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UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 35

(Docket No. RM99-2-000)

Regional Transmission Organizations

NOTICE OF PROPOSED RULEMAKING

(May 13, 1999)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The Federal Energy Regulatory Commission (Commission) is proposing to amend its regulations under the Federal Power Act (FPA) to facilitate the formation of Regional Transmission Organizations (RTOs). The Commission proposes to require that each public utility that owns, operates, or controls facilities for the transmission of electric energy in interstate commerce make certain filings with respect to forming and participating in an RTO. The Commission also proposes minimum characteristics and functions that a transmission entity must satisfy in order to be considered to be an RTO.

DATES: Initial comments are due August 16, 1999. Reply comments are due September 15, 1999.

ADDRESSES: Send comments to:

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UNITED STATES OF AMERICA  
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I. INTRODUCTION AND SUMMARY

In 1996 the Commission put in place the foundation necessary for competitive wholesale power markets in this country -- open access transmission. 1/ Since that time, the industry has undergone sweeping restructuring activity, including a movement by many states to develop retail competition, the growing

divestiture of generation plants by traditional electric utilities, a significant increase in the number of mergers among traditional electric utilities and among electric utilities and gas pipeline companies, large increases in the number of power marketers and independent generation facility developers entering the marketplace, and the establishment of independent system operators (ISOs) as managers of large parts of the transmission system. Trade in bulk power markets has continued to increase significantly and the Nation's transmission grid is being used more heavily and in new ways.

As a result, the traditional means of grid management is showing signs of strain and may be inadequate to support the efficient and reliable operation that is needed for the continued

- 1/ See Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540 (1996), FERC Stats. & Regs. - 31,036 (1996) (Order No. 888), order on reh'g, Order No. 888-A, 62 Fed. Reg. 12,274 (1997), FERC Stats. & Regs. - 31,048 (1997), order on reh'g, Order No. 888-B, 62 Fed. Reg. 64,688, 81 FERC - 61,248 (1997), order on reh'g, Order No. 888-C, 82 FERC - 61,046 (1998), appeal docketed, Transmission Access Policy Study Group, et al. v. FERC, Nos. 97-1715 et al. (D.C. Cir.).

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development of competitive electricity markets. In addition, there are indications that continued discrimination in the provision of transmission services by vertically integrated utilities may also be impeding fully competitive electricity markets. These problems may be depriving the Nation of the benefits of lower prices, more reliance on market solutions, and lighter-handed regulation that competitive markets can bring.

If electricity consumers are to realize the full benefits that competition can bring to wholesale markets, the Commission

must address the extent of these problems and appropriate ways of mitigating them. Competition in wholesale electricity markets is the best way to protect the public interest and ensure that electricity consumers pay the lowest price possible for reliable service. We believe that further steps may need to be taken to address grid management if we are to achieve fully competitive power markets. We further believe that regional approaches to the numerous issues affecting the industry may be the best means to eliminate remaining impediments to properly functioning competitive markets.

Our objective is for all transmission owning entities in the Nation, including non-public utility entities, to place their transmission facilities under the control of appropriate regional transmission institutions in a timely manner. We seek to accomplish our objective by encouraging voluntary participation. We are therefore proposing in this rulemaking minimum characteristics and functions for appropriate regional

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transmission institutions; a collaborative process by which public utilities and non-public utilities that own, operate or control interstate transmission facilities, in consultation with the state officials as appropriate, will consider and develop regional transmission institutions; a willingness to consider incentive pricing on a case-specific basis and an offer of non-monetary regulatory benefits, such as deference in dispute resolution, reduced or eliminated codes of conduct, and streamlined filing and approval procedures; and a time line for public utilities to make appropriate filings with the Commission and initiate operation of regional transmission institutions. As a result, we expect jurisdictional utilities to form Regional

Transmission Organizations (RTOs).

As discussed in detail herein, regional institutions can address the operational and reliability issues now confronting the industry, and any residual discrimination in transmission services that can occur when the operation of the transmission system remains in the control of a vertically integrated utility. Appropriate regional transmission institutions could: (1) improve efficiencies in transmission grid management 2/; (2) improve grid reliability; (3) remove the remaining opportunities for

- 2/ Appropriate regional institutions could improve efficiencies in grid management through improved pricing, congestion management, more accurate estimates of Available Transmission Capability, improved parallel path flow management, more efficient planning, and increased coordination between regulatory agencies.

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discriminatory transmission practices; (4) improve market performance; and (5) facilitate lighter handed regulation.

Thus, we believe that appropriate regional transmission institutions could successfully address the existing impediments to efficient grid operation and competition and could consequently benefit consumers through lower electricity rates resulting from a wider choice of services and service providers. There are likely to be substantial cost savings brought about by regional transmission institutions.

In light of important questions regarding the complexity of grid regionalization raised by state regulators and applicants in individual cases, we are proposing a flexible approach. We are not proposing to mandate that utilities participate in a regional transmission institution by a date certain. Instead, we act now

to ensure that they consider doing so in good faith. Moreover, the Commission is not proposing a "cookie cutter" organizational format for regional transmission institutions or the establishment of fixed or specific regional boundaries under section 202(a) of the FPA.

Rather, the Commission is proposing to establish fundamental characteristics and functions for appropriate regional transmission institutions. We will designate institutions that satisfy all of the minimum characteristics and functions as Regional Transmission Organizations (RTOs). Hereinafter, the term Regional Transmission Organization, or RTO,

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will refer to an organization that satisfies all of the minimum characteristics and functions.

Pursuant to our authority under section 205 of the FPA to ensure that rates, terms and conditions of transmission and sales for resale in interstate commerce by public utilities are just, reasonable and not unduly discriminatory or preferential, and our authority under section 202(a) of the FPA to promote and encourage regional districts for the voluntary interconnection and coordination of transmission facilities by public utilities and non-public utilities for the purpose of assuring an abundant supply of electric energy throughout the U.S. with the greatest possible economy, we propose the following. 3/

First, the Commission proposes minimum characteristics and functions that an RTO must satisfy. Industry participants, however, retain flexibility in structuring RTOs that satisfy these characteristics and functions. For example, we do not propose to require or prohibit any one form of organization for

RTOs or require or prohibit RTO ownership of transmission facilities. The characteristics and functions could be satisfied by different organizational forms, such as ISOs, transcos, combinations of the two, or even new organizational forms not yet discussed in the industry or proposed to the Commission.

Second, we propose to adopt an "open architecture" policy regarding RTOs, whereby all RTO proposals must allow the RTO and its members the flexibility to improve their organizations in the

3/ The Commission's legal authority is discussed in Section II.

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future in terms of structure, operations, market support and geographic scope to meet market needs. In turn, the Commission will provide the regulatory flexibility to accommodate such improvement.

Third, we propose guidance on flexible transmission ratemaking that may be proposed by RTOs, including ratemaking treatments that will address congestion pricing and performance based regulation. We also propose to consider on a case-by-case basis incentive pricing that may be appropriate for transmission facilities under RTO control.

Finally, all public utilities (with the exception of those participating in an approved regional transmission entity that conforms to the Commission's ISO principles) that own, operate or control interstate transmission facilities must file with the Commission by October 15, 2000 a proposal for an RTO with the minimum characteristics and functions adopted in the Final Rule, 4/ or, alternatively, a description of efforts to participate in an RTO, any existing obstacles to RTO participation, and any

4/ An RTO proposal includes a basic agreement filed under

section 205 of the FPA setting out the rules, practices and procedures under which an RTO will be governed and operated, and requests by the public utility members of the RTO under section 203 of the FPA to transfer control of their jurisdictional transmission facilities from individual public utilities to the RTO. Most RTO proposals by public utilities are likely to involve one or more filings under FPA sections 203, 205, or 206, but the number and types of filing may vary depending upon the type of RTO proposed, and the number of public utilities involved in the proposal. Under the proposed rule, a utility may file a petition for a declaratory order asking whether a proposed transmission entity would qualify as an RTO, to be followed by appropriate filings under sections 203, 205 and/or 206.

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plans to work toward RTO participation. Each proposed RTO must plan to be operational by December 15, 2001. We expect that such proposals would include the transmission facilities of public utilities as well as transmission facilities of public power and other non-public utility entities to the extent possible.

A public utility that is a member of an existing transmission entity that has been approved by the Commission as in conformance with the eleven ISO principles set forth in Order No. 888 must make a filing no later than January 15, 2001 that explains the extent to which the transmission entity in which it participates meets the minimum characteristics and functions for an RTO, or proposes to modify the existing institution to become an RTO. Alternatively, the public utility must file an explanation of efforts, obstacles and plans with respect to conforming to these characteristics and functions.

Through the required filings, utilities will make known to the public any plans for RTO participation so that other utilities and the competitive market can respond accordingly. This proposal relies primarily on the enlightened self-interest of stakeholders in each region. Such public disclosure of plans for transmission facilities will benefit the industry, the

financial community, and public policy makers as the electric industry restructuring continues.

To facilitate RTO formation in all regions of the Nation, the Commission proposes to sponsor and support a collaborative process under section 202(a) to take place in the spring of 2000.

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Under this process, we expect that public utilities and non-public utilities, in coordination with state officials, Commission staff, and all affected interest groups, will actively work toward the voluntary development of specific RTOs.

Prior to undertaking this proposed rulemaking, we held eight technical conferences in 1998 with all industry stakeholders as well as three technical conferences this year with state regulatory commissions to obtain their views on the need for, and benefits of, regional organizations. We gained valuable insight from the participants, including many state commissions that have undertaken or are considering state retail choice programs for the consumers in their states. In light of the comments received, we wish to respond to several concerns that were raised.

First, we are not proposing to mandate RTOs, nor are we proposing detailed specifications on a particular organizational form for RTOs. The goal of this rulemaking is to get RTOs in place through voluntary participation. While this Commission has specific authorities and responsibilities under the FPA to protect against undue discrimination and remove impediments to wholesale competition, we believe it is preferable to meet these responsibilities in the first instance through an open and collaborative process that allows for regional flexibility and induces voluntary behavior.

Second, the development of RTOs is not intended to interfere with state prerogatives in setting retail competition policy.

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The Commission believes that RTOs can successfully accommodate the transmission systems of all states, whether or not a particular state has adopted retail competition. However, for those states that have chosen to adopt retail wheeling, RTOs can play a critical role in the realization of full competition at the retail level as well as at the wholesale level. In addition, the Commission believes that RTOs will not interfere with a state's prerogative to keep the benefits of low-cost power for the state's own retail consumers.

Third, we propose to allow RTOs to prevent transmission cost shifting by continuing our policy of flexibility with respect to recovery of sunk transmission costs, such as the "license plate" approach.

Fourth, the existence of RTOs has not, and will not in the future, interfere with traditional state and local regulatory responsibilities such as transmission siting, local reliability matters, and regulation of retail sales of generation and local distribution. In fact, RTOs offer the potential to assist the states in their regulation of retail markets and in resolving matters among states on a regional basis. They also provide a vehicle for amicably resolving state and Federal jurisdictional issues.

Finally, we do not propose to establish regional boundaries in this rulemaking. Our foremost concern is that a proposed RTO's regional configuration is sufficient to ensure that the required RTO characteristics and functions are satisfied. To

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this end, the Commission proposes guidance regarding the scope and regional configuration of RTOs.

We now turn to the state of the electric utility industry in the wake of Order No. 888 and how the development of RTOs achieves efficient, reliable and competitive power markets.

## II. BACKGROUND

In April 1996, in Order Nos. 888 and 889, the Commission established the foundation necessary to develop competitive bulk power markets in the United States: non-discriminatory open access transmission services by public utilities and stranded cost recovery rules that would provide a fair transition to competitive markets. Order Nos. 888 and 889 were very successful in accomplishing much of what they set out to do. However, they were not intended to address all problems that might arise in the development of competitive power markets. Indeed, the nature of the emerging markets and the remaining impediments to full competition have become apparent in the three years since the issuance of our orders.

### A. The Foundation for Competitive Markets: Order Nos. 888 and 889

In Order Nos. 888 and 889, the Commission found that unduly discriminatory and anticompetitive practices existed in the electric industry, and that transmission-owning utilities had discriminated against others seeking transmission access. 5/ The Commission stated that its goal was to ensure that customers have

5/ Order No. 888, FERC Stats & Regs. at 31,682.

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the benefits of competitively priced generation, and determined that non-discriminatory open access transmission services (including access to transmission information) and stranded cost recovery were the most critical components of a successful transition to competitive wholesale electricity markets. 6/

Accordingly, Order No. 888 required all public utilities that own, control or operate facilities used for transmitting electric energy in interstate commerce to (1) file open access non-discriminatory transmission tariffs containing, at a minimum, the non-price terms and conditions set forth in the Order, and (2) functionally unbundle wholesale power services. Under functional unbundling, the public utility must: (a) take transmission services under the same tariff of general applicability as do others; (b) state separate rates for wholesale generation, transmission, and ancillary services; and (c) rely on the same electronic information network that its transmission customers rely on to obtain information about its transmission system when buying or selling power. 7/ Order No. 889 required that all public utilities establish or participate in an Open Access Same-Time Information System (OASIS) that meets certain specifications, and comply with standards of conduct designed to prevent employees of a public utility (or any employees of its affiliates) engaged in wholesale power marketing

6/ Id. at 31,652.

7/ Id. at 31,654-55.

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functions from obtaining preferential access to pertinent transmission system information.

During the course of the Order No. 888 proceeding, the Commission received comments urging it to require generation divestiture or structural institutional arrangements such as regional independent system operators (ISOs) to better assure non-discrimination. The Commission responded that, while it believed that ISOs had the potential to provide significant benefits, efforts to remedy undue discrimination should begin by requiring the less intrusive functional unbundling approach. Order No. 888 set forth eleven principles for assessing ISO proposals submitted to the Commission. 8/ Order No. 888 also stated:

[W]e see many benefits in ISOs, and encourage utilities to consider ISOs as a tool to meet the demands of the competitive marketplace.

As a further precaution against discriminatory behavior, we will continue to monitor electricity markets to ensure that functional unbundling adequately protects transmission customers. At the same time, we will analyze all alternative proposals, including formation of ISOs, and, if it becomes apparent that functional unbundling is inadequate or unworkable in assuring non-discriminatory open access transmission, we will reevaluate our position and decide whether other mechanisms, such as ISOs, should be required. [9/]

In section III.A.2 of this Notice of Proposed Rulemaking, we discuss our experiences to date with functional unbundling. It has become apparent that several types of regional transmission

8/ Id. at 31,730.

9/ Id. at 31,655.

institutions, in addition to the kinds of ISOs approved to date, may also be able to provide the benefits attributed to ISOs in

Order No. 888.

B. Developments Since Order Nos. 888 and 889

In the three years since Order Nos. 888 and 889 were issued, numerous significant developments have occurred in the electric utility industry. Some of these reflect changes in governmental policies; others are strictly industry driven. These activities have resulted in a considerably different industry landscape from the one faced at the time the Commission was developing Order No. 888, resulting in new regulatory and industry challenges.

Order Nos. 888 and 889 required a significant change in the way many public utilities have done business for most of this century, and most public utilities accepted these changes and made substantial good faith efforts to comply with the new requirements. Virtually all public utilities have filed tariffs stating rates, terms and conditions for third-party use of their transmission systems. In addition, improved information about the transmission system is available to all participants in the market at the same time that it is available to the public utility as a result of utility compliance with the OASIS regulations.

The availability of tariffs and information about the transmission system has fostered a rapid growth in dependence on wholesale markets for acquisition of generation resources. Areas that have experienced generation shortages have seen rapid

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development of new generation resources. For example, New England, where there was deep concern about adequacy of generation supply only three years ago, now has approximately 30,000 MW of generation proposed. That response comes almost entirely from independent generating plants that are able to sell

power into the bulk power market through open access to the transmission system. Power resources are now acquired over increasingly large regional areas, and interregional transfers of electricity have increased.

The very success of Order Nos. 888 and 889, and the initiative of some utilities that have pursued voluntary restructuring beyond the minimum open access requirements , have put new stresses on regional transmission systems -- stresses that call for regional solutions.

1. Industry Restructuring and New Stresses on the Transmission Grid

Open access transmission and the opening of wholesale competition in the electric industry have brought an array of changes in the past several years: divestiture by many integrated utilities of some or all of their generating assets; significantly increased merger activity both between electric utilities and between electric and natural gas utilities; increases in the number of new participants in the industry in the form of independent power marketers and generators; increases in the volume of trade in the industry, particularly as marketers make multiple sales; state efforts to create retail competition; and new and different uses of the transmission grid.

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With respect to divestiture, since August 1997, approximately 50,000 MW of generating capacity have been sold (or are under contract to be sold) by utilities, and an additional 30,000 MW is currently for sale. In total, this represents more than 10 percent of U.S. generating capacity. In all, according to publicly available data, 27 utilities have sold all or some of their generating assets and 7 others have assets for sale.

Buyers of this generating capacity have included traditional utilities with specified service territories as well as independent power producers with no required service territory.

Since Order No. 888 was issued, there have been more than 20 applications filed with us to approve proposed mergers involving public utilities. Most of these mergers have been approved by various regulatory authorities, including the Commission, although a few have been rejected or withdrawn, and several mergers are pending regulatory approval. Most of these merger proposals have been between electric utilities with contiguous service areas, while some of the proposed mergers have been between utilities with non-contiguous service areas. The Commission has also been presented with merger applications involving the combination of electric and natural gas assets.

There has been significant growth in the volume of trading in the wholesale electricity market. In the first quarter of 1995, according to power marketer quarterly filings, marketer sales totaled 1.8 million MWh, but by the second quarter of 1998,

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such sales escalated to 513 million MWh. 10/ Many new competitors have entered the industry. For example, in the first quarter of 1995, there were eight power marketers (either independent or affiliated with traditional utilities) actively trading in wholesale power markets, but by the second quarter of 1998, there were 108 actively trading power marketers. The Commission has granted market-based rate authority to well over 500 wholesale power marketers, of which some are independent of traditional investor-owned utilities, some are affiliated with traditional utilities, and some are traditional utilities

themselves. 11/

State commissions and legislatures have been active in the past few years studying competitive options at the retail level, setting up pilot retail access programs, and, in some states, implementing full scale retail access programs. As of May 1, 1999, 18 states have enacted electric restructuring legislation, 3 have issued comprehensive regulatory orders, and 28 others have legislation or orders pending or investigations underway. 12/ Fifteen states have implemented full-scale or pilot retail

10/ Power marketer quarterly filings, cited in Staff Report to the Federal Energy Regulatory Commission on the Causes of Wholesale Electric Pricing Abnormalities in the Midwest During June 1998, (September 22, 1998) (Staff Price Spike Report) at 3-1 to 3-2. It must be noted that a significant portion of the sales represent the retrading of power by a number of different market participants. In other words, there may be multiple resales of the same generation.

11/ Id. at 3-1.

12/ "Status of Electric Utility Deregulation Activity as of May 1, 1999," Energy Information Administration.

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competition programs that offer a choice of suppliers to at least some retail customers. Eight states have set in motion programs to offer access to retail customers by a date certain.

Because of the changes in the structure of the electric industry, the transmission grid is now being used more intensively and in different ways than in the past. The Commission is concerned that the traditional approaches to operating the grid are showing signs of strain. According to the North American Electric Reliability Council (NERC), "the adequacy of the bulk transmission system has been challenged to support the movement of power in unprecedented amounts and in unexpected directions." 13/ These changes in the use of the transmission

system "will test the electric industry's ability to maintain system security in operating the transmission system under conditions for which it was not planned or designed." 14/ It should be noted that, despite the increased transmission system loadings, NERC believes that the "procedures and processes to mitigate potential reliability impacts appear to be working reliably for now," and that even though the system was particularly stressed during the summer of 1998, "the system performed reliably and firm demand was not interrupted due to transmission transfer limitations." 15/

13/ Reliability Assessment 1998-2007, North American Electric Reliability Council (September 1998), at 26.

14/ Id.

15/ Id.

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An indication that the increased and different use of the transmission system is stressing the grid is the increased use of transmission line loading relief (TLR) procedures. 16/ NERC's TLR procedures were invoked 250 times between January 1 and September 1, 1998 to prevent facility or interface overloads on the Eastern Interconnection. 17/

It appears that the planning and construction of transmission and transmission-related facilities may not be keeping up with increased requirements. According to NERC, "Business is increasing on the transmission system, but very little is being done to increase the load serving and transfer capability of the bulk transmission system." 18/ The amount of new transmission capacity planned over the next ten years is significantly lower than the additions that had been planned five

years ago, and most of the planned projects are for local system support. 19/ NERC states that, "The close coordination of generation and transmission planning is diminishing as vertically integrated utilities divest their generation assets and most new

16/ The TLR procedures are designed to remedy overloads that result when a transmission line or other transmission equipment carries or will carry more power than its rating, which could result in either power outages or damage to property. The TLR procedures are designed to bring overloaded transmission equipment to within NERC's Operating Security Limits essentially by curtailing transactions contributing to the overload. See North American Electric Reliability Council, 85 FERC - 61,353 (1998) (NERC).

17/ Reliability Assessment 1998-2007 at 27.

18/ Id. at 26.

19/ Id. at 7.

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generation is being proposed and developed by independent power producers." 20/

The transition to new market structures has resulted in new challenges and circumstances. For example, during the week of June 22-26, 1998, the wholesale electric market in the Midwest experienced numerous events that led to unprecedented high spot market prices. Spot wholesale market prices for energy briefly rose as high as \$7,500 per MWh, compared to an average price for the summer of approximately \$40 per MWh in the Midwest if the price spikes are excluded. 21/ This experience led to calls for price caps, allegations of market power, and a questioning of the effectiveness of transmission open access and wholesale electric competition.

The Commission staff undertook an investigation of the price spike incident. Staff's report concluded that the unusually high price levels were caused by a combination of factors,

particularly above-average generation outages, unseasonably hot temperatures, storm-related transmission outages, transmission constraints, poor communication of price signals, lowered confidence in the market due to a few contract defaults, and inexperience in dealing with competitive markets. 22/

The Commission's staff found that the market institutions were not adequately prepared to deal with such a dramatic series

20/ Id.

21/ Staff Price Spike Report at 3-8 to 3-11.

22/ Id. at v.

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of events. Regarding regional transmission entities, the staff report observed: "The necessity for cooperation in meeting reliability concerns and the Commission's intent to foster competitive market conditions underscores the importance of better regional coordination in areas such as maintenance of transmission and generation systems and transmission planning and operation." 23/ Support for this view comes from many sources. For example, the Public Utilities Commission of Ohio, in its own report on the price spikes, recommended that policy makers "take unambiguous action to require coordination of transmission system operations by regionwide Independent System Operators." 24/

On September 29, 1998, the Secretary of Energy Advisory Board Task Force on Electric System Reliability published its final report. 25/ The Task Force was convened in January 1997 to provide advice to the Department of Energy on critical institutional, technical, and policy issues that need to be addressed in order to maintain bulk power electric system reliability in a more competitive industry. The Task Force found

that "the traditional reliability institutions and processes that

23/ Id. at 5-8.

24/ Ohio's Electric Market, June 22-26, 1998, What Happened and Why, A Report to the Ohio General Assembly, at iii.

25/ Maintaining Reliability in a Competitive U.S. Electricity Industry; Final Report of the Task Force on Electric System Reliability (Sept. 29, 1998)(Task Force Report). The Task Force was comprised of 24 members representing all major segments of the electric industry, including private and public suppliers, power marketers, regulators, environmentalists, and academics.

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have served the Nation well in the past need to be modified to ensure that reliability is maintained in a competitively neutral fashion;" that "grid reliability depends heavily on system operators who monitor and control the grid in real time;" and that "because bulk power systems are regional in nature, they can and should be operated more reliably and efficiently when coordinated over large geographic areas." 26/

The report noted that many regions of the United States are developing ISOs as a way to maintain electric system reliability as competitive markets develop. According to the Task Force, ISOs are significant institutions to assure both electric system reliability and competitive generation markets. The Task Force concluded that a large ISO would: (1) be able to identify and address reliability issues most effectively; (2) internalize much of the loop flow caused by the growing number of transactions; (3) facilitate transmission access across a larger portion of the network, consequently improving market efficiencies and promoting greater competition; and (4) eliminate "pancaking" of transmission rates, thus allowing a greater range of economic energy trades across the network. 27/

2. Successes, Failures, and Haphazard Development of Regional Transmission Entities

Since Order No. 888 was issued, there have been both successful and unsuccessful efforts to establish ISOs, and other

26/ Task Force Report at x-xi.

27/ Id. at 76.

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efforts to form regional entities to operate the transmission facilities in various parts of the country. While we are encouraged by the success of some of these efforts, it is apparent that the results have been inconsistent, and much of the country's transmission facilities remain outside of an operational regional transmission institution.

Proposals for the establishment of five ISOs have been submitted to and approved, or conditionally approved, by the Commission. These are the California ISO, 28/ the PJM ISO, 29/ ISO New England ISO, 30/ the New York ISO, 31/ and the Midwest ISO. 32/ In addition, the Texas Commission has ordered an ISO for the Electric Reliability Council of Texas (ERCOT). 33/ Moreover, our international neighbors in Canada and Mexico are

28/ Pacific Gas & Electric Company, et al., 77 FERC - 61,204 (1996), order on reh'g, 81 FERC - 61,122 (1997) (Pacific Gas & Electric).

29/ Pennsylvania-New Jersey-Maryland Interconnection, et al., 81 FERC - 61,257 (1997), reh'g pending (PJM).

30/ New England Power Pool, 79 FERC - 61,374 (1997), order on reh'g, 85 FERC - 61,242 (1998) (order conditionally authorizing ISO New England); New England Power Pool, 83 FERC - 61,045 (1998), reh'g pending (order on NEPOOL tariff and restructuring)(NEPOOL).

31/ Central Hudson Gas & Electric Corporation, et al., 83 FERC -

61,352 (1998), order on reh'g, 87 FERC - 61,135 (1999)  
(Central Hudson).

32/ Midwest Independent Transmission System Operator, et al., 84  
FERC - 61,231, order on reconsideration, 85 FERC - 61,250,  
order on reh'g, 85 FERC - 61,372 (1998) (Midwest ISO).

33/ See 16 Texas Administrative Code 23.67(p).

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also pursuing electric restructuring efforts that include various  
forms of regional transmission entities. 34/

The PJM, New England and New York ISOs were established on  
the platform of existing tight power pools. It appears that the  
principal motivation for creating ISOs in these situations was  
the Order No. 888 requirement that there be a single system wide  
transmission tariff for tight pools. In contrast, the  
establishment of the California ISO and the ERCOT ISO was the  
direct result of mandates by state governments. The Midwest ISO,  
which is not yet operational, is unique. It began through a  
consensual process and was not driven by a pre-existing  
institution. Two states in the region subsequently required  
utilities in their states to participate in either a Commission-  
approved ISO (Illinois and Wisconsin), or sell their transmission  
assets to an independent transmission company (Wisconsin).

The approved ISOs have similarities as well as differences.  
All five Commission-approved ISOs operate, or propose to operate,  
as non-profit organizations. All five ISOs include both public  
and non-public utility members. However, among the five, there  
is considerable variation in governance, operational  
responsibilities, geographic scope and market operations. Four  
of the ISOs rely on a two-tier form of governance with a non-

34/ See Policy Proposal for Structural Reform of the Mexican  
Electricity Industry, Secretary of Energy, Mexico (February  
1999); Third Interim Report of the Ontario Market Design

Committee (October 1998); TransAlta Enterprises Corporation, 75 FERC - 61,268 at 61,875 (1996) (recognition of the restructuring in the Province of Alberta, Canada to create a Grid Company of Alberta).

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stakeholder governing board on top that is advised, either formally or informally, by one or more stakeholder groups. In general, the final decision making authority rests with the independent non-stakeholder board. One ISO, the California ISO, uses a board consisting of stakeholders and non-stakeholders.

Four of the five ISOs operate traditional control areas, but the Midwest ISO does not currently plan to operate a traditional control area. Three are multi-state ISOs (New England, PJM and Midwest), while two ISOs (California and New York) currently operate within a single state. The current Midwest ISO members do not encompass one contiguous geographic area and there are holes in its coverage. The ISO New England administers a separate NEPOOL tariff, while the other four administer their own ISO transmission tariffs.

Three ISOs operate or propose to operate centralized power markets (New England, PJM and New York), and one ISO (California) relies on a separate power exchange (PX) to operate such a market. 35/ The Midwest ISO did not originally envision an ISO-

35/ The California PX offers day-ahead and hour-ahead markets and the ISO operates a real-time energy market. Participation in the PX market is voluntary except that the three traditional investor-owned utilities in California must bid their generation sales and purchases through the PX for the first five years. New York will offer day-ahead and real-time energy markets that will be operated by the ISO. PJM and New England offer only real-time energy markets, although PJM has proposed to operate a day-ahead market. The ERCOT ISO is the only other ISO that does not currently operate a PX.

