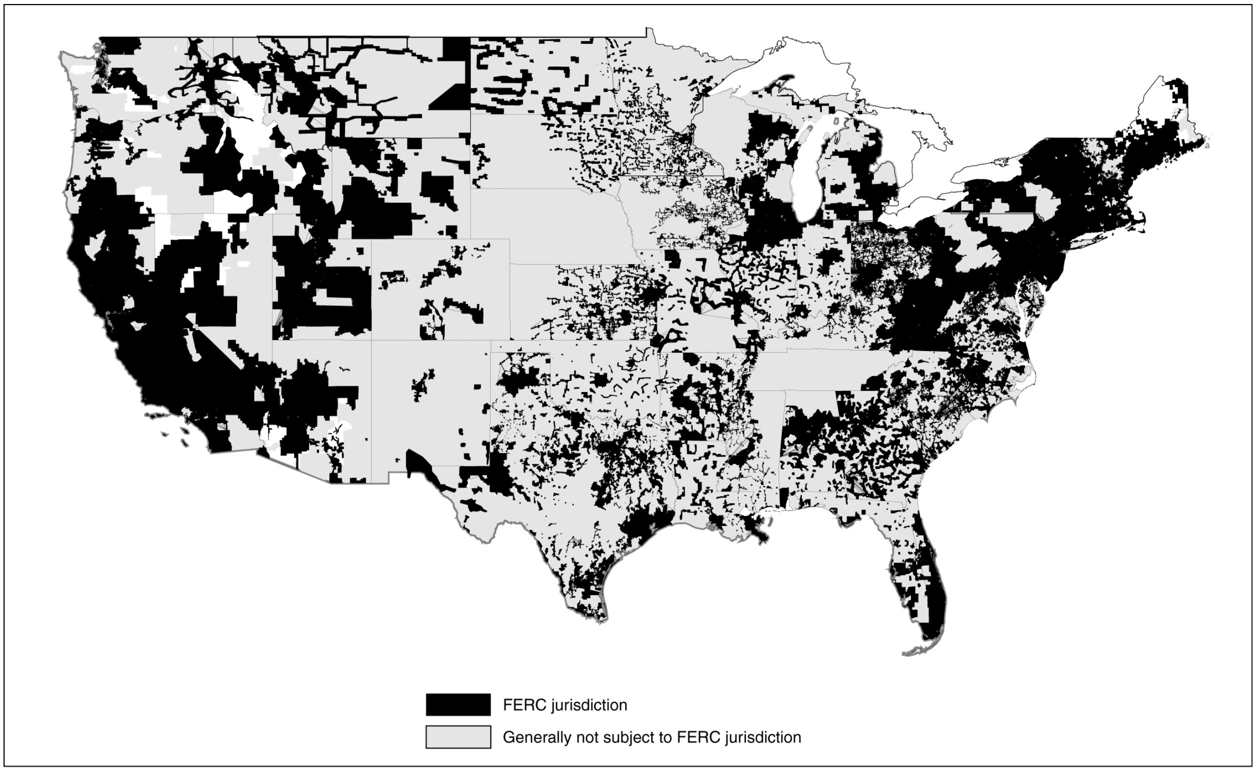
Finally, to enforce or correct market rules, FERC, through OMOI, is conducting investigations that are either self-initiated or result from Hotline complaints or other referrals by industry participants. According to FERC, as of May 1, 2003, OMOI's Divisions of Enforcement and Operational Investigations were conducting 38 investigations related to electricity matters such as generator practices, undue discrimination, or market manipulation. Between June 2002 and midApril 2003, the division resolved or terminated 18 investigations. Several of these investigations led to enforcement actions that either provided payment of refunds, civil penalties, or investigation costs or provided corrections to market rules to help ensure generation can adequately meet increased demand.