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related centralized market for its region. 36/ In addition, at least one separate PX has begun to do business in California apart from the PX established through the restructuring legislation. 37/

Not all efforts to create ISOs have been successful. For example, after more than two years of effort, the proponents of the IndeGO ISO in the Pacific Northwest and Rocky Mountain regions ended their efforts to create an ISO. More recently, members of MAPP, an existing power pool that covers six U.S. states and two Canadian provinces, failed to achieve consensus for establishing a long-planned ISO. In the Southwest, proponents of the Desert Star ISO have not been able to reach agreement on a formal proposal after more than two years of discussion.

Various reasons have been advanced to explain why it is difficult to form a voluntary, multi-state ISO. These include cost shifting in transmission capital costs; disagreements about sharing of ISO transmission revenues among transmission owners; difficulties in obtaining the participation of publicly-owned transmission facilities; concerns about the loss of transmission

36/ There are indications, however, that the Midwest ISO is considering the formation of a power exchange. See Joint Committee for the Development of a Midwest Independent Power Exchange, "Solicitation of Interest-Creation of an Independent Power Exchange for the U.S. Midwest," February 5, 1999.

37/ See Automated Power Exchange, Inc., 82 FERC - 61,287, reh'g denied, 84 FERC - 61,020 (1998), appeals docketed, No. 98-1415 (D.C. Cir. Sept. 14, 1998) and No. 98-1419 (D.C. Cir. Sept. 14, 1998).

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rights and prices embedded in existing transmission agreements; the likelihood of not being able to maintain or gain a competitive advantage in power markets through the use of transmission facilities; and the preference of certain transmission owners to sell or transfer their transmission assets to a for-profit transmission company in lieu of handing over control to a non-profit ISO.

Apart from these efforts to create ISOs, we have received proposals for other types of transmission entities. For example, in October 1998 a group of Arizona entities filed a request with the Commission to create an "independent scheduling administrator" (ISA) in Arizona. 38/ Unlike an ISO, this entity would not administer its own transmission tariff nor would it have any direct operational responsibilities. Instead, it appears that its functions would be limited to monitoring the scheduling decisions and OASIS site operation of the Arizona utilities that operate transmission facilities. 39/ In case of disputes, the ISA would provide a type of expedited dispute resolution process. The applicants state that the ISA would be a transitional organization that would ultimately evolve or be

38/ Arizona Independent Scheduling Administrator Association, Docket No. ER99-388-000 (filed October 29, 1998).

39/ A proposal for a similar entity has been made in the Pacific Northwest. This entity, described as an independent grid scheduler, would make actual scheduling decisions rather than simply monitoring the decisions made by current transmission owners. See Regional ISO Conference (Portland), transcript at 39-40.

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merged into a stronger, multi-state ISO. 40/ In other developments, one public utility has recently made a filing with us to sell its transmission assets to a newly formed affiliate. 41/ Another public utility recently filed a request for declaratory order asking us to find that its proposal to transfer its transmission assets (in the form of ownership or a lease) to a "transco" in return for a passive ownership interest in the transco, would satisfy the Commission's eleven ISO principles. 42/

As part of general restructuring initiatives, several states now require independent grid management organizations. For example, an Illinois law requires that its utilities become members of a FERC-approved regional ISO by March 31, 1999, and Wisconsin law gives its utilities the option of joining an ISO or selling their transmission assets to an independent transmission company by June 30, 2000. In both states, the backstop is a single-state organization if regional organizations are not developed. Recently, Virginia and Arkansas have also enacted legislation requiring their electric utilities to join or establish regional transmission entities.

3. The Commission's ISO and RTO Inquiries;  
Conferences with Stakeholders and State Regulators

- 40/ See Applicant's filing, Docket No. ER99-388-000, at 3.
- 41/ FirstEnergy, Inc., Docket No. EC99-53-000 (filed March 19, 1999).
- 42/ Entergy Services, Inc., Docket No. EL99-57-000 (filed April 5, 1999).

In light of the various restructuring activities occurring throughout the U.S., the Commission has, within the past year,

held 11 public conferences in 9 different cities across the country to hear the views of industry, consumers, and state regulators with respect to the need for RTOs and their appropriate roles and responsibilities.

The Commission initiated an inquiry in March 1998 pertaining to its policies on ISOs. A notice establishing procedures for a conference gave the following rationale:

In Order Nos. 888 and 889 and their progeny, the Commission established the fundamental principles of non-discriminatory open access transmission services. Nevertheless, many issues remain to be addressed if the Nation is to fully realize the benefits of open access and more competitive electric markets.

\* \* \*

Given the dramatic changes taking place in both wholesale and retail electric markets and the many proposals under consideration with respect to the creation of ISOs or other transmission entities, such as transmission-only utilities, it is time for the Commission to take stock of its policies in order to determine whether they appropriately support our dual goals of eliminating undue discrimination and promoting competition in electric power markets. [43/]

Accordingly, the Commission held a series of eight conferences in 1998 to gain insight into participants' views on the formation and role of ISOs in the electric utility industry. The first conference was held in April 1998 at the Commission's offices in Washington, D.C. Between May 28 and June 8, 1998, the Commission

43/ Inquiry Concerning the Commission's Policy on Independent System Operators, Notice of Conference, Docket No. PL98-5-000, at 1-2 (March 13, 1998).

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held seven regional conferences in Phoenix, Kansas City, New Orleans, Indianapolis, Portland, Richmond and Orlando. As a result of these conferences, the Commission heard approximately 145 oral presentations and received a large number of written

comments on the appropriate size, scope, organization and functions of regional transmission institutions. A number of different of viewpoints were expressed. They will be discussed elsewhere in this NOPR and are summarized in Appendix A hereto.

On October 1, 1998, the Secretary of Energy delegated his authority under section 202(a) of the FPA to the Commission. In doing so the Secretary stated that section 202(a) "provides DOE with sufficient authority to establish boundaries for Independent System Operators (ISOs) or other appropriate transmission entities." 44/ The Secretary also stated,

FERC is also increasingly faced with reliability-related issues. Providing FERC with the authority to establish boundaries for ISOs or other appropriate transmission entities could aid in the orderly formation of properly-sized transmission institutions and in addressing reliability-related issues, thereby increasing the reliability of the transmission system.

On November 24, 1998, we gave notice in this docket of our intent to initiate a consultation process with State commissions pursuant to section 202(a). 45/ The purpose of the consultations was to afford State commissions a reasonable opportunity to present their views with respect to appropriate boundaries for

44/ 63 Fed. Reg. 53,889 (1998).

45/ Notice of Intent to Consult Under Section 202(a), 63 Fed. Reg. 66,158 (1998), FERC Stats & Regs. - 35,534 (1998).

regional transmission institutions and other issues relating to RTOs. Conferences with State commissioners were held in St. Louis, Missouri on February 11, 1999; in Las Vegas, Nevada on February 12, 1999; and in Washington, D.C. on February 17, 1999. In all, we heard oral presentations by representatives of 41 state commissions during these consultations, with others

monitoring or providing written comments. 46/ During these sessions, we received much valuable advice. We have set forth in Appendix B a summary of the comments received, and discuss in Section III.B below our response to some of the major concerns expressed.

C. Statutory Framework

The Commission is granted the authority and responsibility by FPA sections 205 and 206, 16 U.S.C. 824d, 824e, to ensure that the rates, charges, classifications, and service of public utilities (and any rule, regulation, practice, or contract affecting any of these) are just and reasonable and not unduly discriminatory, and to remedy undue discrimination in the provision of such services. In fulfilling its responsibilities under FPA sections 205 and 206, the Commission is required to address, and has the authority to remedy, undue discrimination and anticompetitive effects. The Commission has a statutory mandate under these sections to ensure that transmission in interstate commerce and rates, contracts, and practices affecting transmission services, do not reflect an undue preference or

46/ See Appendix B for a list of commenters.

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advantage (or undue prejudice or disadvantage) and are just, reasonable, and not unduly discriminatory or preferential. 47/ Additionally, as discussed in Order No. 888, 48/ there is a substantial body of case law that holds that the Commission's regulatory authority under the FPA "clearly carries with it the responsibility to consider, in appropriate circumstances, the anticompetitive effects of regulated aspects of interstate utility operations pursuant to [FPA] 202 and 203, and under

like directives contained in 205, 206, and 207." 49/

The Commission also has the authority and responsibility under section 203 of the FPA to review mergers and other transactions involving public utilities, including dispositions of jurisdictional facilities by public utilities. This includes public utilities' transfers of control of jurisdictional transmission facilities to entities such as RTOs. Under section 203, the Commission must approve a proposed disposition of

- 47/ Once such a finding is made, the Commission is required to remedy it. See, e.g., Southern California Edison Company, 40 FERC - 61,371 at 62,151-52 (1987), order on reh'g, 50 FERC - 61,275 at 61,873 (1990), modified sub nom., Cities of Anaheim v. FERC, 941 F.2d 1234 (D.C. Cir. 1991); Delmarva Power and Light Company, 24 FERC - 61,199 at 61,466, order on reh'g, 24 FERC - 61,380 (1983).
- 48/ Order No. 888, FERC Stats. & Regs. at 31,669.
- 49/ Gulf States Utilities Co. v. FPC, 411 U.S. 747, 758-59, reh'g denied, 412 U.S. 944 (1973) (Gulf States). See also City of Huntingburg v. FPC, 498 F.2d 778, 783-84 (D.C. Cir. 1974) (Commission has a duty to consider the potential anticompetitive effects of a proposed Interconnection Agreement.)

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jurisdictional facilities if it is consistent with the public interest. The Commission may grant an application under section 203 upon such terms and conditions as it finds necessary to secure the maintenance of adequate service and the coordination in the public interest of jurisdictional facilities.

Further, section 202(a) of the FPA, whose authority has recently been delegated to the Commission by the Secretary of Energy, 50/ authorizes and directs the Commission "to divide the country into regional districts for the voluntary interconnection and coordination of facilities for the generation, transmission,

and sale of electric energy...." The purpose of this division into regional districts is for "assuring an abundant supply of electric energy throughout the United States with the greatest possible economy and with regard to the proper utilization and conservation of natural resources...." Section 202(a) states that it is "the duty of the Commission to promote and encourage such interconnection and coordination within each such district and between such districts."

### III. DISCUSSION

#### A. Barriers to Assuring an Abundant Supply of Electric Energy Throughout the United States with the Greatest Possible Economy

In light of our experiences with ISOs and other utility restructuring activity in the aftermath of Order Nos. 888 and 889, and after almost three years of experience with implementation of Order Nos. 888 and 889, we believe that there

50/ 63 Fed. Reg. 53,889 (1998).

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remain important transmission-related impediments to a competitive wholesale electric market. We have grouped these remaining impediments into two broad categories. The first category of impediments consists of engineering and economic inefficiencies inherent in the current operation and expansion of the transmission grid -- inefficiencies that, in and of themselves, are hindering fully competitive power markets and imposing unnecessary costs on electric consumers. The second category of impediments consists of continuing opportunities for transmission owners to unduly discriminate in the operation of their transmission systems so as to favor their own or their affiliates' power marketing activities. Both sets of impediments

unnecessarily restrict the scope of bulk power markets and inhibit the large-scale competition that we sought in issuing Order Nos. 888 and 889.

The situation of the electric industry is somewhat analogous to the natural gas industry after the initial step of open access transportation was taken. In 1985, the Commission issued Order No. 436, 51/ which instituted open-access, nondiscriminatory

51/ Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, Order No. 436, 50 Fed. Reg. 42408 (Oct. 18, 1985), FERC Stats. & Regs. [Regulations Preambles 1982-1985] - 30,665 (1985), vacated and remanded, Associated Gas Distributors v. FERC, 824 F.2d 981 (D.C. Cir. 1987), cert. denied, 485 U.S. 1006 (1988), readopted on an interim basis, Order No. 500, 52 Fed. Reg. 30334 (Aug. 14, 1987), FERC Stats. & Regs. [Regulations Preambles, 1986-1990] - 30,761 (1987), remanded, American Gas Association v. FERC, 888 F.2d 136 (D.C. Cir. 1989), readopted, Order No. 500-H, 54 Fed. Reg. 52,344 (Dec. 21, 1989), FERC Stats. & Regs. [Regulations Preambles 1986-1990] - 30,867 (1989), reh'g (continued...)

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transportation of natural gas with the goal of increasing competition and permitting gas users to purchase gas directly from gas merchants. However, the Commission subsequently found that open access alone was not sufficient to remove all barriers to competition. 52/ Because of the different structures of the electric and gas industries, the specific remaining impediments to competition may not be the same, but there are similarities in that open access, without sufficient mechanisms for ensuring that such access is equal and efficient for all participants, may not be enough to promote a fully competitive market. 53/

51/ (...continued)

granted in part and denied in part, Order No. 500-I, 55 Fed. Reg. 6605 (Feb. 26, 1990), FERC Stats. & Regs. [Regulations Preambles 1986-1990] - 30,880 (1990), aff'd in part and remanded in part, American Gas Association v. FERC, 912 F.2d 1496 (D.C. Cir. 1990), cert. denied, 111 S. Ct. 957 (1991).

- 52/ In the case of natural gas, we found that the principal remaining barrier was the continued existence of bundled city-gate firm sales service that had a transportation component of higher quality than available through open access. Hence, we issued Order No. 636 to unbundle services and equalize the quality of service offered. See Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, 57 Fed. Reg. 13,267 (April 16, 1992), III FERC Stats. & Regs. - 30,939 (April 8, 1992), reh'g granted and denied in part, Order No. 636-A, 57 Fed. Reg. 36,128 (August 12, 1992), III FERC Stats. & Regs. - 30,950 (August 3, 1992), order on reh'g, Order No. 636-B, 57 Fed. Reg. 57,911 (December 8, 1992), 61 FERC - 61,272 (1992), Notice of Denial of Rehearing (January 8, 1993), 62 FERC - 61,007 (1993), aff'd in part and vacated and remanded in part, United Dist. Companies v. FERC, 88 F.3d 1105 (D.C. Cir. July 16, 1996), order on remand, Order No. 636-C, 78 FERC - 61,186 (1997).
- 53/ For a discussion of the similarities and differences in the structure and regulation of the natural gas and electric industries, see generally Santa and Sikora, Open Access And (continued...)

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Our current understanding of industry conditions, as set forth below, will be enhanced by future consultations with and analysis from all industry stakeholders, including state commissions. The Commission seeks comments in order to achieve a deeper appreciation of any impediments to competition in the Nation's electricity markets and how they should be addressed.

1. Engineering and Economic Inefficiencies in the Operation, Planning and Expansion of Regional Transmission Grids

The transmission facilities of any one utility in a region are part of a larger, integrated transmission system. From an electrical engineering perspective, each of the three interconnections in the United States (the Eastern, the Western and ERCOT) operates as a single "machine." 54/ The Eastern Interconnection also extends into Canada, and the Western Interconnection includes parts of Canada and Mexico.

Problems have arisen over the last three years, in part,

because we have multiple operators of each of these machines. Each separate operator usually makes independent decisions about the use, limitations and expansion of its piece of the interconnected grid based on incomplete information. This approach -- separate operation of each utility's own transmission

53/ (...continued)

Transition Costs: Will The Electric Industry Transition Track The Natural Gas Industry Restructuring?, 15 Energy L.J. 273 (1994).

54/ North American Electric Reliability Council, Electric Reliability Panel, "Reliable Power: Renewing the North American Electric Reliability Oversight System," December 1997, at 9.

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facilities -- would make engineering sense only if each system operated independently of the others. But the physical reality is that, within the three interconnected grids, any action taken by one transmission provider can have major and instantaneous effects on the transmission facilities of all other transmission providers. 55/

This is not a new phenomenon. Since the very first transmission interconnection between two neighboring utilities, interconnected utilities have had to cope with the fact that electricity will flow over others' lines. In the past, these effects were often small or infrequent and the utility could generally pass any costs through to captive customers. Today, with the increase in bulk power trade and the large shifts in power flows, the effects may be large, frequent and not recoverable by the utility bearing the cost.

Another important change is that the structure of the industry that exists today is very different from the industry that existed three years ago when we issued Order No. 888. The

industry is no longer composed uniformly of vertically-integrated, self-sufficient public utilities that do not compete with each other. Instead, it is an increasingly de-integrated

55/ U.S. Congress, Office of Technology Assessment, "Electric Power Wheeling and Dealing, Technological Considerations for Increasing Competition," May, 1989.

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and decentralized industry with many new and existing participants that actively compete against each other. 56/

As a consequence of these changes in trade patterns and industry structure, certain operational problems have become more significant and more difficult to resolve. These include: maintaining reliable grid operations; determining available transmission capability (ATC); 57/ managing transmission congestion; and planning and investing in new transmission facilities. In addition, traditional approaches to the pricing and provision of transmission service may be hindering the further development of competitive and efficient bulk power markets. These impediments include: pancaking of transmission access charges; non-market approaches to managing congestion; the absence of clear transmission rights; the absence of secondary markets in transmission service; and the possible disincentives created by the level and structure of transmission rates. The Commission believes that properly structured RTOs can address both sets of problems and further the development of competitive bulk power markets.

56/ For example, there are now about 550 Commission-approved power marketers. Decentralization has also increased because of divestiture of generating plants by traditionally vertically integrated utilities. Such sales are frequently required by state governments as one element of the structural reforms that accompany the introduction of retail competition. During the last three years, utilities have sold or have contracts to sell more than 50,000 MW of existing generating capacity. About 30,000 MW of additional capacity is currently being offered for sale.

57/ See definition of ATC infra.

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a. Reliable Grid Operations

The United States has one of the most reliable power systems in the world. For over thirty years, NERC and the regional reliability councils have developed and implemented voluntary standards to maintain the security of the transmission systems. There is no net public policy benefit to promoting competition if reliability suffers as a consequence. 58/ The promotion of competition must therefore go hand-in-hand with the creation of new institutions to ensure that reliability is maintained or improved in any new industry structure. 59/ We fully agree with the findings of the DOE Reliability Task Force:

...there is a critical need to be sure that reliability is not taken for granted as the industry restructures, and thus does not "fall through the cracks." 60/

The DOE Reliability Task Force also pointed out that with the entry of many new participants, dramatic increases in unbundled power sales and shifts in electrical flows, the nation's bulk power system is being stressed in ways that have never been experienced before. A similar conclusion was reached by NERC in its 1998 summer assessment of bulk power reliability:

58/ Unless otherwise noted, we use the term "reliability" to refer to the reliable or secure operation of the bulk power grid. This is one component of the broader NERC definition, which also includes "adequacy" (i.e., sufficient generation

and transmission capacity) as a second component of overall reliability. See North American Electric Reliability Council, "Glossary of Terms," August 1996, at 21.

59/ See George C. Loehr, "Ten Myths About Electric Deregulation: Electrons May Seem Imaginary, But Reliability Is Real," Public Utilities Fortnightly, April 15, 1998, at 28-31.

60/ DOE Task Force Report, at xv.

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Throughout the Regions, parallel path flows from increased electricity transfers are stressing the transmission systems. These flows are at magnitudes and in directions not anticipated at the time the systems were designed...The transmission system will be required to operate under unprecedented, and sometimes unstudied, conditions. 61/

These stresses have always existed but not in these magnitudes. Moreover, they could be more readily accommodated through voluntary ad hoc agreements when there were fewer industry participants who generally did not compete against each other in any significant way. 62/ But as we have noted, this traditional industry structure is rapidly disappearing. Our concern is that the reliability fault lines may become more prominent and dangerous.

It is well accepted that the operation of interconnected transmission networks requires careful coordination and the exchange of information between many individual systems. Any operational change on one system in the network instantly affects other systems. For example, the shipment of power from one location to another will divide among all transmission paths from source to destination based on the laws of physics. 63/ This is

61/ NERC, "1998 Summer Assessment: Reliability of Bulk Electricity Supply in North America," May 1998, at 2-3.

62/ In assessing the continued viability of the current system, NERC's blue-ribbon Electric Reliability Panel concluded that: "The competitive dynamics among a much larger universe of players is not at all conducive to a system of voluntary peer compliance." Electric Reliability Panel Report,

December 1997, at 28.

- 63/ The amount of power flowing on any path in an electrical network is inversely proportional to that path's impedance. (continued...)

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referred to as parallel path or loop flow. Such flows will also affect a neighboring system's ability to determine ATC accurately. In addition, if a transmission facility is already loaded close to its operating limit, the additional flow resulting from a transaction contracted for on a neighboring system may overload the facility and threaten reliability. In order to operate the system in a reliable manner, a single, independent grid operator must know all sources and destinations for each transaction. The Commission believes that an RTO, as the only transmission provider and security coordinator in its region, would have the information needed to identify the effects of parallel flows and accommodate them in its operations.

At present, the industry's ability to maintain reliable grid operation is hindered by the existence of many separate organizations that directly or indirectly affect the operation and expansion of the grid. There are more than 100 owners of the Nation's grid who operate about 140 separate control areas. 64/ In addition, there are 10 regional reliability councils, 23

63/ (...continued)

Impedance will depend on the actual length of the line and its voltage. See U.S. Congress, Office of Technology Assessment, *Electric Power Wheeling and Dealing: Technological Considerations for Increasing Competition*, OTA-E-409, May 1989, at 110-11.

- 64/ A control area is an electrical system bounded by interconnection (tie-line) metering and telemetry. Within a control area, resources are balanced against load, and generation is regulated to maintain interchange schedules with other control areas and to achieve the target frequency (60 hz) for the entire interconnection. See NERC Operating Policies Manual (available on the NERC website at

www.nerc.com).

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security coordinators, 5 regional transmission groups (RTGs) and 5 independent system operators. With so many entities, the lines of authority and communication are not always as clear as they should be. 65/ An additional complication is that many of these entities also own generation or have a decision making process that continues to be dominated by traditional vertically integrated utilities. 66/ Therefore, their independence and commercial neutrality as grid operators is subject to question.

It appears that information that is critical for maintaining reliability is not being shared as readily now as was generally the case in the past. NERC recently observed that there is a growing "reluctance on the part of the market participants to share operational real-time and operational planning data with TPs [transmission providers]." 67/ This is not surprising because, as we have noted before, information that is needed for reliability purposes may also have a commercial value. 68/ If market participants believe that the entity that receives operational information for reliability reasons may use it for commercial advantage, they will understandably be reluctant to supply the information. After spending more than 18 months reviewing the current reliability system, the DOE

65/ See, e.g., Western Systems Coordinating Council, EL99-23-000, comments of Enron Power Marketing, Inc. at 4-5.

66/ See, e.g., New England Power Pool, 86 FERC - 61,262 at 61,965 (1999).

67/ NERC, Reliability Assessment 1998-2007 at 39 (1998).

68/ Midwest ISO, 84 FERC at 62,158-159.

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Reliability Task Force concluded that this inherited system, with its patchwork of organizations, inadequate information sharing and overlapping and sometimes unclear responsibilities, is "clearly unsustainable" and that until new policies and institutions are in place, "substantial parts of North America will be exposed to unacceptable risk." 69/

This is not just a theoretical concern. During last year's regional ISO conferences, several industry participants described three "reliability near misses" in the Midwest. The three incidents on July 22, 1993, August 7, 1996 and July 11, 1997 came very close to producing major outages throughout the Midwest. 70/ While there has been some improvement in coordination among different systems, we believe that there are limits to the amount of coordination that can be achieved between separate organizations, especially if they are competing for the right to use the same limited transmission capacity and sometimes competing for the same customers. While competition requires decentralization, we think that reliable and efficient grid operation requires more coordination. The Commission believes that a beneficial platform for both competition and reliability is a single independent grid operator that sees the "big picture" by having access to real-time information on conditions and

69/ DOE Task Force Report at vii and xi.

70/ Regional ISO Conference (Indianapolis), transcript at 24-29.

schedules for the entire regional grid. 71/ Such an entity does not exist in several regions of the country. As a consequence, there is, at present, a disconnect between electrical flows and information flows that could have major reliability consequences.

b. Determining Available Transmission  
Capability (ATC)

Any transportation service provider should know how much commodity it can carry. For electric transmission service providers, the calculations of total transmission capability (TTC) and ATC are needed to make this determination. TTC and ATC are key elements of the OASIS information system. 72/ Order No. 889 requires each transmission provider to calculate and post TTC and ATC numbers to give its transmission customers a reasonable estimate of how much power can be carried between any two locations on the grid and how much capacity is available to support additional trade at any given time.

We have received many complaints about the accuracy and usefulness of posted ATC numbers. There are several reasons why it is difficult to determine available transmission capability accurately.

71/ The importance of a single operator for reliability was stressed in comments of AMEREN and Commonwealth Edison. See Regional ISO Conference (Indianapolis), transcript at 19-29.

72/ ATC is a measure of transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses. TTC is the amount of electric power that can be transferred over the interconnected transmission network in a reliable manner based on certain specified conditions, North American Reliability Council, Glossary of Terms (1996).

First, ATC numbers are still calculated on an individual

company basis in many areas of the country. Separate calculations of ATC by individual companies are fundamentally inconsistent with the physical reality of an interconnected transmission system. An individual transmission provider may post ATC numbers in good faith, and attempt to provide transmission service based on these numbers, only to learn later that the transfer capability that it thought was available no longer exists because of decisions made by other transmission providers that it did not know about at the time it made its calculations. Accurate ATC numbers would require reliable and timely information about load, generation, facility outages and transactions on neighboring systems. Individual transmission operators will generally not have this information. They also may apply differing assumptions and criteria to ATC calculations, which may produce wide variations in posted ATC values for the same transmission path. 73/ All these considerations make it virtually impossible for an individual transmission provider that operates one part of a large interconnected grid to calculate ATC accurately. 74/

73/ This, in turn, creates other problems. According to NERC, the "inconsistent calculation [of ATC] can increase the use of TLR and other operational complexities, which has the potential to cause reliability problems." NERC, Reliability Assessment, 1998-2007, September, 1998, at 40. (See definition of TLR in section II.)

74/ In addition, it has been frequently alleged that individual transmission may intentionally post inaccurate ATC numbers to favor their own power marketing efforts. These  
(continued...)

Second, requests for transmission service are usually based on "contract path" scheduling. This is the practice of finding a contiguous chain of utilities from the power supplier to the

power consumer and contracting with those utilities to transmit the power. The implicit assumption is that all the power flows through the utilities along this "contract path." In fact, the power divides up and flows along all paths from the supplier to the buyer. All utilities in the region are affected. Contract path scheduling provides little or no information about actual flows on the grid. 75/ In its October 1997 report to the Commission, the Commercial Practices Working Group commented that: "Reserving and scheduling transmission on a contract path basis does not even closely resemble the physical impact on the system." 76/ We note that NERC is encouraging initiatives that would move the industry toward recognizing actual flows in scheduling. 77/

c. Managing Congestion

Congestion occurs when requests for transmission service exceed the capability of the grid. When transmission constraints limit the amount of power that can be transmitted, the loads on the system may not be able to be served by the least-cost mix of

74/ (...continued)

allegations are discussed in section III.A.2.

75/ See Allegheny Power Service Corporation et al., 78 FERC - 61,314 at 62,339.

76/ October 31, 1997 report, at 39.

77/ See NERC, 85 FERC at 62,363.

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available generators. The constraints may reflect voltage, temperature and dynamic limits. Relieving congestion leads to a more costly pattern of generation dispatch. The cost of congestion is the additional energy cost associated with the new pattern of dispatch.

We recognize that even optimally designed systems will normally experience at least occasional congestion that at times can be significant and costly. In general, congestion can be managed in two ways: the construction of new transmission facilities that increase grid capacity; or the redispatch of existing or new generators to reduce flows or create counterflows on the constrained facility. The complete elimination of congestion would typically require the construction of new transmission facilities. While this may be a physically effective solution, it may not always be cost effective. Because of this, we believe that an efficiently operated transmission system should have in place mechanisms for pricing congestion and then managing congestion through changes in the pattern of dispatch. Without mechanisms for determining the cost of congestion, it will be virtually impossible to make rational, cost effective decisions to expand the grid.

The Commission believes that efficient congestion management is best performed at the regional level. At present, outside of the operational ISOs, transaction curtailment through transmission loading relief (TLR) procedures is the dominant approach for dealing with congestion in the Eastern

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Interconnection. NERC has reported that its TLR procedures were invoked 329 times between July 1997 and October 1998 on the Eastern Interconnection. 78/ Current TLR procedures are cumbersome, inefficient and disruptive to bulk power markets because they rely exclusively on physical measures of flows with no attempt to assess the relative costs of different congestion management options. Moreover, TLR actions are typically taken by one utility without assessing the costs imposed on other grid

users. This inevitably raises the suspicion that the TLR request could be motivated by competitive rather than reliability concerns. For these reasons, the Commission has encouraged NERC to develop regional market approaches to managing congestion. 79/

The Commission recognizes, however, that NERC may not be able to comply fully with this policy in the absence of regional organizations that have the authority and ability to promote regional congestion markets. There are three considerations that support this conclusion.

First, a regional organization would have accurate and reliable information about existing and possible future conditions on the grid. Such information is generally not available to individual transmission providers. RTOs would have this information because they would function as both regional security coordinators and regional transmission providers.

78/ North American Electricity Reliability Council, Interim Market Interface Committee, Minutes of Jan. 12 and 13, 1999 meeting, Exhibit D.

79/ See NERC, 85 FERC at 62,364.

Second, congestion management is best performed at a regional level. This is shown in the largely unsuccessful efforts of Commonwealth Edison to create congestion markets that would allow transmission customers to "buy-through" (i.e., firm up) transmission rights on congested flow gates. After six months of its one year experiment, we note that Commonwealth concluded that it is "difficult for one transmission owner to identify and implement redispatch" when the physical limitations and cost effective options for relief exist on other transmission systems that are beyond their reach. 80/

Third, RTOs will be able to establish and define rights to the use of the grid. At present, with multiple and independent operators of the grid, individual users and owners have unclear and conflicting rights to the grid. This makes it difficult to establish congestion markets. A congestion market, like any other market, cannot develop in the absence of clear rights. 81/ Such rights, whether held by transmission users or owners, are a necessary prerequisite for establishing congestion markets. Without establishing such rights, the industry will continue to grapple with the problem of incomplete markets. Thus, it is difficult to achieve efficient and competitive regional bulk

80/ Commonwealth Edison, Interim Report on Non-Firm Redispatch, Docket No. ER98-2279, December 17, 1998, at 4, 10.

81/ Robert Cooter and Thomas Ulen, Law and Economics, Scott, Foresman and Company, 1988, at 91 ("From a legal viewpoint, property is a bundle of rights").

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power markets if congestion on the transmission grid is not accurately priced.

d. Planning and Expanding Transmission Facilities

Transmission planning and expansion are more difficult today than three years ago. While uncertainty has always been a fact of life for any transmission planning exercise, the level of uncertainty has increased with the increasing number and distance of unbundled transactions and the wider variation in generation dispatch patterns. Uncertainty has also increased because:

Generation developers are reluctant to disclose their plans for future capacity additions. Similarly, utilities intending to purchase from others are reluctant to speculate on whom or where their suppliers might be, making modeling

of such transactions for transmission analysis virtually impossible. 82/

One troubling consequence of this uncertainty has been a noticeable decline in planned transmission investments. NERC recently reported that the level of planned transmission additions is significantly lower than five years ago despite an overall increase in load growth and unbundled transmission service. 83/ While this could simply reflect better utilization of the existing grid, the Commission is concerned that it may also reflect an incompatibility of existing planning institutions with the new market realities.

82/ NERC, "Reliability Assessment, 1998-2007," September 1998, at 39.

83/ Id. at 7.

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We are also concerned that the existing approach to transmission pricing may not sufficiently encourage the investments in transmission facilities that are needed to improve the reliability and efficiency of the grid. Inadequate investment could be a major impediment to the development of regional bulk power markets and a possible source of future reliability problems. There are at least three concerns about the way transmission prices are set.

First, although there are varying degrees of investment coordination around the country, utilities ultimately make transmission investment decisions individually rather than through joint decisions that internalize commercial and reliability effects of the investment. It may be unclear which utility should have the responsibility for expanding capacity to

relieve a transmission constraint. For example, power flows scheduled by one utility with ample transmission capacity on its own lines may overload a neighbor s lines. The first utility may be unwilling to expand transmission capacity because it needs no extra transmission capacity itself, and the second utility may be unwilling to expand transmission capacity because it collects no revenues from the power flows scheduled by others. In a multi-utility region, decisions about where to site new facilities and who should pay for capacity expansions can be even more complex unless a regional body provides a forum for discussions and a method for resolving disputes.

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Second, the motivation for constructing new facilities is changing as the industry changes. Formerly, a utility built transmission primarily to deliver power from its generating plants to its customers. Inadequate transmission would have hurt power sales, the principal source of utility revenue. Today, facility expansion may be needed to transmit power sold by others. As generation and transmission ownership become increasingly separate and as many states implement or even merely consider retail access, the transmission owner s traditional incentive for making new transmission investment to support its power sales erodes. Incentives for transmission investment need to be related more to the power needs of the region than the generation stock of the transmission owners.

Third, the transmission owner that does invest in transmission to overcome a constraint may be concerned about recovering its investment. Under traditional ratemaking practices, it must recover its investment over a long period of

time, typically thirty years. But subsequent generation construction on the power-poor side of the constraint may obviate the need for the line and threaten recovery of its capital cost. In addition, where there is higher risk, a higher return commensurate with the higher risk may be appropriate. To support this, customers and regulators would want assurance that the decision to invest in transmission is made in the best interests of the region, considering not only all the transmission options but also the generation and demand management alternatives to

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transmission construction. Therefore, as discussed below, we will consider concrete proposals from regional transmission organizations for transmission pricing reforms and the explicit use of pricing incentives to encourage RTOs to make efficient investments in new transmission facilities.

e. Pancaked Transmission Rates

With the exception of power pools, open access under Order No. 888 focuses on individual, existing transmission providers. Order No. 888 does not require transmission pricing reforms that are needed to support efficient and competitive bulk power markets. The "missing" reforms include, among others, the elimination of pancaked transmission access charges, the use of reservation-based (as opposed to load-based) transmission tariffs and the availability of secondary markets in transmission rights. 84/ In this section, we will focus on the problems created by the widespread pancaking of transmission access charges. 85/

In most of the United States, a transmission customer pays separate, additive access charges every time its contract path crosses the boundary of a transmission owner. By raising the cost of transmission, pancaking reduces the size of geographic

- 84/ See, e.g. Capacity Reservation Open Access Transmission Tariffs, Notice of Proposed Rulemaking, FERC Stats. and Regs. - 32,519 (1996) and Inquiry Concerning the Commission's Pricing Policy for Transmission Services Provided by Public Utilities Under the Federal Power Act: Policy Statement, 69 FERC - 61,086 (1994).
- 85/ We did, however, require non-pancaked rates for power pools that offer non-pancaked rates to their own members in Order No. 888. Order No. 888, FERC Stats. and Regs. at 31,727-28.

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power markets. This, in turn, can result in concentrated electricity markets. Balkanization of electricity markets hurts electricity consumers, in general, by forcing them to pay higher prices than they would in a larger, more competitive, bulk power market. 86/

The Commission has heard from many states about the negative effects of pancaked rates in their efforts to introduce retail competition. At this time, about 21 states have introduced or are planning to introduce competition for retail loads under their jurisdiction. 87/ Because the Commission has jurisdiction over transmission service and rates for unbundled retail customers, we have an obligation to address these concerns. 88/ A retail choice initiative, no matter how well designed at the state level, may fail if the pool of potential competitors is effectively limited to a few nearby supply sources because of pancaked transmission charges.

This concern of pancaked rates was highlighted to us in the recent consultations with our state commission colleagues. Several state commissioners emphasized that the success of their

- 86/ While it is difficult to estimate the exact impact on consumers, we note that there have been studies of the deregulated British power markets that have found excessive

concentration in generation has produced prices 20 to 40 percent above competitive levels at certain times. Richard Green and David Newbery, *Competition in the British Electricity Spot Market*, 100 J. Pol. Econ., 929, 1992.

87/ "Status of Electric Utility Deregulation as of May 1, 1999," Energy Information Administration.

88/ Order No. 888, FERC Stats. and Regs. at 31,651-52.

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retail competition initiatives is related to the adoption of non-pancaked transmission tariffs and other ISO policies . 89/ We believe that the likelihood of success for existing and planned retail choice initiatives is significantly enhanced if the Commission can ensure fair and efficient access to a regional market without pancaked transmission access charges, and that we need to take steps beyond Order No. 888 to accomplish this.

f. Conclusion

We believe that the preferred solution to the engineering and economic problems discussed in this section is a regional solution. Notwithstanding its success, Order No. 888 has not been able to produce a fully efficient and competitive outcome because it does not address ATC calculations, congestion management, reliability, pancaking of transmission access charges, and grid planning and expansion. These are regional problems. Therefore, we are proposing a rule to encourage the development of independent regional transmission operators that can promote both electric system reliability and competitive generation markets.

2. Actual and Perceived Discriminatory Conduct by Transmission Owners to Favor Their Own or Affiliated Merchant Operations

In addition to operational inefficiencies impeding full competition, there also exist questions about residual discrimination in the provision of transmission services by public utilities. As discussed below, many in the industry have

89/ See, e.g., Comments of Gerald Thorpe (Maryland) and President Herbert Tate (New Jersey), RTO Conference (Washington, DC), transcript at 37-39; 49-51.

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expressed a fundamental mistrust of transmission owners. In addition, there are allegations, and in some circumstances findings, of actual discrimination by transmission owners. We discuss below indications of discriminatory conduct by vertically integrated utilities and seek further comment on utility practices subsequent to Order No. 888.

Utilities that control monopoly transmission facilities and also have power marketing interests 90/ have poor incentives to provide equal quality transmission service to their power marketing competitors. It is, in fact, in the economic self-interest of transmission-owning utilities to favor their own power marketing interests and frustrate their competitors. As the Commission stated in Order No. 888:

It is in the economic self-interest of transmission monopolists, particularly those with high-cost generation assets, to deny transmission or to offer transmission on a basis that is inferior to that which they provide themselves. The inherent characteristics of monopolists make it inevitable that they will act in their own self-interest to the detriment of others by refusing transmission and/or providing inferior transmission to competitors in the bulk power markets to favor their own generation, and it is our duty to eradicate unduly discriminatory practices. [91/]

The exercise of transmission market power allows transmission providers with power marketing interests to benefit in the short-run by making more power sales at higher prices, and benefit in

90/ The term power marketing interests is used as shorthand herein to include the utility's own wholesale merchant function as well as any affiliates with wholesale merchant functions.

91/ Order No. 888, FERC Stats. & Regs. at 31,682.

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the long-run by deterring entry by other market participants. As a result, prices to the Nation's electricity consumers will be higher than need be.

It was to eliminate this inherent tendency of a vertically-integrated utility to favor its own power sales that Order Nos. 888 and 889 required utilities to functionally unbundle their transmission and power merchant services. Generally, functional unbundling requires a public utility to: separate its transmission system functions and staff from wholesale generation marketing functions and staff; abide by a standard of conduct to define impermissible contact between generation and transmission personnel; take transmission services under the same open access tariff of general applicability as do others; state separate rates for wholesale generation, transmission, and ancillary services; and rely on the same Open Access Same-Time Information System (OASIS) that its transmission customers rely on to obtain information about its transmission system when buying or selling power. 92/ The Commission imposed these requirements to establish a foundation for open grid access and competitive electricity markets.

Functional unbundling did not change the incentives of vertically-integrated utilities to use their transmission assets to favor their own generation, but instead attempted to reduce the ability of utilities to act on those incentives. In Order No. 888, the Commission received and considered numerous comments

92/ Id. at 31,654-55.

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that functional unbundling was unlikely to work, and that more drastic restructuring, such as corporate unbundling, was needed.

93/ However, the Commission decided at the time to adopt what it considered to be the less intrusive and less costly remedy.

Clearly, Order No. 888 has resulted in wholesale power markets becoming more competitive, more transmission services being made available to more potential users than ever before, and generally lower transaction costs.

However, market participants increasingly have alleged that numerous transmission service problems related to discriminatory conduct remain, and that these problems are impeding competitive wholesale power markets. 94/ Our information about alleged continued discriminatory practices comes from several sources. These include formal complaints filed with the Commission, informal complaints made to the Commission's enforcement hotline, oral and written comments made in conjunction with public conferences held by the Commission, and pleadings filed with the Commission in various dockets.

Compared to the situation before Order No. 888, transmission-owning utilities must now resort to more subtle means to frustrate their marketing competitors and favor their own marketing interests. Continued discrimination may be

93/ Id. at 31,653-54.

94/ See, e.g., Comments of Roger Fontes on behalf of the Northern California Power Agency, Regional ISO Conference (Phoenix), Transcript at 136 ("In general, orders 888 and 889 have not fully remedied undue discrimination in providing transmission service in this country.")

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conscious and deliberate, but it may also result from the failure to make sufficient efforts to change the way integrated utilities have done business for many years. In either case, the tendency of transmission owners to confer advantages, however subtle, upon their own marketing interests is discriminatory as against other marketers.

In the sections that follow, we will outline the information derived from filings and other sources about remaining impediments to competition caused by continued discriminatory conduct by transmission owners. We note, and we are well aware, that many allegations that have been made in various forums are unproved, and perceived discrimination may in fact turn out to have justifiable explanations. It is often hard to determine, on an after-the-fact basis, whether an action was motivated by an intent to favor affiliates or simply resulted from the need to serve native load customers or the impartial application of operating or technical requirements. Given our considerable difficulty in determining whether there has been compliance with our regulations, the question arises whether functional unbundling is an appropriate long-term regulatory solution.

We consider allegations of discrimination, even if not reduced to formal findings, to be a serious concern for two reasons. First, we may be seeing only the "tip of the iceberg." We are aware that instances of actual discriminatory conduct may be undetectable in a non-transparent market. In addition, there are significant disincentives to filing and pursuing formal

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complaints that would result in definitive findings.

Transmission customers often tell the Commission s enforcement

staff that they are reluctant to make even informal complaints because of concerns that the Commission will not take strong action, and fear, perhaps most importantly, of retribution by their transmission supplier. 95/ We also have been told that the complaint process is costly and time-consuming, 96/ and that the Commission's remedies for transmission violations do not impose sufficient financial harms on the transmission provider to act as a significant deterrent. 97/

Perhaps the most problematic aspect of relying on after-the-fact enforcement in the fast-paced business of power marketing, however, is that there may be no adequate remedy for lost short-term sale opportunities. For example, the Electric Power Supply Association has told us:

Furthermore, even if the exercise of such discrimination could be adequately documented and packaged in the form of a complaint under Section 206 of the Federal Power Act under a more streamlined complaint process contemplated by the Commission, it would still be extremely costly and inefficient to deal with such complaints on a case-by-case basis. More

95/ See Comments of Dan Jones on behalf of the Public Utilities Commission of Texas, Regional ISO Conference (Kansas City), Transcript at 185 ("And we've also heard that these entities are hesitant to bring those complaints forward because they have to deal with both sides of that utility").

96/ We note that we have recently issued a Final Rule regarding complaint procedures designed to make them more efficient. See Complaint Procedures, Final Rule, Docket No. RM98-13-000, 86 FERC - 61,324 (issued March 31, 1999).

97/ Comments of National Energy Marketers Association, Docket No. RM98-5-000 (filed January 22, 1999).

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than likely, the potential power transactions for which transmission principally was sought would disappear by the time a Commission ruling was obtained. 98/

Accordingly, actual problems with functional unbundling may be more pervasive than formally adjudicated complaints would

suggest, and the informal allegations we hear provide valuable insight.

Second, we consider the allegations of discrimination to be serious because, if nothing else, they represent a perception by market participants that the market is not working fairly because such participants know that integrated utilities have the incentive and opportunity to discriminate. Mistrust in the market can itself be a serious impediment to competition. If market participants perceive that other participants have an unfair advantage through the affiliation with the transmission provider, it can inhibit their willingness to participate in the market, including, for example, building new generating units, thus thwarting the development of robust competition. Such mistrust can also harm reliability. As stated by NERC, there is a reluctance on the part of market participants to share operational real-time and planning data with transmission providers because of the suspicion that they could be providing an advantage to their affiliated marketing groups. 99/

98/ Motion to Intervene and Comments of Electric Power Supply Association in Support of Petition for Rulemaking, Docket No. RM98-5-000 (filed Sept. 21, 1998), at 3.

99/ NERC Reliability Assessment 1998-2007, at 39.

The functional unbundling policy underlying Order No. 888 was an attempt to regulate the behavior of transmission owners. There are growing indications, however, that the conflicting incentives that vertically integrated utilities have regarding transmission access may be too difficult to police. Many have asserted that it is not realistic even to expect functional

unbundling to eliminate attempts by transmission owners to gain economic advantage. Companies have an obligation to maximize value for shareholders, and it should be no surprise that they will be aggressive in doing so. For example, in comments to the Commission in the Order No. 888 proceeding, the Federal Trade Commission advised the Commission that a functional unbundling approach "...would leave in place the incentive and opportunity for some utilities to exercise market power in the regulated system. Preventing them from doing so by enforcing regulations to control their behavior may prove difficult." A representative of Lafayette Utilities told us at the New Orleans ISO Conference:

Notwithstanding functional separation and the requirement not to discriminate, transmission personnel are well aware of the interests of their company's generation function, and can find a way to give preferential treatment.... 100/

A representative of a Wisconsin public utility told us:

Administration of the tariff entails a myriad of decisions that require discretion, as well as "technical" judgments (like [available transmission capability] and [capacity benefit margin]) that have significant competitive ramifications. It is

100/ Comments of Frank Ledoux on behalf of Lafayette Utilities System, Regional ISO Conference (New Orleans), Transcript at 180.

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inevitable that these decisions and judgments will be made with competitive concerns in mind. Functional separation does not solve this problem. 101/

Similarly, at our regional ISO conference in Indianapolis, we were told:

In a capital intensive industry where a high percentage of the investment is in generation assets, it is inconceivable that a utility, which in some cases has very high generation cost, would somehow manage its transmission system so as not to give its generation a competitive advantage. I think this is self-evident. [102/]

While it should not be assumed that such problems exist in every circumstance, clearly many market participants do not believe the market can yet be trusted with respect to their commercial interests, at least in some areas. We now turn to some of the areas that have produced the most complaints about continuing discrimination.

a. Calculation and Posting of Available Transmission Capability in a Manner Favorable to the Transmission Provider

Perhaps the most significant complaint with respect to alleged discriminatory conduct under functional unbundling concerns the important function of calculating and posting the amount of transmission capability that is available on a transmission provider's system. The transmission provider is required to calculate and post on its OASIS the TTC and ATC for

101/ Statement of Roy Thilly on behalf of Wisconsin Public Power, Inc. at 2, Docket No. PL98-5-000 (filed April 15, 1998).

102/ Comments of Kenneth Hegemann on behalf of American Municipal Power, Ohio, Regional ISO Conference (Indianapolis), Transcript at 174.

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each posted transmission path. 103/ ATC is the capacity that is stated to be available for transmission service requests. As we discussed above in Section III.A.1, it is not possible to calculate accurately the transmission capability of one system without knowing the flows scheduled by all other interconnected transmission providers in the region. Given this technical problem, it may be impossible to distinguish an inaccurate ATC presented in good faith from an inaccurate ATC presented for the purpose of favoring the transmission provider's marketing interests.

Transmission providers with power marketing interests have incentives to understate ATC on those paths valuable to its marketing competitors, or to divert transmission capacity so that it is available for use by its own marketing interests. If there is insufficient ATC, competitors may be forced to forego power sale transactions or use a less desirable alternative path if one is available.

The Commission has found violations of ATC postings in three cases. In Washington Water Power Company, 104/ the transmission owning utility showed that it had no firm ATC, which would have discouraged any potential marketers who needed firm transmission service to make a sale. However, the utility then offered its power marketing affiliate, Avista Energy, an "interruptible firm"

103/ See 18 C.F.R. 37.6(b) (1998).

104/ 83 FERC - 61,097 (1998), further order, 83 FERC - 61,282 (1998).

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transmission service that was not available to competitors. As the Commission explained in finding a violation of Order No. 888:

Avista received a preference from Washington Water Power that was not available to any of its competitors. Simply stated, Avista's customer was deprived of the benefit of choosing among all potential power suppliers.

The case of Wisconsin Public Power Inc. SYSTEM v. Wisconsin Public Service Corporation, et al. (Wisconsin Public) 105/ demonstrates both the difficulties and suspicions of discrimination resulting from when a transmission customer requests transmission service from an integrated utility. WPPI was seeking additional network transmission service from both Wisconsin Public Service Corporation (WPSC) and Wisconsin Power &

Light Company (WP&L). In both cases, the requests were denied because of claims that the transmission owners were using all available capacity. In the case of WPSC, the Commission initially found that the utility had not properly reserved capacity for its merchant function and directed that it recompute its ATC without that reservation. After WPSC submitted additional documentation, the Commission accepted some of WPSC's merchant priority, but still found that it had violated its obligations under its tariff, and that its actions raised serious concerns about the functional separation of its staff. With respect to WP&L, the Commission found that it provided unduly preferential treatment to its merchant function, had been

105/ 83 FERC - 61,198 (1998), order on reh'g, 84 FERC - 61,120 (1998).

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changing its ATC without posting those changes on OASIS, and had been computing ATC where none exists. 106/

The Wisconsin Public cases demonstrate, if nothing else, the difficulty of achieving, and enforcing, functional separation of a utility's transmission and merchant functions. These types of cases require substantial Commission investigative and adjudicative resources, not to mention the resources of the parties involved. The Commission recognized in Wisconsin Public how RTOs could help eliminate these problems. The Commission stated:

As we recently explained in Louisville Gas & Electric Company, et al., 82 FERC - 61,308 at 62,222 & n.39 (1998), a properly structured ISO, or other transmission entity can eliminate the potential for the strategic use of a transmission owner's priority to use internal system capacity for native load. The ISO or other transmission entity can also eliminate the

incentive to engage in strategic curtailments of generation that a transmission operator's generation service competitors own and can remove any incentive to game OASIS operations. This will promote generation entry and competition, since a properly structured ISO or other transmission entity would have no economic stake in favoring certain market participants over others and potential entrants would likely see the transmission market as fair. An ISO, therefore, could help to solve the problems established in the instant complaints. [107/]

The case of Morgan Stanley Capital Group v. Illinois Power Company 108/ also demonstrated problems associated with ATC and a transmission provider's use of its system for its own purposes.

106/ 83 FERC at 61,860.

107/ Id. at 61,859.

108/ 83 FERC - 61,204, order granting clarification and dismissing reh'g, 83 FERC - 61,299 (1998).

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Morgan Stanley complained that Illinois Power failed to accurately post ATC, failed to award transmission capacity in a non-discriminatory manner, and allocated transmission in favor of its own bulk power marketing arm. Illinois Power admitted the ATC posting error, and the Commission found other violations of its tariff in responding to Morgan Stanley's request for service. Although the Commission initially also found that Illinois Power did not designate its own network resources in the same manner as network customers are required to designate them, Illinois Power disputed this, and after showing that its network resource was legitimate, the Commission dismissed its rehearing as moot. Nevertheless, this case demonstrates that a combination of ATC errors and unclear procedures feeds the mistrust in the marketplace with respect to a transmission owner's ability to use its system to favor itself.

We also have currently pending before us several formal

complaints alleging that a transmission provider is improperly keeping its transmission capability for its merchant function. In one case, a power marketer asserts that a transmission provider has refused service over an interconnection on the basis that the transmission provider needs all the ATC for native load. The marketer has alleged that the transmission provider's claims of reliability concerns are a mask to block competitors from importing power into the transmission provider's system when the

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transmission provider has higher cost generation available. 109/ In another recent formal complaint filing, it is alleged that a transmission provider denied transmission service and then improperly provided it to its merchant group. 110/

Aside from these cases involving formal complaints, there have been a number of other complaints with respect to ATC calculation. For example, our enforcement staff receives hotline complaints concerning ATC posting problems. The enforcement staff has confirmed a number of such ATC errors. In most cases, these errors were corrected within several months of having them pointed out, and the utilities often offered explanations based on hardware or software problems. We make no judgment whether such identified errors were an intentional attempt to thwart competition; however, they had the potential to have that effect.

In July 1997, the Commission held a technical conference concerning how well the OASIS system was working. Several commenters suggested that erroneous ATC calculation and posting was hurting competition. A representative from Electric Clearinghouse told us that there is a pervasive problem of incorrect or stale information on the OASIS sites, and that

"competition is blocked when this occurs." That same representative stated that very little firm ATC is offered due to

109/ Aquila Power Corporation v. Entergy Services, Inc., Docket No. EL98-36-000, Amended and Restated Complaint at 6 (filed June 23, 1998).

110/ Arizona Public Service Company v. Idaho Power Company, Docket No. EL99-44-000 (filed March 3, 1999).

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the utility's caution or strategy, and that some providers will not offer firm ATC because they do not want to curtail their own transactions. 111/ At the same conference, a representative from the American Public Power Association told us:

ATC is often understated and inconsistently posted on adjacent OASIS nodes. Inter-regional coordination is lacking. This fact limits the usefulness of the system for commercial purposes. 112/

In March 1998, a group referring to themselves as power industry stakeholders 113/ filed a petition for rulemaking on electric power industry structure. 114/ Although we are not addressing here the specific relief they are requesting in that Petition, the Petition does contain a number of fairly specific allegations indicating problems in the market. For example, the Petition asserts:

Concepts such as ATC and the OASIS have become vehicles for obstructing and curtailing, rather than accommodating, transactions. Incumbents are able to deny new entrants access to critical, accurate information across control areas. This can take the form of out-of-date or incorrect postings of ATC or, in some instances, intentional withholding of actual ATC. Regardless of the cause, more transmission capability

111/ Open Access Same Time Information Technical Conference, Docket No. RM95-9-003 (July 18, 1997), transcript at 23.

112/ Id. at 28.

113/ The group consists of a number of power marketers and users,

including, for example, Coalition for a Competitive Electric Market, ELCON, Electric Clearinghouse, Inc., and Enron Power Marketing, Inc.

114/ Petition for a Rulemaking on Electric Power Industry Structure and Commercial Practices and Motion to Clarify or Reconsider Certain Open-Access Commercial Practices, Docket No. RM98-5-000.

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is physically available than is being released for sale. [115/]

The Petition alleges the existence of "ATC exclusions, inaccuracies and misuses that deny new entrants the ability to evaluate market opportunities, and therefore, prevent reasonable access to the grid." 116/ The Petition cited specific instances of inconsistent ATC calculations for the same interconnection by the systems on either side; an OASIS showing ATC that was not in fact made available for scheduling; and an OASIS showing no ATC but the utility then using that path for a sale. 117/

EPSA, the trade association representing certain power suppliers, filed comments in support of the Petition and echoed many of the same experiences:

EPSA agrees that this discriminatory conduct persists principally because of the continuing incentives and opportunity for transmission owning public utilities covertly to discriminate against other transmission customers, by, for example, minimizing reported available transmission capability (ATC), delaying or inaccurately posting ATC on the OASIS, or otherwise manipulating market operations. 118/

EPSA further stated that, "The manipulation of ATC -- whether with the intent to deceive or as the result of poor OASIS

115/ Petition at 7-8.

116/ Id. at 15.

117/ Id. at Appendix D.

118/ EPSA Comments, Docket No. RM98-5-000, at 2 (filed September 21, 1998).

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management -- is a serious entrance barrier for competitive power suppliers." 119/

At our regional ISO conference in New Orleans, we were told by a representative from the Public Service Commission of Yazoo City, Mississippi, of a specific instance of what it considered to be discriminatory treatment:

Yazoo City, as a participant, has experienced first hand an individual [transmission] owner's continued ability to use its ownership and control [of] transmission to disadvantage competitors, notwithstanding Order 888's mandate of non-discriminatory transmission access.

The representative then went on to describe an instance where a marketer could not complete a 10 MW power sale because of transmission restrictions, but then the transmission provider offered to supply the capacity itself. 120/ The representative concluded that Orders Nos. 888 and 889 have not fully eliminated undue discrimination and this will not be achieved "as long as transmission owners are allowed to fence in transmission-dependent utilities and others located on their transmission system to enhance the value of their generation assets at increased cost to competitors."

119/ Id. at 8.

120/ Comments of Robert D. Priest on behalf of the Public Service Commission of Yazoo City, Regional ISO Conference (New Orleans), Transcript at 201-03. After hearing this assertion, Entergy Services, Inc. filed a letter in which it stated that it was unable to identify any Entergy-imposed restrictions that would have prevented the power purchase. See Letter in Docket No. PL98-5-000 (filed July 2, 1998).

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One specific area where there have been allegations that transmission owners are using ATC to favor their own merchant operations concerns the calculation and use of Capacity Benefit Margin (CBM). Although there is no single accepted definition, CBM is generally used to mean an amount of transmission transfer capability reserved by load serving entities to ensure access to generation from interconnected systems to meet their generation reliability requirements. 121/ Some utilities subtract CBM from their total transmission capability to arrive at ATC. There is no uniform method for calculating CBM. The ability to withhold CBM to ensure reliability not only confers a reliability advantage for the transmission provider, but may give the transmission provider the opportunity to selectively withhold ATC over paths and interconnections useful to its generation competitors.

The use of CBM is an issue that is currently being considered in several cases pending before the Commission. 122/ For example, with respect to the formation of the PJM ISO, the Commission noted that it was not demonstrated that the PJM Pool's historical practice of withholding firm transmission interface capacity as a substitute for installed generating reserves is

121/ NERC, Available Transfer Capability Definitions and Determinations (June 1996), at 14.

122/ The Commission recently noticed a technical conference, to be held May 20 and 21, 1999, on the issue of CBM. See Capacity Benefit Margin in Computing Available Transmission Capacity, Notice of Technical Conference, Docket No. EL99-46-000.