[3] As we reported in December 2002, Midwest ISO operates in Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Montana, North Dakota, Ohio, South Dakota, Virginia, Wisconsin, and Manitoba (Canada). PJM operates in Delaware, the District of Columbia, New Jersey, Maryland, Ohio, Pennsylvania, Virginia, and West Virginia. GridFlorida operates in Florida. GridSouth operates in North Carolina and South Carolina. According to FERC, RTO West operates in Washington state, Idaho, Montana, Oregon, Nevada, Wyoming, Utah, and a small part of northern California. WestConnect operates in Arizona, Colorado, New Mexico, and Utah. SeTrans operates in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

Portions of the Wholesale Market are Not Subject to FERC Jurisdiction

Some entities in the wholesale electricity market operate outside FERC's statutory jurisdiction. These entities include the Tennessee Valley Authority and the Department of Energy's four Power Marketing Administrations.[4] In addition, the Federal Power Act of 1935 excludes publicly owned utilities, such as municipal utilities, public power districts, and irrigation districts, as well as most cooperatively owned utilities from FERC's jurisdiction. Publicly owned utilities are usually nonprofit and are regulated by the government organization that owns them, while electric cooperatives are owned by and provide service primarily to their members. Most cooperatives do not sell electricity on the wholesale market or transmit electricity interstate.

Figure 2: Jurisdictional Territories of FERC and Power Entities Not Subject to FERC, 2002



Source: GAO analysis of PowerMap data provided by Platt's/RDI.

Notes: Areas served by entities generally not subject to FERC jurisdiction include areas served by publicly owned entities such as municipal utilities, cooperative utilities, and others.

Data on service territories include some overlaps, indicating that some areas are served by both entities subject to FERC jurisdiction and entities not generally subject to FERC jurisdiction, particularly some areas in Pennsylvania, Michigan, Wisconsin, and Iowa. Data reflected above depict those areas of overlap as not generally subject to FERC jurisdiction.

Portions of the map without shading indicate either that no electric service is provided or the service area is very small.

[4] The Power Marketing Administrations are Bonneville, Western Area, Southeastern, and Southwestern.

As shown in figure 2, power entities generally operating outside FERC's jurisdiction represent a significant share of the electricity market. Together, they currently provide service for about 25 percent of the nation's consumption of electricity and constitute an even larger portion of the electricity market in some areas. For example, in Nebraska, municipal utilities, cooperatives, and other suppliers not explicitly subject to FERC's jurisdiction provide almost all of the state's electricity. Many of the entities operating outside FERC's jurisdiction reside in the Southeast, Midwest, and West. In addition, municipal utilities, cooperatives, and federally-owned power entities own about 30 percent of the nation's transmission system. Lines owned by nonjurisdictional entities are prominent in the South and West.

States Regulate Retail Electricity Markets

Although FERC has regulatory authority over most of the interstate wholesale market in electricity, states have authority over the retail electricity and distribution markets and thus regulate the retail rates paid by residential, commercial, and many industrial customers.[5] In a majority of states, public utility commissions set consumers' retail rates based on a utility's cost of service plus a rate of return on investment. As we reported in December 2002, 24 states have enacted legislation or regulations to open their retail electricity markets to competition. Seventeen of those states and the District of Columbia have implemented programs enabling residential, commercial, and industrial customers to choose their electricity provider. However, of these 17 states, most have frozen their retail electricity prices at levels equal to or less than the retail cost-of-service rates that were in place at the outset of competition.

In addition to setting rates in the retail electricity market, states have the authority to approve the construction and siting of power plants and transmission lines. To be built, these facilities usually require the approval of the state's public utility commission as well as the consent of other state and local government agencies on environmental, zoning, and energy policy issues. Although transmission lines increasingly serve regional needs and can cross state boundaries, state and local governments make many of the decisions on whether and where to site new lines and thus potentially have significant impact on the transmission system's reliability and the amount of electricity it can deliver to consumers.