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consistent with our open access policies. The Commission observed that the load serving entities that own generating capacity within the PJM control area appeared to benefit from this practice as suppliers in addition to benefitting as load serving entities. 123/ The Commission set the issue for further briefing and it remains pending. In another pending proceeding concerning WPSC's CBM calculation, two of the parties assert that CBM "removes firm transmission capacity from open access offerings, thereby raising an unnecessary and unjustifiable barrier to competition," and "fosters discrimination by giving merchant functions gatekeeping control over CBM-related transmission access and by giving individual interface transmission owners broad discretion over where and how much CBM is withdrawn from ATC." 124/ In the same proceeding, Electric Clearinghouse, Inc. asserts that "the CBM set-aside embodies undue discrimination in access to the monopoly owned transmission wires because it ensures certain users a priority over the reserved transmission interface capacity to the exclusion of other firm transmission users." 125/

As we stated above, we fully recognize that these are assertions made in pending cases in which we have not yet made

123/ PJM, 81 FERC at 62,277.

124/ Protest of Madison Gas & Electric Company and Wisconsin Public Power Inc., Docket No. EL98-2-003, at 3 (filed August 21, 1998).

125/ Protest of Electric Clearinghouse, Inc., Docket No. EL98-2-003, at 3 (filed August 21, 1998).

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findings. They are referenced here as illustrative of the suspicions in the industry of continuing opportunities for discriminatory treatment that may disadvantage certain competitors where generation owners continue to operate transmission.

b. Standards of Conduct Violations

To ensure the functional separation of a transmission provider's transmission and merchant functions, the Commission adopted standards of conduct that prohibit the transmission provider's marketing interest employees from having any more access to transmission system information than is available on OASIS, and requires the transmission provider's transmission employees to provide impartial service to all transmission customers. 126/ If a transmission provider's marketing interests have favorable access to transmission system information or receive more favorable treatment of their transmission requests, this obviously creates a disadvantage for marketing competitors.

In spite of the standards of conduct, there continues to be a perception by many market participants that the transmission provider's marketing and transmission interests are not fully functionally separated. In cases in which the Commission has issued formal orders, we have found serious concerns with functional separation and improper information sharing with

126/ See 18 C.F.R. Part 37 (1998).

respect to at least four public utilities. 127/ In addition, our enforcement staff receives numerous telephone calls about

standards of conduct issues; some of these are simply questions about what is permissible conduct, but others are complaints of a violation. In a number of cases, our staff has verified non-compliance with the standards of conduct. 128/

The petitioners for rulemaking in Docket No. RM98-5-000 allege that there are common instances of "unauthorized exchanges of competitively valuable information on reservations and schedules between transmission system operators and their own or affiliated merchant operation employees." 129/ They also cite OASIS data showing an instance where a transmission provider quickly confirmed requests for firm transmission service by an affiliate, while service requests from independent marketers took much longer to approve.

127/ See Wisconsin Public, 83 FERC at 61,855, 61,860 (WPSC's actions raised "serious concerns" as to functional separation; WP&L's actions demonstrated that it provided unduly preferential treatment to its merchant function); Washington Water Power, 83 FERC at 61,463 (utility found to have violated standards in connection with its marketing affiliate); Utah Associated Municipal Power Systems v. PacifiCorp, 87 FERC - 61,044 (1999) (finding that PacifiCorp had failed to maintain functional separation between merchant and transmission functions).

128/ See, e.g., Communications of Market Information Between Affiliates, Docket No. IN99-2-000, 87 FERC - 61,012 (1999) (Commission issued declaratory order based on hotline complaint clarifying that it is an undue preference in violation of section 205 for a public utility to tell an affiliate to look for a marketing offer prior to posting the offer publicly).

129/ Petition at 15.

We believe that some of the identified standards of conduct violations are transitional issues resulting from a new way of doing business, and we acknowledge that many utilities are making

good-faith efforts to properly implement standards of conduct. However, we also believe that there is great potential for standards of conduct violations that will never even be reported or detected. The use of standards of conduct is not the optimal procedure for ensuring a fair marketplace, and may be unnecessary in a properly structured and operated market.

We are increasingly concerned about the extensive regulatory oversight and administrative burdens that have resulted from policing compliance with standards of conduct. We have discussed above some of the cases in which the Commission had to address potential violations of the standards of conduct. In addition, transmission providers were required to file their standards of conduct for Commission review. In response, the Commission initially issued 8 orders concerning 126 public utilities' standards of conduct. 130/ Generally, these orders required the utilities to revise their standards of conduct and post, on the OASIS, organizational charts and job descriptions for transmission/reliability and wholesale merchant function employees. The Commission subsequently issued 13 more orders requiring the public utilities to further revise their standards

130/ The citations for these orders are: 81 FERC - 61,332 (1997), 81 FERC - 61,338 (1997), 81 FERC - 61,339 (1997), 82 FERC - 61,028 (1998), 82 FERC - 61,073 (1998), 82 FERC - 61,132 (1998), 82 FERC - 61,193 (1998) and 82 FERC - 61,246 (1998).

of conduct and/or organizational charts and job descriptions.

131/ The Commission has also issued three orders on rehearing of the standards of conduct orders. 132/

As of April 1, 1999, 51 utilities' standards of conduct and organizational charts and job descriptions have been accepted and

75 utilities' standards of conduct and/or organizational charts and job descriptions have not been accepted and are pending review. This is an indication of the significant regulatory effort required by both public utilities and the Commission to make the standards of conduct approach workable -- a regulatory effort that could be greatly reduced through more distinct organizational separation.

c. Line Loading Relief and Congestion Management

A number of complaints have been made alleging that transmission providers are acting in a discriminatory manner in implementing line loading relief, which is required when a transmission line is in danger of being overloaded. Such complaints allege that the transmission providers are not providing redispatch service, are favoring their own transactions, and are failing to follow curtailment priorities

131/ The citations for these orders are: 84 FERC - 61,131 (1998), 84 FERC - 61,255 (1998), 84 FERC - 61,320 (1998), 84 FERC - 61,327 (1998), 85 FERC - 61,068 (1998), 85 FERC - 61,145 (1998), 85 FERC - 61,227 (1998), 85 FERC - 61,390 (1998), 86 FERC - 61,044 (1999), 86 FERC - 61,079 (1999), 86 FERC - 61,146 (1999), 86 FERC - 61,185 (1999) and 86 FERC - 61,246 (1999).

132/ The citations for these orders are: 82 FERC - 61,131 (1998), 83 FERC - 61,357 (1998) and 85 FERC - 61,382 (1998).

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established in Order No. 888. 133/ All of these actions by transmission providers may provide subtle competitive advantages in wholesale markets. For example, for those purchasers for whom service reliability is particularly important, purchasing power from a transmission provider may be viewed as offering enhanced reliability.

Like the issue of calculating ATC, the fact that curtailment

of service in times of congestion is in the control of the transmission provider, who also has power transactions on the affected transmission lines, leads to suspicions of discriminatory behavior that are difficult to verify. For example, a representative of Blue Ridge Power Agency told us at one of our ISO conferences:

There simply is no shaking the notion that integrated generation and transmission-owning utilities have strategic and competitive interests to consider when addressing transmission constraints. Functional unbundling and enforcement of [standard of] conduct standards require herculean policing efforts, and they are not practical. [134/]

Likewise, we were told at another ISO conference that operators with reliability responsibility possess actual controlling

133/ We set for evidentiary hearing a formal complaint by Wisconsin Electric Power Company making these types of allegations. Wisconsin Electric Power Company v. Northern States Power Company (Minnesota) and Northern States Power Company (Wisconsin), 86 FERC - 61,121 (1999). The parties subsequently filed a settlement agreement.

134/ Regional ISO Conference (Richmond), Transcript at 20.

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authority over transactions, "thereby giving them a tremendous advantage over competitors." 135/

d. OASIS Sites That are Difficult to Use

Aside from the problems alleged with respect to posting inaccurate ATC calculations on OASIS sites, there have been complaints that some transmission providers have implemented their OASIS sites as a tool to impede competition rather than as it was intended -- as a tool to foster competition. It has been alleged that transmission providers have no incentive to make the

sites easier to use, because it is primarily the transmission providers' marketing competitors who would benefit from better OASIS sites. 136/ The petitioners in Docket No. RM98-5-000 asserted:

Indeed, to gain a competitive advantage over those who are dependent on the timeliness and accuracy of OASIS, vertically integrated transmission owners have an incentive to make OASIS as slow and uninformative as possible. [137/]

Similarly, EPSA has told us that "the present transmission regime gives existing transmission-distribution utilities an inherent advantage to reserve capacity for their own native load use, and

135/ Comments of Marvin Carraway on behalf of Clarksdale Public Utilities Commission, Regional ISO Conference (Kansas City), Transcript at 107.

136/ See, e.g., Comments of representative from Enron Power Marketing speaking at Commission's July 1997 OASIS Technical Conference, transcript at 43-44.

137/ Petition at 37.

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provides them with no incentive to maintain a properly functioning OASIS." 138/

As we stated above with respect to ATC calculation, we are not in a position to make a judgment that transmission providers are deliberately making their OASIS sites difficult to use in order to disadvantage marketing competitors. In fact, we are aware that some OASIS sites are well run and engender few complaints from users, and that there may be legitimate technical and transitional difficulties responsible for some of the problems complained of. However, this is another example of the situation where market participants perceive discriminatory

intent, whether or not one exists, because of the apparent opportunity and incentive to discriminate.

e. Other Issues Related to Functional Unbundling and Dealing with Remaining Undue Discrimination

While the Commission here has not attempted to provide an exhaustive compilation of the remaining opportunities for discriminatory practices by transmission operators who are also in the power business, 139/ it believes that the potential for such problems increases in a competitive environment unless the market can be made structurally efficient and transparent with respect to information, and equitable in its treatment of competing participants. We invite public comments on the extent

138/ EPSA Comments, Docket No. RM98-5-000, at 8 (filed September 21, 1998).

139/ There have been other violations alleged. For example, many relate to pricing and discounting.

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to which there remains undue discrimination in transmission services, and if it remains, in what forms. Those comments should address both the areas of alleged discrimination we have discussed above, as well as any other areas that commenters may have experienced. In addition, we are asking for comments about what remedies we should impose in an effort to eliminate any remaining discriminatory conduct. For example, should we require mandatory participation in an RTO, or are there other possible remedies? Could a performance-based rate system be designed to realign economic interests to remove the motive for discrimination?

One thing that seems apparent is that a system that attempts to control behavior that is motivated by economic self-interest

through the use of standards of conduct will require constant and extensive policing. This kind of regulation goes beyond traditional price regulation and forces us to regulate very detailed aspects of internal company policy and communication. For functional unbundling to be successful, we have to be concerned, in some sense, about "who spoke to whom" in the company cafeteria. Functional unbundling does not necessarily promote light-handed regulation. It also undoubtedly imposes a cost on those entities that have to comply with the standards of conduct who face additional training and rules that create rigidities in their internal management activities.

It appears, based upon our experience thus far, that no matter how detailed the standards of conduct and how intensive

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our enforcement, competitors will continue to be suspicious that the wall between transmission operations and power sales is being breached in subtle and hard to detect ways. The perception that many entities that operate the transmission system cannot be trusted is not a good foundation on which to build a competitive power market. It creates needless uncertainty and risk for new investments in generation.

In section III.B below, we will address how the use of independent RTOs can help eliminate the opportunity for unduly discriminatory practices by transmission providers, restore the trust among competitors that all are playing by the same rules, and reduce the need for overly intrusive regulatory oversight.

B. Benefits That Regional Transmission Organizations Can Offer

In the preceding sections, we have set forth what we consider to be at least some of the remaining transmission

related impediments to full competition in the electricity markets. These impediments include engineering and economic inefficiencies in the operation and structure of the existing transmission grid that inhibit the development of broad-based markets for electric power, and remaining opportunities for discriminatory practices by transmission owners with power marketing interests.

We now believe that the establishment of properly structured RTOs throughout the U.S. can effectively remove the remaining impediments to competition in the power markets. As discussed

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elsewhere in this NOPR, a properly structured RTO will be an entity that is independent from all generation and power marketing interests, and has the exclusive responsibility for grid operations, short-term reliability, and transmission service within a region. Such an entity would not only confer benefits related to removing impediments to competition, but would also enhance reliability and allow for less intrusive government regulation of transmission providers.

We note that the Commission's recognition of the benefits of regional transmission organizations is not new. The Commission has encouraged the industry to create such institutions for more than six years. In 1993, the Commission issued a policy statement encouraging the formation of RTGs, which were defined as a voluntary organizations of transmission owners, users, and other entities interested in coordinating transmission planning (and expansion), operation and use on a regional and inter-regional basis. 140/ The Commission summarized the benefits of such entities as enabling the market for electric power to operate in a more competitive, and thus more efficient manner;

providing coordinated regional planning of the transmission system to assure that system capabilities are adequate to meet system demands; decreasing the delays that are inherent in the regulatory process, resulting in a more market-responsive

140/ Policy Statement Regarding Regional Transmission Groups, FERC Stats. & Regs. - 30,976 at 30,870 and n.4 (1993) (RTG Policy Statement).

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industry; and resolving technical transmission issues (e.g., loop flow). 141/

One year later, the Commission issued a transmission pricing policy statement which encouraged RTGs to address transmission pricing and offered to provide more latitude to RTGs than to individual utilities for innovative pricing proposals, recognizing that issues such as loop flow required a regional approach. 142/ Then, two years after that in Order No. 888, the Commission encouraged the industry to consider ISOs, and gave specific guidance on characteristics and functions in the form of 11 principles.

The Commission has not been alone in recognizing the benefits of RTOs. In fact, there is surprising unanimity about the benefits of regional transmission solutions to grid management. For example, the Edison Electric Institute adopted a resolution that "recognizes the potential benefits of voluntary grid regionalization in addressing pancaked transmission rates, congestion management and reliability, transmission planning, and market power..." and supported "flexible, voluntary, market-based

141/ RTG Policy Statement, FERC Stats. & Regs. at 30,871.

142/ Inquiry Concerning the Commission's Pricing Policy for Transmission Services Provided by Public Utilities Under the Federal Power Act, 59 Fed. Reg. 55,031 (November 3, 1994), FERC Stats. & Regs., Regulations Preambles - 31,005, at 31,140, 31,145 (Transmission Pricing Policy Statement).

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approaches" toward grid regionalization. 143/ The American Public Power Association has stated that "mandating RTOs will prevent further inequities in the provision of wholesale transmission service, provide guidance to the states, advance regional solutions to reliability issues to head off future crisis situations such as the 1998 Midwest Price Spikes, and partially mitigate serious market power concerns that have arisen due to the high number of recent mergers in the electric utility industry." 144/ The National Energy Marketers Association urges the Commission to "take bold steps necessary to create larger regional transmission organizations (RTOs) and to force maximum participation into (sic) these organizations." 145/ Other industry groups representing very different interests have reached similar conclusions. 146/

143/ Edison Electric Institute, Resolution Regarding Grid Regionalization, adopted by the Board of Directors, January 7, 1999.

144/ Motion of American Public Power Association For Leave To Lodge, Docket No. RM99-2-000, filed March 17, 1999, at 2.

145/ NEA, "National Guidelines For Restructuring The Electric Generation, Transmission and Distribution Industries," January 1999, at 6.

146/ The Electric Power Supply Association recommends that "ISOs Must be Regional in Scope." (EPSA Position Statement on Independent System Operators, January 1997, at 1.) The Electricity Consumers Resource Council (ELCON) states that "a competitive electricity marketplace requires the formation of large, regional independent system operators." (ELCON, "Independent System Operators," Profiles On

Electricity Issues, No. 18, March 1997, at 2.

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States are also recognizing the need for regional approaches to grid operation. At least five states have passed laws or issued regulations requiring transmission owning utilities in their states to participate in regional transmission entities. 147/ Other state regulators have highly praised the new regional transmission entities that are functioning in their regions. 148/

While these industry groups and state regulators may not agree on the form of such regional organizations and how aggressive the Commission should be in encouraging their development, they do generally agree that such entities would provide substantial benefits.

We note, additionally, that this same conclusion has also been reached in other countries. In almost every country that has chosen to introduce competition in its power sector, a single regional or national grid management organization has or will be created as the necessary platform for achieving fair and efficient bulk power competition. 149/

147/ Laws to encourage participation in regional ISOs or transcos have been passed in Wisconsin, Illinois, Virginia, and Arkansas. Regulations to encourage this outcome have been issued by the Nevada commission.

148/ See, e.g., Comments of Commissioner Marlene Johnson, RTO Conference (District of Columbia), transcript at 23-24; Commissioner Gerald Thorpe (Maryland), transcript at 39-40; President Herbert Tate (New Jersey), transcript at 47-50; and Commissioner Nora Mead Brownell (Pennsylvania), transcript at 54.

149/ Government of Mexico, Secretaria de Energia, Policy proposal for structural reform of the Mexican electricity sector, (continued...)

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In the following discussion, we address the significant benefits of establishing RTOs.

1. An RTO Would Improve Efficiencies in the Management of the Transmission Grid

As discussed in section III.A above, numerous inefficiencies in the current operation and structure of the transmission grid may be impeding full competition. Establishing RTOs could help remove most, if not all, of those inefficiencies in a number of ways.

First, an RTO would improve efficiency through regional transmission pricing. The Commission has long recognized that transmission pricing reform is most effectively accomplished on a regional basis. 150/ An RTO would have the geographic scope

149/ (...continued)

1999; World Bank, Reforms and Private Participation in the Power Sector of Selected Latin American and Caribbean and Industrialized Countries, 1994; National Regulatory Research Institute, Electric Power industry Restructuring in Australia: Lessons From Down Under, Occasional Paper #20, Ohio State University, January 1997; World Bank (Industry and Energy Department), Central and Eastern Europe: Power Sector Reform in Selected Countries 1997; Ontario (Canada) Market Design Committee, The Fourth and Final Report, January, 1999; Alberta (Canada) Department of Energy, Moving To Competition, A Guide to Alberta's New Electricity Structure, 1994; Jan Moen, A Common Electricity Market in Norway and Sweden: Prerequisites, Development and Results So Far, Norwegian Water Resources and Energy Administration, May, 1996; National Grid Company, Grid System Management, Coventry, England; and J. Culy, E. Read and B. Wright, "The Evolution of New Zealand's Electricity Supply Structure," in International Comparisons of Electricity Regulation, Gilbert and Kahn, editors, Cambridge University Press, 1996.

150/ Transmission Pricing Policy Statement, FERC Stats. & Regs. at 31,145.

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needed to eliminate pancaked transmission rates within its

region. This would broaden the generation market and could result in more potential suppliers and less concentrated generation markets, thereby fostering more competitive markets and lower prices to consumers.

Second, regional scope would improve congestion management on the grid. An RTO would improve the way congestion is managed over a large area, thus expanding the number of potential transactions over existing facilities while reducing the number of curtailments.

The scheduling of power by multiple utilities over a regional grid can lead to unexpected overloads on constrained facilities. This can be a serious barrier to competitive power trading because some power sale transactions may have to be curtailed. With a regional scope, an RTO would be better able to manage congestion. An RTO would be in a better position to prevent congestion or control it through application of appropriate regionwide congestion pricing to ration use of the grid if necessary. An RTO would also more readily identify schedules that could lead to congestion, and relieve congestion through regional redispatch authority. A pricing approach to capacity allocation would improve efficiency by ensuring that the most highly valued transactions remain on the grid and possibly result in less curtailment than under the present approach.

Third, an RTO would improve efficiency by providing more accurate estimates of ATC than those currently provided by individual systems. Conditions on all parts of the regional grid affect ATC on individual utility systems. Factors such as load estimates, generation and transmission outages, generation dispatch orders and transactions on individual systems can affect

the determination of ATC. An individual utility may not have complete or timely information regarding such factors and may apply assumptions and criteria in its ATC estimates that are different from those of neighboring transmission operators, leading to wide variations in ATC values for the same transmission path. The information needed may be considered confidential, and market participants would be more willing to share it with an independent body.

An RTO would produce better ATC estimates because it would have access to complete regional usage information, would have current information because the RTO will be the security coordinator as well as the OASIS site administrator, and would calculate ATC values on a consistent region-wide basis using a regional flow model. An RTO would also resolve most, and perhaps all, of the complaints of inaccurate ATC postings. Problems are likely to remain only to the extent that scheduling reservations across several RTOs continue to be made on a contract path basis.

Fourth, an RTO also would more effectively manage parallel path flows. With an RTO in place, the geographic scope for

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scheduling and pricing transmission would be widened and parallel path flows would be internalized within the RTO. This should result in more accurate ATC calculations, improve reliability, and, with appropriate transmission pricing, eliminate or reduce disputes among transmission owners regarding uncompensated uses of facilities.

Fifth, an RTO would promote more efficient planning for transmission or generation investments needed to increase transmission capacity. One advantage of an RTO that is helpful

in planning is that it will be able to see the "big picture."  
Planning and expansion of grid facilities will no longer be done on a piecemeal basis. An RTO would help identify the best place on the grid to locate new generation. 151/ An RTO also will have more options available to it because of its size and configuration. It has the potential to select and implement the most efficient investment or operating option within the region for relieving a bottleneck. This is in marked contrast to the current situation in many regions where individual transmission owners are generally limited to investment options in their particular service areas even though better (i.e., less costly) options may be available elsewhere in the region.

151/ One of the benefits of the ERCOT (Texas) ISO has been, due to the ISO's comprehensive view of the grid, the ability to identify the most effective spots on the grid to locate new generation facilities. See Chairman Patrick Wood (Texas), transcript at 205-06.

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Sixth, an RTO would increase coordination between separate state regulatory agencies by providing a single point of focus for transmission expansion review, possibly even encouraging multi-state agreements to review and approve new transmission facilities. 152/ As RTOs develop viable regional planning processes, there may be a growing willingness on the part of individual states to accommodate regional regulatory review on either a formal or informal basis. 153/

Seventh, transactions costs would also be reduced with an RTO in place. For example, the consolidation of transmission control operations would cut general and administrative costs over the long term. In addition, an RTO would administer a

single regional transmission tariff, thereby permitting "one stop shopping" for regional transmission service and resulting in simpler and more efficient procedures for transmission users to transmit power over greater distances.

Eighth, through regional standardization of transmission services and the terms and conditions under which they are

152/ The Commission recognizes that there may be legal impediments to such a shift. For example, most state siting laws typically require that the proposed facility must be assessed in terms of its benefits for the state rather than the region. See Ileana Elsa Garcia, "State Electric Facility Siting Practices," background paper prepared for the Harvard Electric Policy Group, April 10, 1997.

153/ To encourage this movement, we propose requiring that the RTO's planning and expansion process must "accommodate efforts by state regulatory commissions to create multi-state agreements to review and approve new transmission facilities." See section III.E.

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transacted, an RTO would facilitate establishing transmission rights and the "tradeability" of transmission rights. The early experience suggests that independent regional transmission organizations are in the best position to establish well-defined rights to the use of the grid. 154/ Such rights are essential to establishing congestion markets. Clear rights are also needed for the ability to trade transmission rights between customers that place different values on capacity. Such trade helps ensure an efficient allocation of current capacity and helps ensure that new capacity is built only when and where necessary. 155/

Ninth, an RTO would facilitate the success of state retail access programs by providing greater confidence in the markets and a larger regional market with access to more potential suppliers.

## 2. An RTO Would Improve Grid Reliability

With the improved transmission access that has resulted from industry compliance with Order No. 888, the volume of wholesale electricity transactions has significantly increased along with the number of market participants. This has led to industry concerns that traditional reliability rules may not guarantee that the bulk power system remains secure. Many transmission

154/ See Central Hudson Gas & Electric Corporation, et al., 86 FERC - 61,062 at 61,228-33 (1999); PJM, 81 FERC at 62,240.

155/ Capacity Reservation Open-Access Transmission Tariffs, Notice of Proposed Rulemaking, 61 Fed. Reg. 21847 (May 10, 1996), FERC Stats. & Regs. - 32,519 (CRT NOPR).

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owners in a region make independent decisions about use of a common regional transmission grid. A reliability problem on one utility's transmission system may threaten the reliability of its neighbor's system. A regional body that operates the regional grid and enforces reliability rules for the entire region could prove helpful to current efforts and should be considered. An RTO would enhance reliability by (1) operating the system for a large region, (2) ensuring coordination during system emergencies and restorations, (3) conducting comprehensive and objective reliability studies, (4) coordinating generation and transmission outage schedules, and (5) sharing of ancillary services responsibilities.

3. An RTO Would Remove Opportunities for Discriminatory Transmission Practices

In an RTO, the control of transmission operation is cleanly separated from power market participants. An RTO would have no financial interests in any power market participant, and no power market participant would be able to control an RTO. This separation will eliminate the economic incentive and ability for

the transmission provider to act in a way that favors or disfavors any market participant in the provision of transmission service. 156/ Accordingly, ATC calculations can be made in an unquestionably objective manner, OASIS sites can be equally

156/ Appropriate price regulation of RTOs would still be needed.

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relied upon by all transmission users, and line loading relief should be free from preferences for certain market participants.

In addition, the separation of transmission operation from power marketing activities also would reduce opportunities for intentional or inadvertent communication of commercially valuable information from the transmission provider to any market participant, and should eliminate any advantage that market participants may now have with respect to arranging transmission service with an affiliated transmission provider.

Finally, removing the opportunity for discriminatory transmission practices will help ensure the openness and integrity of the commercial process. We have been told repeatedly of the importance of transparency and fairness in the relationship between transmission users and transmission providers. This was a prominent topic at our ISO conferences last year. Fairness, impartiality and market confidence are also important to reliability. If the operator orders certain actions to be taken for system reliability purposes that might harm the interests of some users, those users must know that the action being ordered has been made fairly and with only technical factors in mind.

One important benefit of an RTO is that it could help eliminate the suspicions about, or remaining actual discriminatory practices by, grid operators. The DOE Reliability Task Force concluded that regional reliability entities such as

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RTOs must be "truly independent of commercial interests so that their reliability actions are -- and are seen to be -- unbiased and untainted..." [emphasis added] 157/ The same conclusion was reached by the blue-ribbon Electric Reliability Panel convened by NERC to recommend reforms in the current U.S. reliability system. The panel concluded that: "(t)o dispel suspicions that the system operator favors one participant over another..., the operator must be independent from market participants." 158/

#### 4. An RTO Would Result in Improved Market Performance

By improving efficiencies in the management of the grid, improving grid reliability, and removing any remaining opportunities for discriminatory transmission practices, the widespread development of RTOs would also improve the performance of electricity markets in several ways and consequently lower prices to the Nation's electricity consumers.

The RTO benefits discussed so far in this section would result in improving the competitiveness of wholesale electricity markets. To the extent that RTOs foster fully competitive wholesale markets, the incentives to operate generating plants efficiently are bolstered. Suppliers will continuously seek to

157/ See Secretary of Energy Advisory Board, U.S. Department of Energy, "Maintaining Reliability in a Competitive U.S. Electricity Industry," September 29, 1998 at xv.

158/ Electric Reliability Panel of the North American Reliability Council, "Reliable Power: Renewing the North American Electric Reliability Oversight System," December 1997, at

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avoid being made uncompetitive by rivals. We have now had close to two decades of experience with generating plants being operated in at least partially competitive markets. Non-traditional generators have had the opportunity to realize increased profits through reduced costs and improved operating performance. For years, the growing presence of independent power generators has led to highly efficient new capacity coming on line. The evidence is clear that market incentives can lead to highly efficient plant operations.

The incentives for more efficient plant operation can also affect existing generation facilities. Especially noteworthy is the recent experience that indicates improvements in the generation sector in regions with RTOs. Regions which have ISOs in place are undergoing dramatic shifts in the ownership of generating facilities. Large-scale divestiture and high levels of new entry in California and the Northeast are changing the ownership structure of these regions' generators. Availability of customers, and the presence of competing suppliers, are creating the incentives for better-performing plants. All plants are coming under pressure to improve their availabilities and operating efficiencies. Individual firms have made strategic decisions to seek to become more competitive, or to prepare themselves for future competition. 159/

159/ Examples include: Virginia Power, which has made more than \$1 billion in capital improvements and other investments  
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By improving competition, RTOs will also reduce the potential for market power abuse. As discussed earlier, eliminating pancaked transmission prices will expand the scope of markets and bring more players into the markets. 160/ By

159/ (...continued)

(without raising rates) between 1992 and 1998, including \$921 million in generating plant and approximately \$125 million in transmission line upgrades. See Virginia Power, Virginia Power Statement On SCC Report, May 24, 1998. This document is available on Virginia Power's website at <http://www.vapower.com/news/archive/releases980324.html>; Entergy, which has achieved high performance at its nuclear units in terms of capacity factors, outage times and refueling periods, See Entergy Operation Services, Inc., Entergy Nuclear Units Have Outstanding Year as Entergy Forges Ahead with National Nuclear Company, January 26, 1999, press release. This document is available on Entergy's website at <http://www.entergy.com/news/1999/nr012699.htm>; New York Power Authority, which has lowered operating and maintenance budgets, refinanced debt, and invested \$181 million in capital improvements. See New York Power Authority, NYPA Exceeds Performance Goals in 1998, February 12, 1999, press release. This document is available on NYPA's website at <http://www.nypa.gov/press/0212a.htm>; Green Mountain Power, which reduced operations and maintenance expenditures by 50% between 1988 and 1995. See Green Mountain Power Corporation, Sales and Expenditures, 1995 Annual Report. This document is available on Green Mountain Power Corporation's website at <http://www.gmpvt.com/annrpt95/salesex2.htm>; and the Tennessee Valley Authority, which realized cost savings of 22% on fossil-fueled and hydroelectric plant outage projects which were subject to a continuous improvement process. See Hans E. Picard and C. Robert Seay, Jr., Competitive Advantage Through Continuous Outage Improvement, Electric Power Research Institute Fossil Plant Maintenance Conference, July 29, 1996. This document is available at website <http://www.iac.net/~pconsult/epri.html>.

160/ Evidence from the UK and strategic behavior studies, however, indicates that such market power can lead to ongoing cost impacts as well as outright efficiency losses. See Richard Green and David Newbery, Competition in the  
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eliminating the mistrust in the current grid management, entry by

new generation into the market will become more likely as new entrants will perceive the market as more fair and attractive for investment. And with more players, the market becomes deeper and more fluid, allowing for more sophisticated forms of transacting and smoother matching of buyers and sellers.

The full value of the benefits of RTOs to improve market performance cannot be known with precision before their development, and we do not yet have a long enough track record with existing institutions with which to measure. The Commission will estimate the potential cost savings from RTOs as part of its National Environmental Protection Act analysis. At this time, we foresee several billion dollars annually in efficiency gains to the economy. 161/

The Commission seeks comment on the effect of RTOs on electricity market performance, including any data or other information that could shed light on quantifying the extent of those benefits.

5. An RTO Would Facilitate Lighter-Handed Governmental Regulation

160/ (...continued)

British Electricity Spot Market, 100 J. POL. ECON., 929, 1992.

161/ The benefits are likely to come substantially from lower generation operation and maintenance costs that result from new plants, improved performance of existing plants, and improved congestion management.

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There are several ways that the existence of a properly structured RTO would reduce the need for Commission oversight and scrutiny, which would benefit both the Commission and the industry.

A number of regulatory benefits depend critically on the RTO being truly independent of power marketing interests. For example, to the extent an RTO is independent of power marketing interests, there would be no need for this Commission to monitor and attempt to enforce compliance with the standards of conduct designed to unbundle a utility's transmission and generation functions.

An independent RTO with an impartial dispute resolution mechanism would resolve disputes without resort to the Commission complaint process. The Commission has demonstrated its willingness to defer to such mechanisms. 162/ It is generally more efficient for these organizations to resolve many disputes internally rather than bringing every dispute to the Commission. We seek comment on what types of disputes or other matters would be appropriate for the Commission to defer to the decisions of the RTO? In granting deference to decisions that result from an acceptable ADR process, would there be a need to distinguish between RTOs that are ISOs and RTOs that are transcos?

The Commission could also consider adopting streamlined filing and approval procedures. The Commission could consider

162/ See PJM, 81 FERC at 62,269.

different filing requirements for established RTOS. For example, should we lower the threshold for the types of changes to operations or practices that would not require a filing with the Commission? Should such a policy be applied equally for non-profit and for-profit RTOs?

Another regulatory benefit is that an RTO could result in more streamlined transmission rate proceedings. The Commission

has indicated its willingness to grant more latitude to transmission pricing proposals from appropriately constituted regional groups, and RTOs would be such groups. 163/

To the extent that RTOs increase market size and decrease market concentration, the competitive consequences of proposed mergers would become less problematic and thereby help further streamline the Commission's utility merger decision making process.

#### 6. Conclusion

The Commission believes that the widespread formation of RTOs can provide substantial benefits. The Commission invites comment on the benefits of RTOs and the magnitude of these benefits.

##### C. Concerns Expressed by the State Commissions

Our Notice of Intent to Consult with State Commissions in this proceeding initiated our commitment to take into account the advice and concerns of the states in formulating an RTO policy. Through written and oral comments made during the consultations

163/ See Transmission Pricing Policy Statement, FERC Stats. & Regs. at 31,145, 31,148.

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in February 1999, and in response to a series of follow-up questions, state commissioners raised a number of concerns regarding RTO policy. The Commission appreciates the state commissioners' serious consideration and their comments have helped shape our proposal. We take the opportunity to summarize the principal concerns and how our proposal addresses those concerns.

##### 1. Federal Mandate

Most states oppose a FERC mandate to form RTOs. 164/ The

proposed rule would not generically require public utilities to transfer control of their transmission facilities to an RTO; however, we do seek comment on the issue. We are proposing to provide the impetus needed to help form RTOs by engaging the industry and the states in a national dialogue regarding RTO characteristics, setting minimum characteristics and functions for RTOs, providing flexibility for innovative transmission rate proposals, including a willingness to consider incentive pricing proposals, and establishing regional processes with Commission staff participation after a Final Rule is issued for fostering RTO formation. Thus, the proposed rule stops short of generically ordering utilities into RTOs but instead, as WUTC expresses it, we are at this time adopting: "...a policy of

164/ See, e.g., Comments in Docket No. RM99-2-000 of North Carolina Utilities Commission (NCUC) at 1; Washington Utilities and Transportation Commission at (WUTC) at 4; Georgia Public Service Commission (GPSC) at 10; Mississippi Public Service Commission (MPSC) at 3; and South Carolina Public Service Commission (SCPSC) at 1.

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encouraging voluntary RTO participation and filings..." 165/ The Commission is, however, concerned that the current transmission grid management framework may be preventing electricity markets from reaching their full competitive potential. We will evaluate the comments received in response to our proposals to determine if additional action is needed.

## 2. Regional Flexibility

At all three consultations with the state commissions and in written comments, we were urged by almost every state commission not to impose a "one size fits all" approach to RTO design. 166/ The vast majority of the respondents to the Commission's follow-

up questions were unwilling to designate a particular type of RTO organization as superior in all cases. The Commission agrees and does not propose to establish a mandatory national template for RTOs. Such a policy would be ill advised at this time. Neither this Commission, nor, we suspect, anyone else in the industry knows now what is the best combination of ownership and control to achieve an optimal RTO. Given the lack of experience to date, the Commission believes that the best policy is to encourage regional experimentation. Thus, as discussed below, the proposed rule would establish only minimum characteristics and functions needed for Commission approval as an appropriate RTO. We also propose to initiate collaborative regional processes in which

165/ WUTC at 4-5.

166/ See, e.g., comments of Florida Public Service Commission (FPSC) at 3.

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each region would be encouraged to design an RTO that best meets its needs. This collaborative process is discussed below.

Our proposed policy of regional flexibility should also help some states' concerns with the cost of an RTO. As discussed above, we believe RTO development will result in substantial benefits for the Nation. However, some states are concerned that the costs of an RTO will exceed its benefits. The cost of meeting the minimum RTO characteristics need not be large, but it is not always easy to measure the long-term RTO benefits that would offset these costs. By permitting regional flexibility, subject to our minimum characteristics and functions, the proposed rule allows each region to design an RTO that has costs commensurate with the regional benefits expected.

### 3. Retail Markets

States that have not adopted a retail access policy are concerned that an RTO in their state might interfere with their prerogatives regarding adopting, or not adopting, retail access. The comments and responses of some state commissions reiterate the concern that RTO formation will lead to retail access where it does not yet exist. 167/ The proposed rule does not require retail access. The Commission agrees with FPSC that, "FERC should not pursue any policy that would interfere with or contravene a state's authority to adopt or refrain from adopting

167/ See, e.g. response of Kentucky Public Service Commission (KPSC) at 1.

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direct retail access." 168/ Having an RTO in a state does nothing to interfere with the state's authority to decide retail access policy. Some states whose utilities are in RTOs can have retail access while others can choose not to have retail access. This is demonstrated today by the presence of ISOs in the Middle Atlantic and New England regions, but not all of the states in those regions have yet adopted retail competition. Some states with retail access believe that an RTO is needed to support their customer choice plan because the RTO allows customers, aggregators and marketers to reach supplies over a larger area. Those states that do not have retail access can nevertheless benefit from an RTO as their utilities enjoy the benefits of the RTO to lower native load generation rates by buying and selling power over a larger market area.

Some states are also concerned that having a Commission-

regulated RTO provide transmission service for retail customers would lead to some loss of control over retail market services, such as the ability to assure reliability. A primary purpose of an RTO is to ensure transmission reliability. Whether there is any decrease in state control over any aspects of retail market services would depend on the design of the particular RTO. Under any RTO design, the states would retain full control over the generation adequacy of franchised power suppliers, transmission siting and local distribution reliability. Further, the proposed rule would encourage state involvement both in RTO design and

168/ FPSC comments at 4.

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ongoing oversight, providing states a vehicle to protect all aspects of transmission reliability on behalf of retail customers.

#### 4. Effect on States with Low Cost Generation

States with relatively low cost power are concerned that an RTO would result in local utilities selling their low cost power to other states. However, the vast majority of the respondents to a follow-up question on this issue stated that this is not a likely problem. 169/ Similarly, we do not believe RTOs will cause such a result. The presence or absence of retail access is the principal factor affecting potential out-of-state sales of low-cost power, and this is in the hands of state policy makers. Arguably, retail access could lead to low cost power being sold out of state if incumbent utilities no longer have an obligation to serve retail customers. However, this could happen with or without an RTO. Where there is no retail access, state authorities can continue to ensure that a utility with a monopoly

franchise sells its lowest cost power to local native load, even if the utility's transmission is operated by an RTO. Indeed, an RTO could actually lower retail rates by expanding the market region for the utility to sell the higher cost power not sold to native load and sharing in the benefits of regionwide resource

169/ See, e.g., responses of Virginia State Corporation Commission (VSCC) at 1; WUTC comments at 2; Wisconsin Public Service Commission (WPSC) comments at 1; and Florida Public Service Commission (FPSC) comments at 1. But see, e.g., response of Alabama Public Service Commission (APSC) at 1, and response of District of Columbia Public Service Commission (DCPSC) at 1.

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planning and congestion management. 170/ And finally, utilities that now have low cost generation will help assure access to future low cost generation plants by participating in an RTO. New low-cost generation plants are more likely to be attracted to regions with a well-functioning regional market governed by an RTO. 171/ In other words, a state that is low-cost today may not be low-cost tomorrow without an RTO in its area.

We seek comment from state commissions regarding how an RTO in their state would affect power costs.

##### 5. Need for Independent Transmission Operation

Many states believe that transmission operators should be structurally independent of other market participants. Responses to follow-up questions indicated that independence of the transmission operator is a basic assumption for an effective RTO. 172/ As the Pennsylvania Public Utility Commission (PaPUC) states, "It is therefore the case that RTOs must have sufficient independence from direct control by any single entity or interest

- 170/ See response of Indiana Utility Regulatory Commission (IURC) at 1.
- 171/ According to data in a recent survey, about 64% of announced merchant power plants will be located in California, Texas, New York, New England, and the middle Atlantic area, while such states account for only about 30% of total electricity load in the U.S. See Announced Merchant Plants, survey prepared by the Electric Power Supply Association, April 13, 1999.
- 172/ See, e.g., responses of KPSC at 2 and Missouri Public Service Commission (MOPSC) at 1.

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group to perform these functions well and honestly." 173/ As discussed below, our proposed rule would require strict independence of transmission operation from market participants for approval of an RTO application.

#### 6. Transmission Cost Shifting

There is a concern by some states with utilities with relatively low cost transmission facilities that, by joining an RTO, their utilities' transmission costs will be averaged with the higher cost facilities of utilities in other states in determining RTO transmission rates. 174/ As a result, these states are concerned that joining an RTO will increase local transmission rates. This is known as transmission cost shifting. It has been an issue in every ISO the Commission has approved to date. That is why, in each of those ISO cases, we have allowed a transition period in which access fees are based on some form of "license plate" pricing: access fees are paid by load serving entities based on the fixed transmission costs of the local utility. As discussed below, we propose to continue and perhaps expand such flexibility in allowing the license plate approach or other approaches to recover current sunk transmission costs during a transition period.

173/ Supplemental comments at 7.

174/ See, e.g., comments of WUTC at 6.

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#### 7. Boundary Drawing

Many states expressed opposition to the Commission drawing regional or RTO boundaries in a rulemaking. 175/ The proposed rule does not set boundaries. Instead, we propose factors for assessing whether a proposed RTO's geographic configuration will ensure that the required RTO functions, such as assuring reliability, internalizing loop flow, managing congestion, and eliminating pancaked rates, are satisfied. In other words, we are proposing that the boundaries and other factors affecting scope and regional configuration will depend on the functions that an RTO performs. We note, however, that some RTO functions are likely to be carried out more effectively in a large region.

#### 8. Regional Approach to Reliability

Many states believe that regional operation of transmission is needed to assure the continued reliability of the transmission system. 176/ The proposed rule would require regional operation of transmission by an RTO with primary responsibility for short-term reliability as a condition for approval of an RTO application. This is discussed below.

#### 9. Pricing Reform

Many states want regional approaches to transmission pricing reform. In particular, they would like to decrease the incidence of pancaked transmission rates. Our proposal is aimed at

developing RTOs that would provide the forum and have the

175/ See, e.g. comments of NCUC at 1 and WUTC at 3.

176/ See, e.g., comments of NCUC at 3.

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geographic scope for a regional approach to transmission pricing reform. The proposed rule would also permit flexibility for experimenting with innovative forms of congestion management, which would mean fewer TLR curtailments and more assurance that native load is served.

#### 10. Participation of Public Power

In some regions of the Nation, substantial portions of the transmission grid are owned by public agencies. The states in these regions have expressed a concern that our RTO initiative must address how to assure that such public agencies join the RTO. Some of the responses to follow-up questions reiterated the need to include public power agencies in any RTO formation. 177/

The proposed rule would not require RTO formation and so does not address how to require public agency transmission owners to join RTOs. As suggested by KPSC, 178/ we will allow flexibility in RTO formation in order to meet, where possible, the requirements of public agencies. Nevertheless, the Commission's objective is to encourage the placement of all transmission facilities under the control of an RTO. In section III-G of this notice, we have requested comments on ways the Commission can facilitate public power participation in RTOs. We are also proposing regional processes to help facilitate RTO formation under section 202(a) of the Federal Power Act. Because

177/ See, e.g., responses of Iowa Utilities Board (IUB) at 1 and

New Mexico Public Regulation Commission (NMPRC) at 1.  
178/ Response at 1.

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section 202(a) applies to public power as well as public utilities, the regional processes will include publicly owned transmission entities.

#### 11. State Role in RTO Governance

States want a role in the governance of any RTOs for their states, and the Commission proposes to be as flexible as possible in accommodating their needs. The state commission responses to follow-up questions show that some states want to be closely involved in RTO operation 179/ while others believe it better to remain independent of the RTO in order to engage in better oversight. 180/ Practically all respondents see siting authority remaining with the states.

As discussed below, the proposed rule encourages RTO design to accommodate appropriate state oversight, especially with regard to planning and siting new multi-state transmission facilities. We request comments on the appropriate state role in RTO governance. For example, should state government officials participate as voting members of an RTO?

#### 12. Existing Regional Transmission Entities

During our consultations, many of the state commissioners from the northeastern region and a representative from California, where transmission facilities are already, or soon will be, under the control of Commission-approved ISOs, asked

179/ See, e.g., responses of WUTC at 4 and Arizona Corporation Commission (ACC) at 2.

180/ See, e.g., response of Wisconsin Public Service Commission (WPSC) at 3.

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that the Commission not require major changes to these ISOs during their implementation periods. 181/ The commissioners observed that their states' ISOs were still undergoing an implementation and learning period and, in some instances, are important to retail choice program implementation.

The Commission respects the investment of time and other resources made in the existing ISOs. We understand the importance of avoiding change during the critical implementation periods. Due to these considerations, and our proposed policy of regional flexibility, the proposed rule does not require major changes to the existing transmission entities that the Commission has found in conformance with the ISO principles of Order No. 888 at this time, absent compelling circumstances. However, any entity must meet our minimum RTO characteristics and functions to receive any of the benefits to be accorded RTOs. Our objective is to have all of the Nation's transmission grid under the control of RTOs that have the minimum characteristics and functions adopted in the Final Rule. That is why we propose to require the public utility members of existing transmission entities that have been found in conformance with the Commission's ISO principles to make a filing, individually or jointly, with the Commission no later than October 15, 2000, that explains the extent to which the entity in which it or they

181/ See, e.g., Comments at the Washington D.C. conference of New England Conference of Public Utilities Commissioners, Inc. (NECPUC) at 4 and remarks of California Senator Peace, RTO Conference (Las Vegas), transcript at 3-4.

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participate meets the minimum RTO characteristics and functions. The Commission is also concerned about impediments to transactions between existing ISOs (as well as any future RTOs). We therefore encourage existing ISOs to consider ways to reduce any impediments to transactions among them.

The Commission invites further comments from the state commissions on all aspects of the proposed rule.

D. Minimum Characteristics and Functions for a Regional Transmission Organization

In this section, we propose minimum characteristics and functions for a transmission entity to qualify as an RTO. These characteristics and functions are designed to ensure that any RTO will be independent and able to provide reliable, non-discriminatory and efficiently priced transmission service to support competitive regional bulk power markets. There are four minimum characteristics for an RTO:

- (1) independence from market participants;
- (2) appropriate scope and regional configuration;
- (3) possession of operational authority for all transmission facilities under the RTO's control; and
- (4) exclusive authority to maintain short-term reliability.

In addition, there are seven minimum functions that an RTO must perform. An RTO must:

- (1) administer its own tariff and employ a transmission pricing system that will promote efficient use and expansion of transmission and generation facilities;

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- (2) create market mechanisms to manage transmission

- congestion;
- (3) develop and implement procedures to address parallel path flow issues;
  - (4) serve as a supplier of last resort for all ancillary services required in Order No. 888 and subsequent orders;
  - (5) operate a single OASIS site for all transmission facilities under its control with responsibility for independently calculating TTC and ATC;
  - (6) monitor markets to identify design flaws and market power; and
  - (7) plan and coordinate necessary transmission additions and upgrades.

The Commission seeks comment on the following questions: (1) whether the Commission's enumeration of minimum criteria omits a necessary minimum characteristic or function, or includes an unnecessary characteristic or function; (2) whether there is a need to distinguish between minimum characteristics and minimum functions (i.e., adopt separate categories for the minimum requirements); and (3) if so, whether any of the minimum characteristics should be re-characterized as minimum functions, and vice versa. Comments on these questions should take into account the Commission's objective in this rulemaking of encouraging the formation of RTOs that promote competitive

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markets and non-discriminatory access to, and reliable operation of, the electric grid.

Under this proposal, all RTOs must satisfy the four minimum characteristics on their first day of operation as approved RTOs. The Commission also proposes that all RTOs be prepared to perform

at least four of the seven minimum functions on their first day of operation as approved RTOs. Recognizing that more time may be needed to perform certain functions, we are proposing that for the other three of the functions -- establishing procedures for addressing parallel path flows with neighboring systems, managing congestion, and planning transmission expansion -- additional time ranging from one to three years after initial operation will be allowed.

The Commission seeks comments on whether we should grant RTO status to entities that are not able to perform immediately these three functions. The Commission also seeks comments on whether we should grant RTO status to entities that may not be able to perform on the first day of operation certain other (i.e., any of the remaining four) of the minimum functions. Should we differentiate, for purposes of initial implementation, between any of the seven minimum functions? If so, has the Commission appropriately identified those minimum functions that are most likely to require additional time to perform?

We propose to give transmission entities flexibility in deciding how to meet these seven minimum functions. For five of the functions (tariff administration, congestion management,

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ancillary services, market monitoring and planning and expansion), we propose to establish standards for how the function is performed, but an RTO will have the option of demonstrating that an alternative proposal is consistent with or superior to the standards in the proposed rule. 182/ The Commission seeks comment on whether this flexibility -- i.e., the option of demonstrating that an alternative proposal is

consistent with or superior to the proposed rulemaking standards  
-- should apply to any or all of the minimum characteristics.

183/

We also propose that the RTOs would have flexibility in designing their organizational structures. We are receptive to all types of RTO proposals as long as they satisfy the specified minimum characteristics and functions. For example, we will consider proposals for non-profit or for-profit organizations. An RTO can be an operator of the grid that it controls, an operator and owner of the grid that it controls, or a combination of the two. 184/ The minimum characteristics and functions provide a wide range of implementation flexibility and

182/ We use the term "standard" to refer to the required sub-elements under each characteristic and function.

183/ Alternative proposals may include requests for appropriate transition periods. We will consider such proposals on a case-by-case basis, based on an assessment of their effect on regional power markets.

184/ One example of an arrangement that combines these two approaches would be a transmission entity that owns and operates some transmission facilities and operates other facilities under long-term leases or other agreements with existing or new transmission owners.

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discretion. They represent a floor, not a ceiling. To encourage further evolution, the Commission is proposing an "open architecture" requirement. Under this requirement, the RTO must permit further improvements that will enhance the efficient operation of regional bulk power markets.

#### Minimum Characteristics

1. Characteristic 1: Independence. The RTO must be independent of market participants. (Proposed 35.34(i)(1))

Market participants must be assured that the RTO will

provide transmission access to all market participants on a fair and non-discriminatory basis. The Commission believes that it is a prerequisite for achieving fair, open and competitive power markets. An RTO needs to be independent in both reality and perception. 185/ As we have said before in the context of ISOs, we think that "the principle of independence is the bedrock upon which the ISO must be built..." 186/ It is the Commission's view

185/ This is also the conclusion of almost every one of the state commission representatives who attended our recent consultations with the state regulatory community. See, e.g., Comments of Commissioners Marlene Johnson and Herbert Tate, Regional ISO Conference (Washington, D.C.), transcript at 66-67, 95; Comments of Judy Sheldrew, RTO Conference (Las Vegas), transcript at 58.

186/ Atlantic City Electric Company, et al., 77 FERC - 61,148 at 61,574 (1996). The same conclusion was reached by the DOE Reliability Task Force and the NERC Reliability Panel. The DOE Task Force concluded that regional reliability entities must be "truly independent of commercial interests so that their reliability actions are--and are seen to be--unbiased and untainted..." Task Force Report at xv. The Electric Reliability Panel concluded that "(t)o dispel suspicions that the system operator favors one participant over another... the operator must be independent from market (continued...)

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that independence can be achieved if the RTO satisfies three conditions. First, the RTO, its non-stakeholder governing board members and its employees must have no financial interests in market participants. 187/ Second, the RTO s decision making must not be controlled by any market participants. Third, the RTO must have independent authority to file changes to its transmission tariff. We now discuss these conditions.

- a. The RTO, its employees and any non-stakeholder directors must not have financial interests in any electricity market participants. (Proposed 35.34(i)(1)(i))

We propose that the RTO, the non-stakeholder members of its governing board and all employees be prohibited from having

financial interests in any market participants. The prohibition clearly applies to current financial interests. It does not preclude past financial ties with market participants. Nor does it require a total or permanent prohibition on all future financial ties with market participants in the region. Such a prohibition would make it difficult for the RTO to hire experienced and knowledgeable employees. Therefore, we will employ a rule of reason standard in deciding what financial ties

186/ (...continued)

participants." North American Electric Reliability Council, Electric Reliability Panel, Reliability Power: Renewing the North American Electric Reliability Oversight System, December 22, 1997, at 17.

187/ We use the terms "stakeholder" and "market participant" interchangeably. They mean any entity that buys or sells electric energy in the RTO's region or in any neighboring region that might be affected by the RTO's actions, or any affiliate of such entity.

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with market participants would be acceptable after an individual leaves the RTO. As has been the case in our review of conflict of interest standards for ISOs, the Commission would establish these standards on a case-by-case basis. 188/

The Commission requests commenters to address some or all of the following issues related to the proposed requirements. Do we need to define the financial independence requirement in more specific terms or is it sufficient to enunciate the general principle and then apply it on a case-by-case basis? Should the definition of stakeholders or market participants be expanded to include entities that operate distribution-only facilities (i.e., entities that perform the "wires" function at lower voltages) and transmission entities in neighboring regions? Should this

definition be broadened to include sellers and buyers of ancillary services? Are there any circumstances in which the definition should be expanded to include entities that do not participate in power markets in the region but that provide transmission services to the RTO or buy transmission service from the RTO? Do we need to add more specificity to the requirement that RTOs have conflict of interest standards? Are there lessons to be learned from the experience of ISOs with conflict of interest standards that can now be applied more generally to RTOs?

188/ See, e.g. Midwest ISO, 84 FERC at 62,152-53, order on reh'g, 85 FERC at 62,036; NEPOOL, 79 FERC at 62,586-87.

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- b. An RTO must have a decisionmaking process that is independent of control by any market participant or class of participants.  
(Proposed 35.34(i)(1)(ii))

This requirement would be satisfied, for example, by an RTO with (a) a non-stakeholder governing board and (b) a prohibition on market participants having more than a de minimis (one percent) ownership interest in the RTO. 189/ The Commission seeks comments on whether this kind of RTO should be deemed to satisfy automatically this element of the independence requirement. We also request comments on whether there should be a single standard for independent decision making for all RTOs regardless of whether they are for-profit or non-profit entities. The Commission recognizes that there may be other ways to satisfy the independent decision making requirement. Therefore, we propose to consider other governance and ownership proposals, which will be judged on a case-by-case basis against the general

requirement of independent decisionmaking.

With regard to the RTO governing board, we propose to define a non-stakeholder governing board as a governing board of individuals without any financial ties to market participants or

189/ It is our understanding that a similar standard was established by the British government when it created the National Grid Company (NGC), the largest, for profit transmission company in the world. The company's basic corporate documents prohibit market participants from serving on NGC's board and from owning more than one percent of the shares in its voting equity. A similar prohibition appears to exist in the Wisconsin state law that mandates Wisconsin utilities to join either an ISO or an independent transmission company by a specific date. See 1997 Wisconsin Act 204, Section 30.

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their affiliates. Individuals on such a board are independent, rather than representative, of market participants. Board members usually have experience in a variety of fields related to the RTO's operations. These could include, among others, transmission operations and planning, law, electricity regulation, business management, market analysis, and risk management. The non-stakeholder board would be the ultimate decision making authority, though it could choose to delegate decisions to its staff or committees of stakeholders. 190/ The board would be advised by the RTO staff and perhaps by a committee of stakeholders. In recent proceedings, we have accepted this two tier approach because it represents a middle ground in that it attempts to balance independence with expertise.

In the case of a non-stakeholder board, how can we ensure that the concerns of market participants are communicated effectively to the board? We request comments on what, if any,

additional requirements should apply to a governing board that is not a stakeholder board or to a governing board with both stakeholders and non-stakeholders. For either stakeholder or

190/ An ISO governing board s delegation of decisions to a stakeholder committee would be contingent on this committee not being dominated by one segment of the industry. We recently found that the existing tiered governance arrangements of the New York and New England ISOs failed to meet this standard and we ordered both ISOs to reduce the voting power of dominant utilities in the lower tier of stakeholders charged with advising the non-stakeholder governing boards. See Central Hudson, 87 FERC at \_\_\_\_, slip. op. at 12-13; New England Power Pool, 86 FERC - 61,262 at 61,965.

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non-stakeholder boards, should we impose an upper limit on the size of the board? How should the Commission consider proposals for state regulatory or other governmental officials to select board members for either stakeholders or non-stakeholder boards? How should the Commission view proposals for state government officials to serve as voting members of RTO boards?

With regard to market participants having no more than a de minimis interest in the ownership of the RTO, we propose to consider a de minimis interest as having no more than a one percent interest in the ownership of an RTO. We seek comment on whether one percent is an appropriate de minimis ownership interest and, if not, what would constitute appropriate de minimis ownership for purposes of establishing independence. We also request comment on whether there are conditions under which market participants should be allowed to have more than a de minimis ownership interest in an RTO. Should the Commission have a different standard for passive interests? How should the Commission treat preferred equity shares?

There are several reasons why we are proposing that the

independent decision making standard can be satisfied by an RTO with (a) a non-stakeholder governing board and (b) a prohibition on market participants having more than a de minimis (one percent) ownership interest in the RTO. First, affiliated transmission companies (i.e., transmission companies in which one or more market participants have more than a de minimis ownership interest) may not be trusted by market participants even with

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elaborate protections (e.g., voting trusts, independent trustees and corporate boards not chosen by the owners). We believe that market participants are likely to suspect that the safeguards will be gamed. This, in turn, could affect investment behavior. In particular, market participants may be reluctant to make needed investments in generation or marketing of electricity if they believe that the RTO is likely to give favored treatment to its affiliates.