Agency Comments

We provided FERC with a draft of this report for its review and comment. In general, FERC's Chairman agreed with our report and its depiction of the commission's role in protecting electricity customers. The Chairman suggested technical and editorial changes that we included as appropriate.

[5] Wholesale energy trades within a state--for example, when a municipality purchases power from a generator in the same state--are regulated by the state's public utility commission. In addition, FERC has no jurisdiction over the wholesale market in Hawaii and Alaska because, being geographically separated from the contiguous U.S., these states have no interstate trade in electricity. Similarly, FERC has no jurisdiction over wholesale electricity trades in much of Texas because the state has few connections with the two major interstate grid systems in the United States, the Eastern and Western Interconnect.

Scope and Methodology

To obtain information on the ways in which FERC can protect consumers, we reviewed industry reports, academic literature, and discussed the issue with officials from FERC's Office of Markets, Tariffs, and Rates and Office of Market Oversight and Investigations. To obtain information on FERC's jurisdiction, we reviewed applicable statutes and federal rules. To identify areas of consumer protection and concerns, we reviewed industry publications and interviewed officials with consumer advocacy groups. In addition, we spoke to officials with the National Association of Regulatory Utility Commissioners and the Electricity Consumers Resource Council.

We performed our work between November 2002 and May 2003 in accordance with generally accepted government auditing standards.

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As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until seven days from the date of this letter. At that time, we will send copies to appropriate congressional committees as well as to the Chairman, FERC, and the Director, Office of Management and Budget. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3841. Key contributors to this report include Dan Haas, Daren Sweeney, Randy Jones, Carol Kolarik, Jon Ludwigson, Frank Rusco, Jonathan McMurray, and Barbara Timmerman.

Jim Wells

Jim Wells
Director, Natural Resources
and Environment

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The Honorable Robert E. Andrews
United States House of Representatives

The Honorable Brian Baird
United States House of Representatives

The Honorable Tammy Baldwin
United States House of Representatives

The Honorable Shelley Berkley
United States House of Representatives

The Honorable John Conyers, Jr.
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The Honorable Robert Wexler
United States House of Representatives

Enclosure I: Comments from the Federal Energy Regulatory Commission

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF THE CHAIRMAN

May 19, 2003

Mr. Jim Wells
Director, Natural Resources and Environment
United States General Accounting Office
Room 2T23
441 G Street, NW
Washington, DC 20548

Dear Mr. Wells:

Thank you for your letter of May 9, 2003, enclosing your draft report, *Electricity Restructuring: FERC's Role in Protecting Electricity Consumers*. I congratulate you on your effort and appreciate the opportunity to comment on this report.

I generally agree with the report and its description of the Commission's role in protecting electricity customers. One point I would like to emphasize is that the Commission is not only responsible for enforcing and correcting market rules, but for facilitating the development of balanced rules up front. Balanced rules encourage efficient behavior and infrastructure development and deter abusive behavior. I characterize our mission as including three equally important components: balanced rules, sufficient infrastructure, and vigilant enforcement.

In addition, I would like to suggest a few changes to your report to elaborate on how the Commission protects electricity customers. First, I suggest adding the following sentence on page 4 after the first sentence in the last paragraph:

> Following Order No. 888, FERC approved the creation of independent system operators (ISOs) for New England, the Mid-Atlantic states, New York and California to operate wholesale energy markets and transmission systems within their regions.

In the second paragraph on page 5, I suggest changing the date the Office of Market Oversight and Investigations was established to August 2002. In addition, in the same paragraph, I suggest revising the description of the Enforcement Hotline as follows:

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In addition, to help monitor the markets, the Office of Market Oversight and Investigations manages FERC's Enforcement Hotline, which is designed to provide industry participants and the public a way to tell the Commission their concerns or complaints about behavior in electricity markets.

I appreciate the work your staff put into this report and am hopeful it will further understanding of the Commission's role in protecting electricity customers. Thank you again for the opportunity to comment on your report.

Best regards,

Pat Wood, III
Chairman

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