Second, affiliated transmission entities that are not independent of market participants would continue the regulatory need for detailed and hard to enforce codes of conduct. If we permit RTOs to be affiliated with one or more market participants, we believe that the Commission may have to devote considerable regulatory resources to "chasing after conduct" (i.e., allegations of favoritism). If our experience with functional unbundling as well as with affiliated natural gas pipelines provides any lessons, we will probably find it necessary to issue detailed rules that deal with internal corporate matters relating to organizational responsibilities, corporate communications, etc. 191/ For this reason, the

191/ Natural gas pipelines that transport gas for others and are affiliated with gas marketers or brokers must conform to the

standards of conduct outlined in Section 161.3 of the Commission's regulations. Further, such pipelines, pursuant to Section 250.16 of the Commission's regulations must maintain: (a) provisions in their effective tariffs that divulge operating employees and facilities shared by the pipeline and its affiliate(s) and the procedures used to address complaints; (b) a data log showing, by customer (affiliate and non-affiliate), how capacity on the pipeline (continued...)

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existence of affiliated transmission entities also could make it difficult to pursue light-handed regulation.

Commenters are asked to address whether these are reasonable assessments of the effects of allowing market participants to have more than a de minimis ownership interest in RTOs. Is there relevant experience from other regulated industries? If we were to allow market participants to have more than a de minimis ownership interest for a transition period, how long should the transition period be? Would any additional safeguards be required during such a transition period? In general, which type of institution would better serve the goal of independence: a transco with de minimis ownership and a non-stakeholder board or an ISO with a non-stakeholder board?

- c. The RTO must have exclusive and independent authority to file changes to its transmission tariff with the Commission under Section 205 of the Federal Power Act. (Proposed 35.34(i)(1)(iii))

We believe that independence requires that the RTO provide service under its own open access transmission tariff and that it has the right to file changes to its tariff with the Commission on its own authority. In other words, the RTO should not be required to get the prior approval of transmission customers, transmission owners or any other entities to make Section 205

191/ (...continued)

was allocated; and (c) information concerning shippers

receiving discounted rates. Within the natural gas pipeline industry, these requirements are sometimes viewed as overly intrusive regulation. See "FERC Clarifies Affiliate Etiquette For Gas Pipelines," The Energy Daily, November 17, 1998, at 1.

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filings with the Commission. The rationale is that if the RTO is taking over the open access transmission service obligation from current transmission providers, the RTO must be able to independently and unilaterally propose changes in its tariff.

192/ While this is not likely to be a concern for transcos, our recent experience suggests that it is an important issue for ISOs that seek to become RTOs. We have approved ISOs that appear not to meet this standard. For example, the New England ISO provides transmission service under the tariff of the NEPOOL RTG rather than its own tariff. 193/ In our order approving the Midwest ISO, we stated that: "We believe that any problems that may arise can be addressed by the Midwest ISO's authority to file changes unilaterally to the congestion management procedures." 194/

However, our order also accepted a requirement that the ISO get the prior approval of existing transmission owners before filing certain types of changes in its tariff with us. 195/ Separately, we have a pending request for clarification on this issue from the PJM ISO. 196/ Can an RTO be truly independent if it does not

192/ The Commission has previously stated that the "[a]uthority to act unilaterally...is a crucial element of a truly independent ISO." 79 FERC -61,374 at 62,585 (1997).

193/ This has been protested by the New England Conference of Public Utility Commissioners. See "Motion For Leave To Submit Answer....," Docket Nos. OA97-237 and ER97-1079, April 8, 1997.

194/ See Midwest ISO, 84 FERC at 62,163.

195/ Id. at 62,151.

196/ "PJM Interconnection, LLC's Request For Clarification, Or In

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have the authority to file changes in its tariff without the approval of other entities such as transmission owners? Should the ISO's unilateral filing authority be limited to transmission rate design and terms and conditions that directly affect access but not to changes that would affect transmission owners' ability to collect their overall revenue requirements? In practice, is this a viable distinction? If an RTO's filed rate schedule also includes market design rules, should the RTO have Section 205 filing authority to make changes in these rules?

2. Characteristic 2: Scope and Regional Configuration. The RTO must serve an appropriate region. The region must be of sufficient scope and configuration to permit the RTO to effectively perform its required functions and to support efficient and nondiscriminatory power markets. (Proposed 35.34(i)(2))

We propose that all RTO proposals filed with us identify a region of appropriate scope and configuration. The scope and configuration of the regions in which RTOs are to operate, and the extent to which RTOs control the transmission facilities within a region, will significantly affect how well they will be able to achieve the desired regulatory, reliability, operational, and competitive benefits. Accordingly, we set forth below what we consider to be relevant factors that may affect the appropriate scope and configuration for a region that an RTO will

196/ (...continued)

The Alternative, Rehearing," Docket No. OA97-261, December 27, 1997.

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serve. 197/ If the formation of RTOs is undertaken without considering the goals that large regions can best achieve, it is unlikely that RTOs will be configured to provide maximum benefits. Transmission owners could seek to gain strategic advantage by the way an RTO is formed. For example, an RTO could be placed to act as a toll collector on a critical corridor. 198/ Alternatively, an RTO could propose configurations that interfere with the formation of a larger, more appropriately configured RTO.

The Commission is aware that there is likely no one "right" configuration of regions. One particular boundary may satisfy one desirable RTO objective and conflict with another. The industry will continue to evolve, and the appropriate regional configurations will likely change over time with technological and market developments. The Commission is also mindful of the interests of individual states regarding RTO boundaries. Given

197/ We note that a number of parties have asked the Commission to take the initiative to make the RTO formation process more orderly. For example, 11 state commissions filed a petition with FERC in February 1998 (which was noticed in both the Midwest ISO proceeding and in the generic ISO inquiry) asking FERC to take action on the geographic configuration of ISOs, arguing that inappropriate borders for ISOs could result in reduced customer benefits, economic inefficiencies, unnecessary complication of coordinated operations, and detrimental impacts on planning. However, in our three RTO conferences, representatives of several other state commissions expressed concern about the Commission playing too strong a role in RTO formation, arguing, for example, that we should not define RTO geographic boundaries but should leave this to the parties in each area of the country to determine.

198/ See Statement of Ohio Commission Chairman Craig Glazer, RTO Conference (St. Louis), transcript at 85-87.

all these considerations, the Commission believes that the public interest will best be served if we establish at the time of the Final Rule a set of factors that encourage appropriate regional configuration, without actually prescribing boundaries.

In the discussion that follows, the Commission sets forth, and solicits comments on, the factors that it believes are important for an appropriately configured region in which an RTO would operate.

a. Factors Affecting The Appropriate Scope And Regional Configuration Of An Acceptable Region

The Commission has grouped the factors that it believes are significant to developing appropriate regions into regional configuration factors and factors for evaluating boundaries.

i. Regional Configuration Factors

The Commission believes that the most important consideration in evaluating the geographic configuration of an RTO is that such configuration permit the RTO to perform its functions effectively. We believe that many of the characteristics and functions for an RTO proposed in this section suggest that the regional configuration of a proposed RTO should be large in scope. 199/ For example:

Making accurate and reliable ATC determinations: An RTO of sufficient regional scope can make more accurate

199/ This reiterates the conclusion we reached in the eleven ISO principles in Order No. 888, where we stated that "[t]he portion of the transmission grid operated by a single ISO should be as large as possible." Order No. 888, FERC Stats. & Regs. at 31,731.

determinations of ATC across a larger portion of the

grid using consistent assumptions and criteria.

Resolving loop flow issues: An RTO of sufficient regional scope would internalize loop flow and address loop flow problems over a larger region.

Managing transmission congestion: A single transmission operator over a large area can more effectively prevent and manage transmission congestion.

Offering transmission service at non-pancaked rates: Competitive benefits result from eliminating pancaked transmission rates within the broadest possible energy trading area.

Operations: A single OASIS operator over an area of sufficient regional scope will better allocate scarcity as regional transmission demand is assessed; promote simplicity and "one-stop shopping" by reserving and scheduling transmission use over a larger area; and lower costs by reducing the number of OASIS sites.

Planning and coordinating transmission expansion: Necessary transmission expansion would be more efficient when planned and coordinated over a larger region.

The Commission recognizes, however, that there may be other factors that limit how large a region may be, for example, the requirement that an RTO be the grid operator. There may be a limitation on how many facilities or transactions can be reliably

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overseen by a single operator, imposed either by hardware design or costs, or imposed by human limitations to process the required amount of information.

The Commission is not proposing that the RTO must be a

control area operator, although four of the five ISOs approved so far by the Commission are each a single control area. 200/ If those forming an RTO decide that the RTO should be a control area operator, this too may limit the RTO's size. However, control area functions might be performed over a large area by a master-satellite (or other hierarchical) structure. The Commission solicits comments on the technical limitations or cost limitations on how large an RTO can be if it is to have control area responsibilities.

The difficulty and cost of transferring operational control over many transmission systems to one RTO may also affect regional configuration. The larger the number of transmission systems, the more complex the task may be and the longer it may take to accomplish. The Commission solicits comments on how the number of transmission systems to be combined would affect the cost and time required to form an RTO.

A third factor that may limit size is rate treatment. As regions get larger and involve more existing owners of transmission, reaching consensus on an appropriate transmission rate design for the region may prove challenging. Also, a

200/ The Midwest ISO is the only Commission-approved ISO that has not proposed a single control area.

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uniform transmission rate treatment which averages the costs of existing transmission assets across the region could subject some RTO participants to higher transmission rates. Moreover, sharing the costs of future transmission improvements may raise issues regarding whether the transmission improvements provide benefits to the entire region and who should pay those costs. These

issues are discussed further below with respect to cost shifting concerns.

Are there other factors that may limit the geographic scope of an RTO? The Commission solicits comments on this issue.

ii. Factors for Evaluating Boundaries

In addition to the factors affecting the size of a region, other factors may affect the location of regional boundaries. The Commission believes that RTO boundaries should be drawn so as to facilitate and optimize the competitive, reliability, efficiency, and other benefits that RTOs are intended to achieve, as well as to avoid unnecessary disruption to existing institutions. The Commission proposes below a list of factors it would consider in evaluating the configuration for a proposed RTO. Various factors may indicate different configurations, and assessing the appropriateness of a region's configuration will require a balancing of factors.

Given this qualification, the Commission proposes that the following factors should be considered in evaluating an RTO's boundaries:

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Facilitate performing essential RTO functions and achieving RTO goals, as discussed elsewhere in this proposed rule: The regions should be configured so that an RTO operating therein can ensure non-discrimination and enhance efficiency in the provision of transmission and ancillary services, maintain and enhance reliability, encourage competitive energy markets, promote overall operating efficiency, and facilitate efficient expansion of the transmission grid. For example, we understand that there have been instances where transmission system reliability was

jeopardized due to the lack of adequate real-time communication between separate transmission operators in times of system emergencies. To the extent possible, RTO boundaries should encompass areas for which real-time communication is critical, and unified operation is preferred.

Recognize trading patterns: Given that a goal of this initiative is to promote competition in electricity markets, regions should be configured so as to recognize trading patterns, and be capable of supporting trade over a large area, and not perpetuate unnecessary barriers between energy buyers and sellers. There may exist today some infrastructure or institutional barriers inhibiting trade between regions that could be mitigated economically. It would be desirable that RTO boundaries not perpetuate these barriers.

Not facilitate the exercise of market power. While the industry should work toward a goal of virtually seamless trade between RTOs, it may be that initially a significant amount of

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trade may be contained within RTOs. Thus, it is important to avoid creating an RTO region that is dominated by a only a few buyers or sellers of energy, or a region where an RTO of inappropriate scope and configuration can exercise transmission market power by acting as an unnecessary toll collector on a critical corridor.

Encompass existing control areas: Existing control areas have established systems for load balancing within their area. Most existing control areas are relatively small. For the sake of efficiency, it may be advisable not to divide them. However, the affected parties would not be precluded from proposing to divide control areas if they found it otherwise advantageous.

Encompass existing regional transmission entities: Because existing ISOs, and any other regional transmission entities we may hereafter approve, already integrate transmission systems, it may not be efficient to divide them into different regions. This is not to say, however, that RTO boundaries must coincide with existing regional transmission entities. An appropriate region may well be larger, and there may be circumstances that support combining or reconfiguring existing entities.

Encompass one contiguous geographic area: The competitive, efficiency, reliability, and other benefits of RTOs can be best achieved if there is one transmission operator in a region. To be most effective, that operator should have control over all transmission facilities within a large geographic area, including the transmission facilities of non-public utility entities. This

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consideration could preclude a noncontiguous region, or a region with "holes."

Encompass a highly interconnected portion of the grid: To promote reliability and efficiency, portions of the transmission grid that are highly integrated and interdependent should not be divided into separate RTOs. One RTO operating the integrated facilities can better manage the grid. This is not to say, however, that every weak interconnection belongs on a regional boundary. Where a weak interface is frequently constrained and acts as a barrier to trade, it may be appropriate to place that interface within an RTO region. It may be more difficult to expand a weak interface on the boundary between two regions; this may act as a barrier to trade between the two regions. The Commission welcomes comments on the relative merits of

internalizing constraints within a region versus having constraints act as natural boundaries between regions.

Take into account existing regional boundaries (e.g. North American Electric Reliability Council (NERC) regions) to the extent consistent with the Commission's goals for RTOs: An RTO's configuration should, to the extent possible, not disrupt existing useful institutions. The Commission recognizes that utilities have been working together regionally in different contexts for some time. There is value in keeping together parties that have been working together.

Take into account international boundaries: The Commission recognizes that natural transmission boundaries do not

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necessarily coincide with international boundaries. Indeed, a large part of Canada's transmission system, and a small part of Mexico's, is interconnected on a synchronous basis with that of the U.S. Accordingly, an appropriate region need not stop at the international boundary. However, this Commission does not have, and does not seek, jurisdiction over the facilities in a foreign country. We will ask our international neighbors to participate in discussion of these issues. Perhaps what may be thought of as a "dotted line" boundary at the international border could be used to indicate that a natural transmission region does not necessarily stop at the border, while this Commission's jurisdiction does.

The Commission seeks comments on the appropriateness of these factors to determine an appropriate configuration for the regions in which RTOs would operate, and also asks if any additional factors may be appropriate.

b. Potential Geographic Configurations

Any number of RTO configurations could be appropriate regions. One approach to establishing RTO regions is to use existing configurations. These include the three electric interconnections within the continental United States, the ten NERC reliability councils, and the twenty-three NERC security coordinator areas. (See Appendix C to this NOPR for depictions of these configurations 201/). These configurations are offered

201/ While the maps in Appendix C accurately depict the existing configurations extending into Canada, this is not intended  
(continued...)

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only for the purposes of having three examples for assessing how well selected regions can satisfy the minimum RTO characteristics and functions and for focusing commenters on the trade-offs involved in determining an RTO configuration. The Commission has not concluded that the example sets of boundaries are acceptable configurations. The Commission seeks comments on how well the regions served by existing institutions would satisfy the factors enunciated above, and specifically how well they would be able to satisfy the minimum RTO characteristics and functions outlined in this section, and the advantages and disadvantages of these three examples. The Commission also welcomes presentation and evaluation of other methods to define appropriate regions.

c. Control of Facilities within a Region

In addition to the scope and configuration of the region, effective performance also requires that most or all of the transmission facilities in a region be included in the RTO. Any RTO proposal filed with us should plan to operate all transmission facilities within its proposed region. We recognize, however, that there may be cases where the proponents

of an RTO may not be able to obtain agreement by all transmission owners within a region of appropriate scope and configuration to transfer operating control of their facilities to the RTO. This may occur, for example, because certain facilities may be owned by governmental entities that have restrictions on transfer of

201/ (...continued)

to suggest that our jurisdiction under this proposed rule reaches there.

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control that may require time to resolve. We do not believe that it would be desirable to deny RTO status or delay RTO start-up where the transmission owners representing a significant portion of the facilities within a region are ready to move forward, while a few others are not. On the other hand, we do not believe it would be desirable to approve an RTO proposal for a proposed region if the proponents represent only a small portion of the facilities in that region.

We therefore propose to accept as RTOs only those proposals for which a region of appropriate scope and configuration is identified and the proponents represent a sufficient portion of the transmission facilities within the identified region. Where the proponents do not represent all the facilities within a region, they should identify the reasons why all facilities are not represented, any efforts that will be made to eventually include all facilities, and any interim arrangements that could be made with the non-represented facility owners to maximize coordination within the region.

We solicit comments on how best to balance our goal of having RTOs in place that operate all transmission facilities within an appropriately sized and configured region against the

reality that there may be difficulties in obtaining 100 percent participation in all regions in the near term. Should we deny RTO status for any proposal that does not include all transmission facilities within an appropriate region? If we do not deny RTO status for less than 100 percent participation, is

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there some guideline that we should use for determining when the proponents represent an appropriate "critical mass" for the region? Should we require that the RTO at least negotiate certain agreements with any non-participants within its region to ensure maximum coordination? If so, what should be the terms of such agreements?

Finally, we seek comment on the question of how much deference, if any, we should give to the proposed scope and regional configuration of a proposed RTO. How readily, if at all, after balancing all appropriate factors, should the Commission be willing to substitute its vision of an appropriate RTO configuration for that of its proponents? To what extent should the Commission take into account the degree of support in assessing a proposed RTO configuration? Should approval or disapproval by affected state commissions of the scope or configuration of a proposed RTO affect the level of deference the Commission should afford such a proposal?

3. Characteristic 3: Operational Authority. The RTO must have operational responsibility for all transmission facilities under its control. 202/ (Proposed 35.34(i)(3))
  - a. The Regional Transmission Organization may choose to directly operate facilities (direct control), delegate certain tasks to other entities (functional control) or use a combination of the two approaches. (Proposed 35.34(i)(3)(i))

202/ Transmission facilities will be distinguished from local distribution facilities using the criteria that were established in Order No. 888. Order No. 888, FERC Stats. and Regs. - 31,036 at 31,770-71.

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Operational control raises two basic questions: What functions should be performed by an RTO? How should an RTO perform the functions that it has reserved for itself? With respect to the first question, there is a concern that some splits of functions between an RTO that is an ISO and existing control area operators could compromise reliability and allow the control area operators to continue to favor their own power marketing efforts. 203/

One solution would be for all RTOs to operate a single control area. We have decided not to propose this as a requirement for two reasons. First, the recent experience with the California ISO suggests that the cost of investing in new control centers and telecommunications systems and developing new operating systems can be very high. 204/ Second, there is some uncertainty as to whether it is technically feasible to establish a single traditional control area over a large geographic area. In light of these considerations, we do not propose to require that an RTO must operate a single control area. However, the RTO

203/ Midwest ISO, 84 FERC at 62,156-60, 62,181.

204/ A recent report commissioned by the California ISO found that the higher costs of the California ISO relative to other ISOs could be explained, in part, by the decisions "to build a privately dedicated communications network, to have a hot standby backup center half a state away, to not rely on existing infrastructure more than necessary, to attempt full functionality on day one, to accomplish the job in about one year..." See "A Comparative Analysis Of Operating Independent System Operators In The United States," prepared

by James H. Caldwell Jr. (TGAL, Inc.) For the California ISO, October 15, 1998, at 13.

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must have ultimate responsibility for providing non-discriminatory transmission service for all market participants and for ensuring the short-term reliability of the grid. 205/ We propose to give an RTO considerable flexibility in deciding on the particular division of operational responsibilities with existing control areas that will allow it to achieve this outcome.

We will also grant an RTO considerable flexibility in deciding how best to perform the functions that it has reserved for itself. The RTO may choose to operate the grid through direct physical operation by RTO employees, contractual agreements with other entities (e.g., transmission owners and control area operators) or combinations of the two. For example, an RTO could lease some control equipment from the owners of existing control centers or convert some employees at these control centers into RTO employees. Or alternatively, the RTO could establish a system of hierarchical control in which it operates a master control center and existing control centers become satellites of the RTO control center for certain specified functions. 206/ Under this arrangement, the personnel of the

205/ In our order approving the Midwest ISO, we stated that our approval of the ISO was based on the applicants' commitment that the ISO would be able to "take all actions necessary to provide nondiscriminatory transmission service, promote and maintain reliability." Midwest ISO, 84 FERC at 62,159.

206/ See, e.g., Marija Ilic and Shell Liu, *Hierarchical Power System Control: Its Value in a Changing Industry*, Springer-Verlag, 1996. It appears that certain types of hierarchical arrangements have operated successfully in the PJM and

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existing control centers might become employees of the RTO or remain as employees of the control center owner but supervised by RTO personnel. We will leave it to the discretion of the RTO to decide on the combination of direct and functional control that works best for its circumstances. 207/ Our only requirement is that the system of operational control chosen by the RTO must ensure reliable operation of the grid and non-discriminatory access to the grid by all market participants. In addition, to ensure that the RTO does not become locked into an operational system that is unsatisfactory, the Commission will require an RTO to prepare a public report that assesses the efficacy of its operational arrangements no later than two years after it begins operations.

The Commission requests commenters to address the following questions. What has been the experience of existing tight power pools with master-satellite and hierarchical forms of control? Was there a need to modify these operational arrangements when the pool was replaced by an ISO? Outside of tight power pools, has the functional unbundling requirement in Order No. 888 led to any divisions of previously integrated internal operational systems? If so, have these new divisions of operational responsibilities created any reliability problems?

206/ (...continued)

NEPOOL pools for many years.

207/ This topic is also addressed in our discussion of the RTO's role as a provider of ancillary services. See the discussion of Function 4.

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- b. The RTO must be the security coordinator for the transmission facilities that it controls.  
(Proposed 35.34(i)(3)(ii))

The Commission will also require that any qualifying RTO be the NERC approved security coordinator for its region. A security coordinator is a new type of grid entity that typically coordinates reliability between multiple control areas across a region. It has been promoted by NERC since 1995 to improve coordination and communication across control areas. At present, there are more than 20 security coordinators. 208/

Up to now, the job of a security coordinator has been to anticipate reliability problems and to take actions to correct these problems if they arise. Among the key functions of a security coordinator are to: (1) perform load-flow and stability studies of the transmission system to identify and address security problems; (2) exchange necessary security information with control area operators, ISOs and regional reliability councils; (3) monitor real-time operating characteristics (e.g., availability of operating reserves, interchange schedules, system frequency, actual flows versus limits, generation capacity deficiencies) that could affect reliability; (4) take appropriate

208/ See NERC, Operating Policy 9--Security Coordinator Procedures. The current version of this document is available on the NERC website at <http://www.nerc.com/~oc/operman1.html>. See also, NERC TLR Order, 85 FERC - 61,353 at 62,360-62.

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action including, if necessary, the shedding of load in the event

of a reliability problem. 209/

In our Midwest ISO order, we required that the proposed ISO must be the security coordinator for its region. Our justification for this requirement was that:

This role [the role of a security coordinator] is central to maintaining grid reliability and non-discriminatory access. Under proposed NERC policies, security coordinators would be required to anticipate problems that could jeopardize the reliability of the interconnected grid. In the course of performing these reliability functions, the Security Coordinator would receive considerable information which is commercially sensitive. Therefore, it is important that the proposed Midwest ISO Security Coordinator be performed by an entity that is independent of market participants.

The same logic applies to any RTO proposal. Therefore, we will require that a qualifying RTO must be the security coordinator for its region. 210/

4. Characteristic 4: Short-term Reliability. The RTO must have exclusive authority for maintaining the short-term reliability of the grid that it operates. (Proposed 35.34(i)(4))
  - a. The RTO must have exclusive authority for receiving, confirming and implementing all interchange schedules. (Proposed 35.34(i)(4)(i))

209/ Midwest ISO, 84 FERC at 62,155-56.

210/ We note that this was also the conclusion of the blue-ribbon Electric Reliability Panel of NERC. In its final report, the panel concluded that "it is essential that the security coordinators perform their functions independent of any market influences." The panel recommended that security coordinators should be "structured as independent entities, or their role subsumed into independent system operator-type organizations." NERC, Electric Reliability Panel, "Reliable Power: Renewing the North American Electric Reliability Oversight System," December 1997, at 35.

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Historically, interchange schedules have referred to the scheduling actions between adjacent control areas. These schedules could be triggered by the sale or exchange of

electricity or the wheeling of electricity between the two control areas. The first type of action, the sale or exchange of electricity between control areas, usually has not been accompanied by a separate transmission transaction. Instead, the transmission service was implicit in the overall transaction and, therefore, its cost was not quoted separately. With the growth of unbundled transmission service, triggered in part by our Order No. 888 requirements, bundled interchange transactions will become rarer. This means that in the future, interchange schedules will generally be accompanied by, and coincide with, transmission schedules.

We are proposing that an RTO "must receive and evaluate all requests for transmission service under its own FERC approved tariff." 211/ If the RTO operates a control area, this implies that the RTO will also be receiving, confirming and implementing interchange schedules. Therefore, the three actions should go hand-in-hand for an RTO that operates a control area. However, this may not be the case for RTOs that do not operate control areas. As we stated in our Midwest ISO order, our basic concern is that non-RTO control area operators who are also competitors in power markets may be "able to know their competitors'

211/ See the discussion of Function 1 (Tariff Administration and Design), *infra*.

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schedules or transactions..." 212/ If this is true, such knowledge would give the control area operators an unfair competitive advantage. The Commission directed the ISO to monitor for this potential problem and report to us immediately if the problem arises. We recognize, however, that it may be

difficult to detect this discrimination. In addition to our current code of conduct standards, are there any actions that the Commission should require to reduce the likelihood of this problem that do not require the consolidation of all existing control areas within the region? Is it feasible for a non-RTO control area operator, operating within an RTO region, to perform its functions without having access to commercially sensitive information involving its competitors? For example, could an RTO provide control area operators with information about scheduled net interchanges between control areas without disclosing the individual transactions making up the new interchanges? 213/

- b. The RTO must have the right to order redispatch of any generator connected to transmission facilities it operates if necessary for the reliable operation of these facilities. (Proposed 35.34(i)(4)(ii))

As we have stated before, the dividing line "between transmission control and generation control is not always clear because both sets of functions are ultimately required for

212/ See Midwest ISO, 84 FERC at 62,154-55.

213/ See Id. at 62,160.

reliable operation of the overall system." 214/ The entity that controls the transmission system must have some degree of control over some generation. 215/ In general, we do not think that this authority should extend to initial unit commitment and dispatch decisions of generators. However, the Commission believes that it is necessary and appropriate that the RTO have authority to order redispatch of any generating unit when necessary for the

reliability of the grid.

- c. When the RTO operates transmission facilities owned by other entities, the RTO must have authority to approve and disapprove all requests for scheduled outages of transmission facilities to ensure that the outages can be accommodated within established reliability standards. (Proposed 35.34(i)(4)(iii))

Control over transmission maintenance is a necessary RTO function because planned and unplanned outages of individual transmission facilities affect the overall transfer capability of the grid. If a facility is removed from service for any reason, the power flows on all regional facilities are affected. These shifting power flows may cause other facilities to become overloaded, and so adversely affect system reliability. The availability or unavailability of specific transmission

214/ Id. at 62,151.

215/ This seems to be generally recognized in the industry. For example, the participants in the Midwest ISO proposed that the ISO "will possess authority over generation to the extent that generation affects transmission." See ER98-1438-000, Applicants' Response at 3.

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facilities can also have major effects on electricity market prices. 216/

Under this proposed requirement, the RTO would determine whether the proposed maintenance of transmission facilities could be accommodated within established state, regional and national reliability standards. The RTO's regional perspective will allow it to coordinate individual maintenance schedules with each other as well as with expected seasonal system demand variations. Since the RTO will have access to extensive information, it will

see the "big picture" and be able to make more accurate assessments of the reliability effect of proposed maintenance schedules than individual, sub-regional transmission owners.

If the RTO is a transmission company that owns and operates transmission facilities, these assessments would be an internal company matter. If the RTO is an ISO, it would need to review transmission requests made by various transmission owners (TOs) of its region. 217/ In this latter case, we would expect the RTO to: receive requests for authorization of preferred maintenance outage schedules; review and test these schedules against reliability criteria; approve specific requests for scheduled

216/ See "Staff Report to the FERC on the Causes of Wholesale Electric Pricing Abnormalities in the Midwest During June 1998," September 22, 1998, at 4-3.

217/ Since some of these transmission owners may also own generation, they may have an incentive to schedule transmission maintenance at times that would increase the prices received from their power sales. A transmission company, not affiliated with any generators, would not have these same incentives.

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outages; require changes to maintenance schedules when they fail to meet reliability standards; and update and publish maintenance schedules on a regular basis.

The Commission requests commenters to address a number of questions related to this proposed requirement. Does it cede too much or too little authority to the RTO? If the RTO requires a transmission owner to reschedule its planned maintenance, should the transmission owner be compensated for any costs created by the required rescheduling? Would it be feasible to create a market mechanism to induce transmission owners to plan their maintenance so as to minimize reliability effects? Should an RTO

that is an ISO have any authority to require rescheduling of maintenance if it anticipates that the planned maintenance schedule will adversely affect power markets? If the RTO is a transco, can it manipulate its transmission maintenance schedules in a manner that harms competition?

The proposed requirement does not give the RTO any authority over proposed generation maintenance schedules. However, in our order approving the Midwest ISO, we observed that "the dividing line between transmission control and generation control is not always clear because both sets of functions are ultimately required for reliable operation of the overall system." 218/ Should the RTO have some authority over generation maintenance schedules? If so, how much authority should it have?

218/ Midwest ISO, 84 FERC at 62,180.

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We also anticipate that the RTO will need to establish performance standards for transmission facilities under its direct or contractual control. Such standards could take the form of targets for planned and unplanned outages. The rationale for this requirement is that two transmission owners should not receive equal compensation if one owner operates a reliable transmission facility while the other operates an unreliable facility. For RTOs that are transcos, we would anticipate that such quality standards would be implicit or explicit in any performance based regulatory proposal. 219/ Is it possible for a non-profit ISO to establish similar incentive schemes for the transmission owners whose facilities it operates?

Facility ratings. It is widely recognized that reliable

operation of the transmission system in the short-term requires both continuous monitoring of equipment availability and loading, and actions to maintain loading levels within the established operating ranges and equipment ratings. If a transmission line or other facility becomes overloaded or experiences a forced outage, the short-term reliability of the power system may be threatened. Therefore, we anticipate that the RTO will need to monitor equipment availability and loading so that it can

219/ We note that the National Grid Company in England and Wales reports annually on quality of service in certain dimensions (system availability, interconnector availability, system security and quality of supply) to the Director General of Electricity Supply. See National Grid Company "Report to the Director General of Electricity Supply, Financial Year 1997-98." A copy of this report will be placed in the public record.

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determine which control actions or redispatch options are necessary. The options open to the RTO for ensuring short-term reliability, such as direct control of transmission facilities, initiating transmission loading relief procedures or pursuing redispatch options and bids, are discussed in other sections.

To determine whether existing or scheduled power flows will threaten short-term system reliability, flow levels must be compared to ratings established in power flow reliability studies. The entity that establishes these ratings and operating ranges will have a major influence on the reliable operation of the power system. Its determinations will not only affect system reliability but also ATC. The Commission believes that RTOs are best situated to establish ratings and operating ranges for two reasons. First, they will have the most complete information about expected and real-time operating conditions. Second, RTOs

will be trusted since they will be independent in two ways: they will not have any economic interests in electricity market outcomes and they will not be owned or controlled by any market participants.

The Commission recognizes that an RTO that is an ISO may initially need to rely upon existing values for equipment ratings and operating ranges so as not to disrupt reliable system operation. The RTO will then have the ongoing task of validating and updating these existing values, focusing initially on those identified as critical to the development of a competitive electricity market.

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The Commission understands that transmission owners may be concerned that changes in existing equipment ratings may lead to problems of equipment safety and possible damage. These concerns could trigger disputes over the values established by the RTO. We propose that if there is a dispute over values established for equipment ratings, the RTO values will prevail until the outcome of the dispute resolution process. It is the intent of the Commission to promote RTOs that have the expertise and personnel capable of determining both equipment ratings and operating ranges necessary to maintain system reliability. In addition, since RTOs will be independent of all stakeholders in the electricity market, they will not have an incentive to distort the operation of electricity markets by manipulating equipment ratings and reliability assumptions. And most significantly, since the RTO is ultimately responsible for system reliability, it will be careful not to harm system equipment. Therefore, to avoid an impasse over equipment ratings that are determined by

one market participant and contested by a second, we believe that the RTO's values should prevail when there is disagreement, until resolution is reached through an ADR process approved by the Commission. 220/

The Commission asks commenters to address the following issues. Given that an RTO has responsibility for system reliability, what should be the extent of its liability for its

220/ This is the same policy that we adopted in approving the Midwest ISO. See Midwest ISO, 84 FERC at 62,165-66.

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actions? Would this differ depending on whether the RTO owns the facilities?

- d. If the RTO operates under reliability standards established by another entity (e.g., a regional reliability council), the RTO must report to the Commission if these standards hinder it from providing reliable, non-discriminatory and efficiently priced transmission service. (Proposed 35.30(i)(4)(iv))

RTOs may be new organizations. However, they will be sharing some of their responsibilities with existing organizations. For example, the New England ISO shares its responsibilities with the NEPOOL RTG. 221/ The New York ISO shares its reliability responsibilities with the New York State Reliability Council. We anticipate that, in the near future, RTOs will be implementing reliability standards that are established by a separate regional reliability council. 222/ We believe this is necessary to maintain the reliable operation of the grid, but it also raises concerns because almost every reliability standard will have a commercial consequence, and regional or sub-regional reliability groups may not be as

221/ Commissioner Malachowski, representing the New England Conference of Public Utility Commissions (NECPUC), stated that the current sharing of power between the New England ISO and NEPOOL is unsatisfactory. He said that the New England commissions believe that more decision making authority must be transferred to the ISO. As a specific example, he mentioned the need for the ISO to have more direct authority over market design. RTO Conference (Washington, D.C.), transcript at 123.

222/ In Order 888, we required that any ISO should "comply with the applicable standards set by NERC and the regional reliability council." (ISO Principle No. 4)

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independent of market participants as RTOs. 223/ As a consequence, an RTO could be required to implement a reliability standard that may favor the commercial interests of certain types of market participants when an equally effective, but more commercially neutral, variant of the standard might be feasible. Therefore, it is important that the RTO notify us immediately if implementation of externally established reliability standards will prevent it from meeting its obligation to provide reliable, non-discriminatory transmission service.

#### Minimum Functions

1. Function 1: Tariff Administration and Design. The RTO must administer its own transmission tariff and employ a transmission pricing system that will promote efficient use and expansion of transmission and generation facilities. (Proposed 35.30(j)(1))

The pro forma open access transmission tariff that accompanied Order No. 888's functional unbundling is based on a traditional approach to transmission service: it relies on embedded cost ratemaking, contract path scheduling and physical rights to service. We recognized that it did not break new ground on transmission pricing because it was based "on the practices and procedures" that were traditionally used by public

223/ See Central Hudson, 83 FERC at 62,411 for a discussion of our concerns about the relationship between the New York ISO and the New York State Reliability Council. In this instance, we were willing to accept the fact that the NYSRC will establish rules that the ISO would implement because any new rule or revisions to existing rules would be "subject to immediate suspension by the NYSRC if requested to do so by the New York ISO." Id.

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utilities that owned transmission facilities. Instead, the focus of the pro forma tariff is on the non-price terms and conditions of transmission service needed to get non-discriminatory transmission service. Our intent was to "initiate open access" for individual transmission providers. We stated that our issuance of the pro forma tariff was "... not intended to signal a preference for contract path/embedded cost pricing for the future." 224/ In the Capacity Reservation Tariff (CRT) NOPR that was issued at the same time, we emphasized that: "...the Commission is not committed to traditional tariff design." 225/ Since the issuance of Order No. 888, the Commission has encouraged transmission providers to come forward with other open access transmission tariffs that they believe have pricing provisions that are equal or superior to the mandated tariff that was part of the Order No. 888 initiative.

To date, the most significant innovations in transmission access and pricing have been brought to us by ISOs. This is not surprising. Given the interconnectedness of the grid, it is necessary to introduce regional pricing innovations through some kind of regional organization. This cannot be done by individual transmission providers acting alone. We anticipated that regional organizations would be the likely innovators in our Transmission Pricing Policy Statement. Among the innovations

that have been proposed since the issuance of Order No. 888 are:

224/ Order No. 888, FERC Stats. & Regs. at 31,666-67.

225/ CRT NOPR, FERC Statutes and Regulations at 33,228 (1996).

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locational pricing; fixed transmission rights (FTRs) and transmission congestion contracts (TCCs) that give defined financial rights to grid users (i.e., financial rather than physical rights to the grid); and explicit market-based pricing of congestion and ancillary services. 226/ In almost every instance, we have approved these proposals because they offer the promise of promoting overall operating efficiency and encouraging fair, open and competitive energy markets.

Therefore, we take this opportunity to reaffirm the importance of such reform by establishing it as an explicit obligation for qualifying RTOs. The wording of this requirement is general and this is intentional. The Commission believes that RTOs are in the best position at this time to develop innovative transmission access and pricing regimes that will promote competition and meet the needs of their region. The Commission invites commenters to address whether more specific guidance is required.

In carrying out Function 1, the RTO must satisfy each standard discussed below, or demonstrate that an alternative proposal is consistent with or superior to satisfying the standard.

226/ See, e.g., Pacific Gas & Electric, 81 FERC - 61,122 (1997),

Central Hudson, 83 FERC - 61,352 (1998), NEPOOL, 85 FERC - 61,242 (1998); PJM, 81 FERC - 61,257 (1997).

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- a. The Regional Transmission Organization must be the only provider of transmission service over the facilities under its control, and must be the sole administrator of its own Commission-approved open access transmission tariff. The Regional Transmission Organization must have the sole authority to receive, evaluate, and approve or deny all requests for transmission service. The Regional Transmission Organization must have the authority to review and approve requests for new interconnections. 227/ (Proposed 35.30(j)(1)(i))

The rationale for this standard is straightforward. The RTO cannot ensure nondiscriminatory transmission service to all market participants unless it is the sole provider of transmission service over facilities that it owns or controls. If it is to be an effective "provider", it must be the only entity that receives, evaluates and approves or denies requests for transmission service. However, it cannot make informed decisions unless it has accurate and unbiased information about pending transmission requests and current system conditions. This, in turn, implies that in addition to being the transmission service provider, the RTO must be the operator of the OASIS site as well as the regional security coordinator (see the discussion of function 5 and characteristic 3).

An organization like an independent scheduling administrator that simply monitors the scheduling decisions of current transmission owners and offers dispute resolution services in case of a dispute would not qualify as an RTO. Similarly, a

227/ The Commission, of course, retains ultimate authority to order transmission services and interconnections pursuant to the FPA.

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transmission organization that offers service under another entity's tariff would not meet this standard.

An RTO's obligation to provide nondiscriminatory transmission service is not limited just to existing users. It is important that the RTO ensures nondiscriminatory access to transmission service for new entrants such as new generators. This requires that the RTO, rather than existing transmission owners, have the authority to review and approve requests for interconnections. The Commission believes that the RTO cannot be an effective provider of transmission service if it lacks the authority to ensure that new customers are interconnected to the grid. This standard should be relatively easy to implement for an RTO that owns transmission facilities. However, it may be more difficult for an RTO that does not own transmission facilities because actual physical construction of the interconnection facilities will usually be made by an existing transmission owner who may also be a competitor of the new generator. Therefore, the Commission invites comments on how this standard can be made effective for RTOs that are ISOs. Are there lessons to be learned from the experience of qualifying facilities (QFs) under PURPA in getting interconnections to the grid that would be applicable to ISOs? Should this standard be expanded to give the RTO the authority to review and approve all new interconnections (e.g., to connect new generators, to improve reliability, to increase trading opportunities with neighboring

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regions) or all transmission investments above some threshold dollar amount?

- b. The RTO tariff must not result in transmission customers paying multiple access charges to recover capital costs over facilities that it controls (i.e., no pancaking of transmission access charges). (Proposed 35.34(j)(1)(ii))

The elimination of transmission rate pancaking for large regions is a central goal of the Commission's RTO policy. Therefore, the offering of non-pancaked transmission access charges is a requirement for a conforming RTO. In the existing world of many individual transmission service providers, transmission customers have generally been required to pay an access charge to each transmission provider along the contract path (and pay nothing to providers off the contract path). This is a form of distance-based transmission pricing, but the charge is a function of corporate boundaries crossed on the contract path rather than distance traveled on actual flow paths. Such pancaked transmission charges have led to multiple transmission charges across several transmission systems and make it difficult to create region-wide power markets. Competition is clearly enhanced when customers are able to access larger numbers of generators over a wide geographic region when they pay a single transmission access charge. In Order No. 888, we required tight power pools and holding companies to offer a system-wide tariff with non-pancaked rates. 228/ To date, non-pancaked transmission

228/ Order No. 888, FERC Stats. & Regs. at 31,727-29, 31,731.

access charges have been a feature of all five ISOs that we have approved. In this NOPR, we are proposing to extend that

requirement to RTOs.

Would the requirement for a tariff with non-pancaked rates make the voluntary formation of RTOs more difficult because it might result in the potential for sudden and unacceptable transmission rate charges? Is the severity of any such problem related to the scope and regional configuration of the proposed RTO? Does the use of so-called license plate design allow the RTO to meet this requirement without cost shifting? Would the provision for a reasonable transition period help?

Waiving of access charges. While the Commission wishes to encourage more efficient intra-regional trade, it also would like to encourage inter-regional trade. Boundaries are always a potential impediment to trade, whether between states, RTOs or countries. Therefore, we encourage RTOs to negotiate the mutual waiving of transmission access charges to increase the size of effective trading areas. In the Midwest ISO proceeding, we were told that this was difficult to implement. 229/ Therefore, commenters are requested to recommend actions that the Commission could take to facilitate reciprocal waiving of access charges. Even if there is mutual waiving of access charges, are there other pricing impediments to inter-regional trade (e.g.,

229/ See Response of Midwest ISO Participants, May 1, 1998, at 11-13.

differences in scheduling and curtailment conventions between regions) that are likely to impede trade?

2. Function 2: Congestion Management. The RTO must ensure the development and operation of market mechanisms to manage transmission congestion. (Proposed 35.34(j)(2)).

In carrying out Function 2, the RTO must satisfy each standard discussed below, or demonstrate that an alternative proposal is consistent with or superior to satisfying the standard.

- a. The market mechanisms must accommodate broad participation by all market participants, and must provide all transmission customers with efficient price signals regarding the consequences of their transmission usage decisions. The RTO must either operate such markets itself or ensure that the task is performed by another entity that is not affiliated with any market participant.  
(Proposed 35.34(j)(2)(i))

As we stated in our recent order addressing NERC's transmission loading relief (TLR) procedures, the traditional approaches to congestion management may no longer be acceptable in a competitive, vertically de-integrated industry. 230/ For example, the use of administrative curtailment procedures has important economic consequences for market participants, yet such procedures are usually invoked without regard to the relative value of transactions that are curtailed. This can lead to a considerable disruption of power markets and can be financially damaging for market participants. The Commission has concluded that efficient congestion management requires a greater reliance

230/ See NERC, 85 FERC at 62,364.

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on market mechanisms. 231/ Recent experience suggests that only a large regional organization like an RTO will be able to create a workable and effective congestion management market. 232/

As we noted in our order approving the PJM ISO, markets that are based on locational marginal pricing and financial rights for firm transmission service provide a sound framework

for efficient congestion management. 233/ However, just as we do not intend to mandate a single corporate form for RTOs, we will not require one specific market approach to congestion management. It is our intent to give RTOs considerable flexibility in experimenting with different market approaches to managing congestion. However, we believe that a workable market approach to congestion management should generally establish clear and tradeable rights for transmission usage, promote efficient regional dispatch, support the emergence of secondary markets for transmission rights, and provide market participants

231/ Id.

232/ The recent experience of Commonwealth Edison suggests that redispatch markets operated by individual utilities will not be able to elicit an adequate response by generators. After six months of an experimental program, Commonwealth concluded that it is "difficult for one transmission owner to identify and implement redispatch" when the physical limitations and cost effective options for relief are on other transmission systems. According to Commonwealth, the only viable solution would be for the redispatch market to be operated by a regional transmission system operator. See Commonwealth Edison, Interim Report on Non-Firm Redispatch, Docket No. ER98-2279, December 17, 1998, at 4 and 10.

233/ See, e.g., PJM, 81 FERC 62,252-53.

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with the opportunity to hedge locational differences in energy prices.

A market approach to congestion management should lead to more efficient transmission prices. As we explained in our Transmission Pricing Policy Statement, an efficient pricing policy must meet certain objectives. 234/ Of the four objectives set forth in the Policy Statement, two are particularly relevant for congestion management. First, the generators that are

dispatched in the presence of transmission constraints should be those that can serve system loads at least cost, given the constraints. Second, given that the demand for transmission services during periods of congestion exceeds the system's ability to supply them, the limited transmission capacity should be used by market participants that value that use most highly.

In designing market mechanisms for congestion management, the Commission recognizes that it is important to consider the time frame in which decisions must be made and actions must be taken. It is the nature of electric systems that operating conditions, including those that lead to the presence or absence of congestion, are constantly changing. Thus, to manage congestion efficiently while ensuring safety and reliability, system operators must be able to take decisive action quickly.

One possible implication of this need for quick, decisive action is that markets that directly support congestion

234/ Transmission Pricing Policy Statement, FERC Stats. & Regs. at 31,140-44.

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management may have to be subject to some coordination by the RTO. For example, a congestion market that is not coordinated by the RTO might require transmission customers to negotiate individually with generators to pre-arrange an alternative dispatch that would allow the transmission customer's transaction to proceed (or to be efficiently altered) if and when congestion arises. However, because congestion can occur suddenly and unexpectedly, time may not permit the operator to 1) identify impending transmission constraints, 2) inform customers whose transactions are affected, 3) allow customers to contact

generators, and 4) receive instructions from customers as to what actions they wish the operator to take with respect to their pending transactions. We have expressed concerns that such a process may be unwieldy and even unworkable in the limited time in which operators must act. 235/ Although the process could be simplified by completing some of these activities in advance, such simplifications may come at the cost of eliminating some potentially efficient options.

The Commission invites comments on our requirement that RTOs must be responsible for managing congestion with a market mechanism. Can decentralized markets for congestion management be made to work effectively and quickly? Can the RTO's role be limited to that of a facilitator that simply brings together

235/ We expressed similar concerns in our order authorizing the formation of the Midwest ISO. See Midwest ISO, 84 FERC at 62,165-66. Nevertheless, we opted to allow the Midwest ISO to go forward with its proposal in order to gain actual operating experience.

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market participants for the purpose of engaging in bilateral transactions to relieve congestion? If not, will these markets require centralized operation by the RTO or some other independent entity? How can an RTO ensure that enough generators will participate in the congestion management market to make possible a least-cost dispatch? Are there any special considerations in evaluating market power in a congestion market operated or facilitated by an RTO?

We propose that the congestion management function need not necessarily be in place on the first day of RTO operation, and propose to allow up to one year after start-up for this function to be implemented. We recognize that the new approaches to

congestion management called for by newly competitive markets may take additional time to work out. We seek comment on whether such an additional implementation time period is warranted, and whether one year is an appropriate additional time period.

3. Function 3: Parallel Path Flow. The RTO must develop and implement procedures to address parallel path flow issues within its region and with other regions. The RTO must satisfy this requirement with respect to coordination with other regions no later than three years after it commences initial operation. (Proposed 35.34(j)(3))

Many power sales and transmission service contracts are written under the assumption that the power delivered will flow on a particular contract path. This relatively straightforward and easy to administer "contract path" approach assumes that it is possible to determine and fix the path through the transmission network along which power will flow from source to

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sink. However, this assumption often does not accurately reflect what actually occurs because the scheduled power transfer will flow across the interconnected electrical path between source and destination according to laws of physics, which means that some power may flow over the lines of adjoining transmission systems. This power flow effect is commonly referred to as "parallel path flow" or "loop flow."

Parallel path flows have the potential to create, and have in the past created, disputes among transmission system owners. There are efficiency and economic equity issues involved when a scheduled transaction in fact causes power flows over the facilities of an entity that is not compensated, or when the costs of mitigating parallel flows are allocated to various transmission owners. 236/ There are also reliability issues

involved when parallel path flows overload a transmission line, and decisions must be made as to what actions to take, and who should bear responsibility for taking necessary steps to unload that line. 237/ The interdependent nature of electricity flow implies that one party's ability to transmit energy will depend upon the actions of others, and, for scheduling and pricing

236/ See Indiana Michigan Power Company and Ohio Power Company, 64 FERC - 61,184 (1993) (Indiana Michigan) (complaint that 95% of a power sale flowed over transmission system that was not compensated); Southern California Edison Company, et al., 73 FERC - 61, 219 (1995) (Southern California) (Commission approved plan for mitigating loop flows within the WSSC).

237/ See NERC, 85 FERC - 61,353 (1998).

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purposes, the capacity of the entire network and not just individual systems is the most important factor. 238/

The Commission has previously expressed its view that the issues surrounding parallel path flow are best resolved by mutual arrangements between the utilities that have chosen to interconnect. 239/ More recently, the Commission directed all public utilities in the Eastern Interconnection to file an interim redispatch plan if they are not currently participating in a regional congestion management program through a power pool. 240/

The Commission believes that the formation of RTOs, with their widened geographic scope of transmission scheduling and expanded coverage of uniform transmission pricing structures provides an opportunity to "internalize" most, if not all, of the effect of parallel path/loop flow in their scheduling and pricing processes within a region. In particular, we believe that RTO

access to region-wide information on network conditions and power transactions, coupled with efficient congestion management and well specified physical and financial transmission usage rights, could help RTOs, as regional grid managers, in taking preemptive action against curtailment incidents that would otherwise be induced by parallel path/loop flow loading of critical

238/ The Order No. 888 pro forma open access tariff does not explicitly recognize the effect of parallel path/loop flow.

239/ See Indiana Michigan, 64 FERC at 62,554.

240/ NERC, 85 FERC at 62,363-64.

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transmission facilities. We anticipate that parallel path/loop flow related disputes will diminish to the extent that RTOs are relatively large and able to implement more realistic scheduling and pricing procedures that subsume the effect of parallel path/loop flow within their regions.

We propose that measures to address parallel path flow may not necessarily be in place on the first day of RTO operation, and propose to allow up to three years after start-up for this function to be implemented. We seek comment on whether such an additional implementation time period is warranted, and whether three years is an appropriate additional time period.

4. Function 4: Ancillary Services. An RTO must serve as the supplier of last resort of all ancillary services required by Order No. 888, FERC Stats. & Regs. - 31,038 (Final Rule on Open Access and Stranded Costs), and subsequent orders. (Proposed 35.34(j)(4))

In carrying out Function 4, the RTO must satisfy each standard discussed below, or demonstrate that an alternative proposal is consistent with or superior to satisfying the standard.

- a. All market participants must have the option of self-supplying or acquiring ancillary services from third parties subject to any general restrictions imposed by the Commission's ancillary services regulations in Order No. 888, FERC Stats. & Regs. - 31,038 (Final Rule on Open Access and Stranded Costs), and subsequent orders. (Proposed 35.34(j)(4)(i))

An RTO is a transmission provider and therefore is subject to the general requirements established by the Commission for the

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provision of ancillary services under Order Nos. 888 and 889 and succeeding orders. Specifically, these require that the transmission provider must provide or cause to be provided six ancillary services on an unbundled basis. 241/ Of the six ancillary services, a transmission customer is obligated to purchase two of the services from the transmission provider (the RTO)--scheduling, system control and dispatch service and reactive supply and voltage control from generation. For the remaining four services, a transmission customer has the option of self-providing these services, either by acquiring them from a third party or providing them from the customer's own resources.

Our rationale for imposing the ultimate supply obligation on the RTO is that not all transmission customers may be equally able to self-supply (some own generation, others do not) and that in many circumstances it may be more efficient (i.e., less costly) for the RTO to provide the service for all transmission users on an aggregated basis. Our rationale for allowing self-supply is that it provides a possible competitive check on the RTO to ensure that it acquires the services at lowest cost. In addition, the Commission believes, as a matter of policy, that

legal monopolies should not be granted (i.e., serving as the sole

241/ The six ancillary services are: (1) Scheduling, System Control and Dispatching Service; (2) Reactive Supply and Voltage Control from Generation Sources Service; (3) Regulation and Frequency Response Service; (4) Energy Imbalance Service; (5) Operating Reserve-Spinning Reserve Service; and (6) Operating Reserve-Supplemental Reserve Service. Order No. 888, FERC Stats. & Regs. at 31,706-17; Order No. 888-A, FERC Stats. & Regs. at 30,227-34.

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provider of ancillary services) unless they are natural monopolies.

The ancillary services policies in Order Nos. 888 and 889 were developed for transmission providers that were generally vertically integrated utilities. There was an expectation that they would be able to provide many of the generation based ancillary services from their own generating resources. An RTO by definition will not own any generating resources. Does this difference necessitate a different set of ancillary service requirements for RTOs? Are there other ancillary services, in addition to scheduling, system control and dispatch, and reactive supply and voltage control from generation sources, for which the self-supply option should be eliminated? Under what circumstances can the RTO's obligation as the ancillary services supplier of last resort be eliminated?

- b. The RTO must have the authority to decide the minimum required amounts of each ancillary service and, if necessary, the locations at which these services must be provided. All ancillary service providers must be subject to direct or indirect operational control by the RTO. The RTO must promote the development of competitive markets for ancillary services whenever feasible. (Proposed 35.34(j)(4)(ii))

This policy would, in effect, grant RTOs the exclusive right, subject to national and regional reliability norms, to

determine the quantities and, in some instances, the locations at which certain ancillary services must be provided. It would also require that the RTO be able to exercise complete operational

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control, either directly or indirectly, over any supplier of ancillary services.

Direct control (sometimes referred to as hands-on control or actual physical operation) would require, for example, that RTO employees "push the button" or that RTO computers send instructions directly to generating units or other facilities to take certain physical actions. Automatic generation control (AGC) might be one example of direct control. If the RTO has direct control, it would have authority, by contract or other means, to send direct electronic signals to those generators who have offered, in return for a payment, to increase or decrease the output of their units in response to the RTO's signals.

Indirect control (sometimes referred to as functional control, directed control or contractual control) requires that the RTO send instructions to the owner of the facility who then, in turn, performs the actual physical actions to implement these instructions. Indirect control usually requires that there be a contractual agreement between the RTO and the owner of the facilities that has agreed to provide ancillary services.

The Commission requests commenters to address whether these are minimum requirements needed to ensure that the RTO can satisfy its obligation to maintain targeted levels of reliability. Would it be feasible for the RTO to maintain reliability with less authority?

In our Midwest ISO order, we stated that the ISO "...should

use competitive procurement for all services needed to operate

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the system." 242/ This general requirement would apply to ancillary services since they are clearly needed to operate a reliable bulk power system. One prerequisite for competitive procurement is a competitive market. 243/ The Commission would anticipate that many of the generation-based ancillary services (e.g., balancing and reserves) could be acquired in short-term markets that would operate in parallel to basic energy markets. 244/ This has been the approach taken by most of the ISOs that we have approved and we see no reason why this would be different for transcos or other types of RTO entities. Other services such as black start capability and voltage support are probably best acquired in long-term markets where potential suppliers would compete for the right to enter into a long-term contract with the RTO. Apart from establishing the general requirement to use competitive markets, the Commission believes that it is best to leave many of the detailed market design questions to the

242/ See Midwest ISO, 84 FERC - 61,231 at 62,164 (1998).

243/ However, we recognize that the existence of a competitive supply market for ancillary services is no guarantee that the RTO will automatically buy efficiently. Therefore, since the RTO may be the de facto buyer of many of these services, the Commission is receptive to performance-based regulatory proposals that would give RTOs explicit incentives to be efficient buyers of ancillary services. See Section III.F.

244/ See Eric Hirst and Brendan Kirby, Unbundling Generation and Transmission Services for Competitive Electricity Markets, a report prepared for the National Regulatory Research Institute(NRRI 98-05), January 1998.

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individual RTOs with case-by-case review by us. 245/ As we noted earlier, we intend to permit regional flexibility and encourage experimentation. Such experimentation would be discouraged if we issued regulations that are too detailed.

The Commission believes that, whenever it is economically feasible, it is important for the RTO to provide accurate price signals that reflect the costs of supplying ancillary services to particular customers. Accurate price signals are especially important because some of the RTO's customers may be competing against each other in other power sales markets. It is important that the RTO's actions not distort regional power market competition by charging potential competitors inaccurate prices for ancillary services that they purchase from the RTO.

- c. The RTO must ensure that its transmission customers have access to a real-time balancing market. The RTO must either develop and operate such markets itself or ensure that this task is performed by another entity that is not affiliated with any market participant. (Proposed 35.34(j)(4)(iii))

Real-time balancing refers to the moment-to-moment matching of loads and generation on a system-wide basis. It is a function

245/ These would include design issues such as: Are ancillary service bids received before, after or at the same time as energy market bids? Do ancillary service markets clear simultaneously or sequentially? Must the RTO publicly announce the amount of each ancillary service that it needs prior to bidding? What do generators bid (capacity, energy or both)? If there are multiple bid components, are they evaluated together or separately? Should the RTO acquire ancillary services from outside its region? These are some of the design issues that have arisen in the operation of ancillary markets by the California ISO. We expect that there will be other design issues as other ancillary market proposals are presented to us.

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that control area operators must perform to maintain frequency at 60 hz. Real-time balancing is usually achieved through the direct control of select generators (and, in some cases, loads) who increase or decrease their output (or consumption in the case of loads) in response to instructions from the system operator. Over the last two years, the Commission has seen an increasing use by system operators of market mechanisms that rely on bids from generators to achieve overall, real-time balancing. 246/ Since system-wide balancing is a critical element of reliable short-term grid operation, we will require that it be a responsibility of the RTO. The Commission would expect that an RTO will perform the overall system balancing function directly if it operates a control area or indirectly if it supervises the operation of sub-regional control areas.

A separate, but related, issue is balancing by individual grid users. The fact that the overall system must be in balance to maintain frequency does not necessarily require that there be a moment-to-moment balance between the individual loads and resources of bilateral traders and load-serving entities and the schedules and actual production of individual generators. Imbalances are inevitable since generators do not exactly meet their schedules and loads always vary from moment-to-moment.

246/ See Pacific Gas & Electric, 81 FERC - 61,122 (1997), Central Hudson, 83 FERC - 61,352 (1998), NEPOOL, 85 FERC - 61,242 (1998); PJM, 81 FERC - 61,257 (1997).

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As we noted in the Midwest ISO order, unequal access to balancing options for individual customers can lead to unequal

access in the quality of transmission service available to different customers. This could be a significant problem for RTOs that serve some customers who operate control areas and other customers who do not. Under current NERC regulations, control area operators have access to inadvertent energy accounts so they can pay back imbalances in kind and thereby avoid any penalties. 247/ In contrast, non-control area transmission customers do not have access to such accounts. Instead, under the pro forma tariff, load serving entities are subject to a deadband and then penalties if the magnitude of their imbalances fall outside the deadband. Our concern, as we stated in our Midwest ISO order, is that "nondiscriminatory access would suffer" under such a system. 248/ Therefore, the Commission proposes to require that RTOs operate a real-time balancing market that would be available to all transmission customers, or ensure that this task is performed by another entity not affiliated with market participants. 249/

247/ NERC Operating Manual, at P1-9.

248/ Midwest ISO, 84 FERC at 62,155.

249/ We have already approved such markets for four ISOs. See, e.g., PJM Interconnection, L.L.C., Order Accepting In Part and Rejecting In Part Proposed Revisions To Rate Schedules, September 16, 1998 and New England Power Pool, "Order Conditionally Accepting Market Rules and Conditionally Approving Market Based Rates, 85 FERC - 61,379 (1998). These markets generally allow all transmission customers to settle their imbalances at real time energy market prices.  
(continued...)

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The Commission believes that it is important to give RTOs considerable discretion in how such a market would be operated. An RTO may choose to operate the market itself or assign the task to another entity (e.g., a for-profit exchange) that would

operate the market under the RTO's supervision. In addition, the Commission would expect that the design of such a market will necessarily vary between RTOs that operate control areas and those that do not. However, in those instances where RTO does not operate a control area, the RTO must be especially vigilant that transmission customers who continue to operate control areas cannot use that functional responsibility to the disadvantage of non-control area customers. 250/

The Commission invites comments on the use of market mechanisms to support overall system balancing and imbalances of individual transmission users. Is it feasible to rely on markets to support a function that is so time-sensitive? Can such markets be made to function efficiently if the RTO is not a control area operator? For the imbalances of individual transmission customers, should a distinction be made between loads and generators? Should customers have the option of paying

249/ (...continued)

We note that participants in the Midwest ISO have issued a request for proposals that could lead to the establishment of such a market in their region. See Solicitation of Interest, Creation of an Independent Power Exchange for the U.S. Midwest, Joint Committee for the Development of a Midwest Independent Power Exchange (Feb. 5, 1999).

250/ See Midwest ISO, 84 FERC at 62,159-160.

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for all imbalances in such a market or only imbalances within a specified band?

5. Function 5: OASIS and TTC and ATC. The RTO must be the single OASIS site administrator for all transmission facilities under its control and independently calculate TTC and ATC. (Proposed 35.34(j)(5))

The operation of an OASIS site has many dimensions. For

example, it includes specific practices and terminology. In response to a consensus request from the industry, we recently issued a NOPR that proposes to standardize various practices and terms. The focus of that NOPR is on standardization of protocols for posting, naming and responding to posted information. 251/ Apart from these practices, the central and probably most controversial aspect of OASIS operation is the calculation and posting of ATC numbers. The calculation of ATC depends, in turn, on the calculation of TTC. 252/ These calculations are different from business practices in that the focus is on content rather than procedures and practices. There is widespread dissatisfaction with the reliability of posted ATC numbers. The Commission has received formal and informal complaints from transmission customers stating that they cannot rely on posted ATC numbers. Criticisms of posted ATC numbers have also been the subject of a widely publicized report issued by a major industry

251/ Open Access Same-Time Information System, Notice of Proposed Rulemaking, FERC Statutes and Regulations - 32,531 (1998).

252/ See section III.A.1 for definitions of these terms.

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group. 253/ It is been alleged that transmission providers who also compete in power markets against their competitors have both the incentive and ability to post unreliable ATC numbers. 254/

We recognize that an individual transmission provider may post ATC numbers on OASIS in good faith only to find that the projected capability does not exist because of scheduling decisions taken by other transmission providers elsewhere on the grid. In such circumstances, transmission providers are not

acting unscrupulously. Instead, the problem is simply a mismatch between information flows and electrical flows. Regional transmission organizations that perform ATC calculations based on complete and timely information would tend to eliminate this problem. This seems to be supported by fact that the Commission has received very few complaints about ATC calculations made by ISOs.

The essential feature of our proposed requirement is that the RTO become the administrator of a single OASIS site for all transmission facilities over which it is the transmission provider. This is consistent with earlier orders. 255/ Moreover, every ISO that we have approved so far has become the OASIS site administrator for the customers that it serves.

253/ Commercial Practices Working Group and the OASIS How Working Group, "Industry Report to the Federal Energy Regulatory Commission on the Future of OASIS, October 31, 1997

254/ This is discussed more fully in Section III.A.

255/ In the Primergy merger order, we required that the proposed ISO should be "responsible for calculating ATC." See Primergy, 79 FERC - 61,158, May 14, 1997.

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However, we recognize that this generally stated requirement inevitably raises questions as to the level of RTO involvement in ATC calculations. An RTO could be involved in ATC calculations at three general levels. At Level 1, the RTO's role would be limited to receiving and posting ATC numbers received from transmission owners. At Level 2, the RTO would receive raw data from transmission owners and centrally calculate ATC values. At Level 3, the RTO would centrally calculate ATC values on data partially or totally developed by the RTO. The proposed requirement that the RTO be the OASIS site administrator is based

on the expectation that the RTO will operate at Level 3.

The RTO must eventually operate at Level 3 to ensure that ATC values are based on accurate information that is based on consistent assumptions and to minimize the opportunities for conscious manipulation. In general, the RTO must perform all the calculations and studies necessary to develop the underlying data. When data are supplied by others, the RTO must create a system for regularly validating the data for accuracy and assumptions. If there is a dispute over ATC values, the RTO's values should be used pending the outcome of the dispute resolution process. 256/ The RTO must also establish the operating standards (subject to regional and national reliability requirements) underlying the ATC calculations.

256/ This is the same requirement that the Commission imposed on the Midwest ISO. See Midwest ISO, 84 FERC at 62,154.

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6. Function 6: Market Monitoring. The RTO must monitor markets for transmission services, ancillary services and bulk power to identify design flaws and market power and propose appropriate remedial actions. (Proposed 35.34(j)(6))

In carrying out Function No. 6, the RTO must satisfy each standard discussed below, or demonstrate that an alternative proposal is consistent with or superior to satisfying the standard.

- a. The RTO must monitor markets for transmission service and the behavior of transmission owners, if any, to determine if their actions hinder the RTO in providing reliable, efficient and nondiscriminatory transmission service. (Proposed 35.34(j)(6)(i))

- b. The RTO must monitor markets for ancillary services and bulk power. This obligation is limited to markets that the RTO operates. (Proposed 35.34(j)(6)(ii))
  
- c. The RTO must periodically assess how behavior in markets operated by others (e.g., bilateral power sales markets and power markets operated by unaffiliated power exchanges) affects RTO operations and conversely how RTO operations affect the performance of power markets operated by others. (Proposed 35.34(j)(6)(iii))

The RTO's role as market monitor. To date, the Commission has found monitoring to be essential in helping to ensure non-discrimination and efficiency in the provision of transmission and ancillary services; encourage fair, open, and competitive energy markets; and promote overall operating efficiency. 257/

257/ Pacific Gas & Electric, 81 FERC at 61,552; PJM, 81 FERC at 62,282; NEPOOL, 85 FERC at 62,479-480; Midwest ISO, 84 FERC (continued...)

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As we stated in the New England ISO order, "markets are likely to evolve in ways that may not be totally anticipated. To ensure that the markets operate competitively and efficiently, it is important that any problems involving market power or market design are quickly identified so that appropriate solutions can be crafted." 258/ To date, we have been willing to use ISOs, or their independent monitoring organizations, as a "first line of defense" in detecting both market power abuses and market design flaws.

The proposed requirements are arguably based on the presumption that an RTO will be a non-profit, system operator that does not own any facilities. The requirements may not be appropriate for a for-profit transco that owns the facilities that it operates. 259/ Therefore, a threshold question is: what

should be the market monitoring role, if any, of an independent, for-profit transco? Is it reasonable to expect that such an RTO could be objective in its assessments? If the RTO is an ISO, do its monitoring activities need to be further insulated to ensure independence and objectivity? For example, should monitoring be performed by one or more individuals or organizations that are

257/ (...continued)  
at 62,180-181.

258/ New England ISO, 85 FERC - 62,379 at 62,479-480 (1998).

259/ We note that at least one entity that is contemplating the creation of a for-profit transmission company has proposed that this company would perform a market monitoring function. See Statement of Mr. Frank Gallaher on behalf of Entergy Corporation, Regional ISO Conference (New Orleans), transcript at 18.

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funded by the RTO but that have the right to issue reports without the RTO's approval?

The Commission believes that RTOs that are ISOs have a significant comparative advantage over other entities in monitoring markets. 260/ First, RTOs have access to considerable information about market conduct and performance. For example, we would expect that an RTO, in the normal course of business, will develop or receive information on quantities of bulk power and transmission services bought and sold by different market participants, expected and real time transmission system conditions, planned maintenance of both generation and transmission facilities and anticipated and real time patterns of load and generation. Second, RTOs will be completely independent of all market participants. For these reasons, the Commission believes that we and our colleagues in state commissions can have great confidence in the RTO market assessments. 261/ Our early

experience with market assessments performed by the New England and California ISOs has been encouraging. The assessments have been comprehensive and objective even to the point of criticizing past actions by the ISOs themselves. 262/

260/ See Midwest ISO, 84 FERC at 62,181.

261/ The early experience with market assessments in California and New England seems to support this conclusion. See AES Redondo Beach, et al., 85 FERC - 61,123 at 61,462 (1998).

262/ See Peter Cramton and Robert Wilson, A Review of ISO New England's Proposed Market Rules, Docket No. ER97-1079, September 9, 1998, and the California ISO Market Surveillance Committee's Preliminary Report On the Operation (continued...)

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Despite the advantages of better information and incentives, the Commission believes that it is neither fair nor feasible to impose a monitoring obligation on RTOs for markets that they do not operate. Our preliminary assessment is that it would be difficult for an RTO to monitor a market in which it does not have information on prices, bidding patterns and marginal costs. However, our experience with ISOs has shown that markets for power, ancillary services and transmission service are inextricably intertwined regardless of how they are organized or who operates them. 263/ Therefore, we are proposing a middle ground for monitoring regional markets not operated by the RTO. The RTO's monitoring of markets operated by others will be limited to assessing how behavior in these markets affects RTO markets and operations and conversely how RTO markets and operations affect these other markets.

The Commission also recognizes that any markets, whether operated by the RTO or others, will inevitably be affected by basic structural characteristics such as the existing pattern of

ownership and control of generation and transmission facilities. Such characteristics are often beyond the control of the RTO. Since our overarching goal in promoting RTOs is to promote fair, open and competitive electricity markets, we and our state

262/ (...continued)  
of the Ancillary Services Markets, Docket No. ER98-2843,  
August 19, 1998 Markets.

263/ See AES Redondo Beach, et al., 85 FERC - 61,123 at 61,453  
and 61,459-460 (1998).

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commission colleagues need to understand how these structural features affect the potential for competition. Therefore, we propose to require RTOs to provide periodic assessments as to the effect of existing structural conditions on the competitiveness of their region's electricity markets. Of all the industry organizations that may exist in a region, we think that an RTO is best suited to make this assessment because of its first hand knowledge of day-to-day grid and generation operations and its independence.

The Commission requests comments on several threshold issues related to these proposed market monitoring requirements. Some argue that RTOs should not be charged with any monitoring responsibilities particularly with respect to market power abuses. 264/ They argue that the antitrust laws and the Commission offer sufficient protection against competitive abuses. Others have argued that RTOs are somewhat akin to organized stock exchanges and that the Commission should follow the SEC precedent of requiring extensive and sophisticated market monitoring by all of the organized exchanges. Are there features of electricity and transmission markets that argue for imposing

similar market monitoring responsibilities on RTOs?

If the Commission decides to require RTOs to provide some form of market monitoring, there are several other questions that arise. Should the Commission rely on RTOs as the "first line of

264/ See, e.g., David B. Raskin, *ISOs: The New Antitrust Regulators?* *The Electricity Journal* (April 1998).

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defense" for detecting both design flaws and market power abuses? If this were our approach, what would be an appropriate role for the Commission in market monitoring? If the RTO is operating one or more markets (e.g., ancillary services), is it reasonable to expect that it can perform an objective self-assessment? Is there a difference in the market monitoring that the Commission can expect from RTOs? For example, if the RTO proposes to take a market position in secondary transmission rights, is it plausible to expect that the RTO can perform an objective assessment of this market? Since the success of retail competition will often depend critically on the actions of RTOs, what should be the role of state commissions in market monitoring?

Scope of monitoring activities: design flaws. In observing the experience of ISOs over the last year, we have learned that new market designs almost inevitably include design flaws that become apparent only after the markets begin operation. 265/ Often these problems arise because of unexpected interactions between different related markets and unanticipated incentives for buyers and sellers. Electricity market restructuring in other countries has also experienced the need to make many revisions to market designs and rules. 266/ These experiences

265/ For example, the ancillary services markets in the summer of 1998 in California behaved at odds with what one would expect in an efficient market. The California ISO market surveillance committee produced an extensive evaluation of this problem which led to discussions of possible solutions.

266/ See, e.g., James Barker, Jr., Bernard Tenenbaum, and Fiona  
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indicate that monitoring is essential to ensure that the markets and structures evolve to ensure just and reasonable rates to consumers. The Commission recognizes that market monitoring can be expensive. We would welcome estimates of the amount of money spent by ISOs to monitor markets and their assessments as to whether they will need to spend more or less money in the future.

Scope of monitoring activities: market power abuses. As we have noted before, it is often difficult to predict whether certain entities will have market power in the future. This is especially true in new markets which operate with new participants and new transmission flow patterns. In situations like this, the past is often not a very good predictor of the future. As a consequence, the Commission has found that in certain situations the better approach is to institute an effective monitoring plan rather than to debate numerous assumptions and projections that inevitably underlie competing market power analyses. 267/ For abuses that arise from market power, should the RTO's role be limited to detecting and describing the abuses? In the case of localized market power (e.g., generating units that must run for reliability reasons), should the RTO have the authority to take corrective actions? If the market power has structural causes, what role should the RTO

266/ (...continued)

Wolfe, "Governance and Regulation of Power Pools and System

Operators: An International Comparison," Energy Law Journal, Volume 18, 1997, at 308-309.

267/ Pacific Gas & Electric, 77 FERC - 61,265 (1996). NEPOOL, 85 FERC - 61,379 (1998).

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have in developing structural solutions? Should RTOs that are ISOs be required to make regular assessments as to whether they have sufficient operational authority?

Sanctions and penalties. The Commission seeks comment on whether RTOs should be allowed to impose penalties and sanctions. Should the penalties be limited to violations of RTO rules and procedures? Should the RTO be allowed to impose penalties for the exercise of market power? How much discretion should the RTO have in setting penalties? For example, should the RTO's penalty authority be limited to collecting liquidated damages?

- d. The RTO must provide reports on market power abuses and market design flaws to the Commission and affected regulatory authorities. The reports must contain specific recommendations about how observed market power abuses and market flaws can be corrected. (Proposed 35.34(j)(6)(iv))

In order for regulatory agencies, interested parties and the general public to benefit from monitoring activities, regular reporting of findings is critical. Other than this general requirement, we do not propose at this time to establish detailed standards on the format, length and content of monitoring reports. We think that these decisions are best left to the RTO.

Should this reporting requirement be limited to producing reports only when a specific problem is encountered? Or should RTOs be required to make periodic reports that assess the state of competition and transmission access even in the absence of specific problems? We note that the California and New England ISOs have committed to producing annual public reports. Arguably

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such reports give market participants and others a regular opportunity to say whether they agree or disagree with the RTO assessment. Also, it is conceivable that such reports would be helpful to any market monitoring activities that this Commission and state commissions may wish to pursue in the future.

7. Function 7: Planning and Expansion. The RTO must be responsible for planning necessary transmission additions and upgrades that will enable it to provide efficient, reliable and non-discriminatory transmission service and coordinate such efforts with the appropriate state authorities. (Proposed 35.34(j)(7))

In carrying out Function 7, the RTO must satisfy each standard discussed below, or demonstrate that an alternative proposal is consistent with or superior to satisfying the standard.

- a. The RTO planning and expansion process must encourage market-driven operating and investment actions for preventing and relieving congestion. (Proposed 35.34(j)(7)(i))

RTOs should be designed to promote efficient usage and efficient expansion of their regional grids. The former requires efficient price signals, such as congestion pricing; the latter requires control over planning and expansion. Our specific proposal is that the RTO should have ultimate responsibility for both transmission planning and expansion within its region. 268/

268/ Investments in new transmission facilities might be needed for a variety of reasons such as interconnecting new generation or load, protecting or enhancing system reliability, improving system operating efficiency and flexibility, reducing or eliminating congestion and minimizing the need for "must-run" contracts with one or  
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This requirement is motivated by the fact that investments in new transmission facilities must be coordinated to ensure a least cost outcome that maintains or improves existing reliability levels. In the absence of a single entity with overall responsibility, there would be danger that transmission investments would work at cross-purposes and possibly even hurt reliability. We recognize that the RTO's implementation of this general requirement will require addressing many specific design issues. 269/ Once again, we propose to give RTOs considerable flexibility in designing a planning and expansion process that works best for its region. We recognize that the specific features of this process must take account of and accommodate existing institutions and physical characteristics of the region.

Within these constraints, the Commission has a clear preference for market-driven operating and investment actions for preventing and relieving congestion. 270/ However, we understand

268/ (...continued)  
more generators.

269/ Our experience with regional transmission groups suggests that the following issues, among others, will need to be addressed: Who establishes the planning criteria? Who sets the design criteria? Should they be uniform across the system or vary with location? Who can initiate studies for transmission investments? Who evaluates and publishes different options? Who recommends which projects should be built and how the costs and benefits of the project should be allocated?

270/ This is a topic that has been discussed widely within the industry. See, e.g, the papers of Steven L. Walton, Indego Transmission Expansion Strategy, Steven Stoft, Five Things You Should Know About Grid Investment and Ray Coxe, New Paradigms for Siting Transmission in Competitive Electric  
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that the feasibility of obtaining market driven solutions requires satisfying other prerequisites. For example, transmission prices must accurately reflect existing patterns of congestion. Accurate congestion prices are the link between current usage and future expansion. Therefore, we place considerable emphasis on the need for RTOs to establish a system of congestion management that establishes clear rights for existing and new transmission facilities and price signals that reflect congestion. (See section III.F) Independent governance is also a necessary condition for efficient expansion. While accurate price signals can signal the need for expansion, such expansion may never be achieved if the RTO operates under a faulty governance system (e.g., a governance system that allows market participants to block expansions that will hurt their commercial interests).

- b. The RTO's planning and expansion process must accommodate efforts by state regulatory commissions to create multi-state agreements to review and approve new transmission facilities. The RTO's planning and expansion process must be coordinated with programs of existing Regional Transmission Groups (RTGs) where necessary. (Proposed 35.34(j)(7)(ii))

At present, certification and siting of new transmission facilities is almost always performed by a state agency, typically the public utilities commission, in the state in which

270/ (...continued)

Markets. These papers are available through the Harvard Electric Policy Group website  
<http://ksgwww.harvard.edu/hepg>.

the facility will be located. 271/ While there have been

discussions about the need for regional certification and siting since most new transmission lines are integral elements of a regional grid system, such proposals have met with little success. 272/ With the growth of RTOs, this could conceivably change. The emergence of a single regional transmission organization on the industry side may encourage the development of regional organizations or agreements that deal with transmission siting and certification on the regulatory side. The Commission believes that this would be a positive development if it is a voluntary decision of the affected states and replaces existing state-by-state determinations that often lack a regional perspective. To facilitate any voluntary actions taken by our state colleagues, we will require that the RTO planning and coordination system must be able to accommodate the possible future emergence of a regional regulatory system.

The Commission recognizes that regional transmission planning in some areas is being performed to varying degrees by

271/ See Ileana Elsa Garcia, State Electric Facility Siting Practices, prepared for the Harvard Electric Policy Group (HEPG), April 10, 1997. Available through the HEPG website at <http://ksgwww.harvard.edu/hepg>.

272/ See NARUC, "Options for Jurisdiction over Transmission Facility Siting," a resource document for the NARUC Committee on Electricity, 1991 and Charles D. Gray, NARUC Assistant General Counsel, Memorandum, January 1995. Available through the HEPG website at <http://ksgwww.harvard.edu/hepg>.

RTGs. 273/ It would be inefficient for RTOs initially to replicate the efforts of RTGs. Therefore, we require that RTOs discuss their planning and expansion with existing RTGs.

However, over time, we would expect that the RTG's planning process would become an RTO function and the need for such coordination would be reduced or eliminated.

- c. If the Regional Transmission Organization is unable to satisfy this requirement when it commences operation, it must file a plan with the Commission with specified milestones that will ensure that it meets this requirement no later than three years after initial operation. (Proposed 35.34(j)(7)(iii))

We recognize that establishing an efficient procedure for transmission planning and expansion may require coordination and agreements among multiple parties and regulatory jurisdictions, and that this may take some time to accomplish. Accordingly, we do not propose that an RTO be capable of performing this function on its first day of operation. We do expect, however, that RTO proposals contain at least a plan explaining how the RTO intends to work toward implementing this function. Such a plan should set forth milestones that will result in this function being performed within three years after initial operation. We seek comment on whether three years is an appropriate amount of time for implementation of this function.

273/ The Commission has approved RTGs for the New England Power Pool, et al., 83 FERC - 61,045 (1998), Mid-Continent Area Power Pool, 76 FERC - 61,261 (1996), Northwest Regional Transmission Association, 71 FERC - 61,397 (1995), Western Regional Transmission Association, 71 FERC - 61,158 (1995), and Southwest Regional Transmission Association, 69 FERC - 61,100 (1994).

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E. Open Architecture

The Commission believes that RTOs hold great promise in accomplishing our goal of promoting competition in regional wholesale electricity markets. That is why we want to accelerate their development. We understand that there are many difficult

organizational, technical, and policy issues that must be addressed in realizing proposals, and that markets are evolving quickly and possibly in ways that cannot be foreseen at the time of RTO organization. Further, the nature of the institutions supporting the markets may change over time as well.

For these reasons, the Commission will require that RTO design have the ability to evolve over time. The Commission is committed to a policy of "open architecture." Simply put, open architecture requires that there be no provision in any RTO proposal that precludes the RTO and its members from improving their organizations to meet market needs. The Commission will provide the regulatory flexibility to allow such evolution.

Under open architecture, an RTO should be able to evolve in several ways, as long as it continues to satisfy the minimum RTO characteristics and functions. For example, open architecture would allow basic changes in the organizational form of the RTO. An RTO that initially does not own any transmission facilities might acquire ownership of some or all of those facilities. The RTO's enabling agreements should at best anticipate and facilitate such a change, but at minimum should not prevent it or make it more difficult than necessary.

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Market trading patterns, technological change, and changes in corporate strategies will make changes in RTO membership inevitable and desirable. Accommodating change will require flexibility and adaptability in the RTO organization and open architecture will permit this.

Market support and operations is another RTO dimension that could benefit from open architecture. For example, an RTO may not initially operate a PX to support a regional spot market, but

if RTO members later find that a PX would help the region, the RTO could propose to add the PX function as well as a PX market monitoring function. It is important that the basic RTO agreement not close off such development. Our proposed open architecture policy will ensure that such future development is not foreclosed.

The Commission is interested in receiving comments regarding an open architecture policy to ensure that initial RTOs can develop. What flexibility needs to be built into RTO contracts? What regulatory flexibility is needed from the Commission as part of an open architecture policy? In which areas of RTO organization or operations is it especially important for the Commission to expect improvement?

F. Ratemaking for Transmission Facilities under RTO Control

The Commission expects RTOs to reform transmission pricing, and in return we propose to allow RTOs greater flexibility in designing pricing proposals. In 1994, the Commission issued its Transmission Pricing Policy Statement encouraging transmission

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pricing reform and setting out standards to be used to evaluate innovative transmission pricing proposals. 274/ In the Transmission Pricing Policy Statement the Commission allowed "substantial flexibility" to be given to RTGs in justifying non-conforming proposals. The Commission allowed this because RTGs represent the combined interests of transmission owners, users and state authorities and because pricing proposals for treating loop flow problems work better if all utilities in the region use the same method.

In this section, we discuss a number of areas in which we

expect RTOs to provide innovative pricing and in which the Commission may be expected to allow flexibility. We seek comments on the issues discussed and other RTO pricing issues.

1. Single Transmission Access Rate for Capital Cost Recovery

One issue in ISO proposals that have come before the Commission is the recovery of transmission capital costs through a single access rate. Under such a rate, the capital costs of all RTO members would be averaged, resulting in a rate that is higher than the individual system rate for relatively low-cost

274/ The Policy Statement sets out five principles that transmission pricing proposals should conform to: meet the traditional revenue requirement; reflect comparability (open access tariff); promote economic efficiency; promote fairness; and be practical. The Policy Statement requires non-conforming proposals to satisfy additional factors: promote competitive markets and produce greater overall consumer benefits. Overall consumer benefits are measured principally by greater access and customer choice, projected price decreases to power customers, and service flexibility and products to meet customer needs.

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transmission systems and lower than the rate for high-cost transmission systems. This can cause two kinds of "cost-shifting" concerns: high-cost transmission providers are concerned about cost recovery, and customers of the low-cost providers are concerned about increased rates.

Transmission cost shifting has been an issue in every ISO the Commission has approved to date, and we have allowed a flexible approach to resolving the issue. In each of those cases, we have allowed a transition period of between five and ten years during which access fees are based on some form of "license plate" pricing: access fees are paid by load serving entities based on the fixed transmission costs of the local

utility. 275/

We propose to continue our flexibility in allowing the recovery of current sunk transmission costs as transition mechanisms to single rates if proposed by RTOs, including the license plate approach as well as others. We request comment regarding whether the license plate approach to fixed cost recovery is an appropriate long-term measure.

## 2. Congestion Pricing

As discussed in prior sections, managing regional congestion is one of the problems that an RTO can help solve. We believe that efficient congestion management requires a greater reliance

275/ See, e.g., Order Directing Amendments to Proposals to Restructure the Pennsylvania-New Jersey-Maryland Interconnection and Providing Guidance, 77 FERC - 61,148 at 61,577 (addressing concerns about cost-shifting between high- and low-cost transmission providers).

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on market mechanisms 276/ and this can be effectively accomplished with price signals. We propose to allow RTOs considerable flexibility in experimenting with different market approaches to managing congestion through pricing. 277/ Proposals should, however, ensure that the generators that are dispatched in the presence of transmission constraints must be those that can serve system loads at least cost, and limited transmission capacity should be used by market participants that value that use most highly. 278/

The Commission intends to be flexible in reviewing pricing innovations, and we ask for comments as to what specific requirements, if any, may best suit our RTO goals.

## 3. Performance Based Rate Regulation

Once RTOs are formed, the Commission is interested in

finding ways to ensure their satisfactory performance. One way to induce good grid operation by an RTO is through performance-based regulation, or PBR. PBR may consist of price/revenue caps,

276/ See NERC, 85 FERC at 62,364.

277/ This is consistent with our Transmission Pricing Policy Statement's allowance of substantial flexibility to pricing proposals from RTGs because RTGs are comprised of broad membership to facilitate transmission access, develop a comprehensive regional plan for transmission expansion, share transmission information and provide for dispute resolution. 64 FERC 61,138 (1993). RTOs possess these same characteristics.

278/ Transmission Pricing Policy Statement, FERC Stats. & Regs. at 31,140-44.

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price incentives, or performance standards. 279/ Performance-based regulation identifies factors of good performance such as efficient congestion management, lowering operator costs, and meeting reliability targets. Great care must be taken in selecting the performance factors. RTOs should have a reasonable chance of meeting or exceeding the performance targets, but the targets must not be too easy to meet. We would reward only performance that is truly superior to that which individual transmission owners could achieve outside an RTO.

The Commission seeks comments on applying PBR to RTOs. Should PBR be voluntary or applied to all RTOs? What degree of regulatory scrutiny would a PBR regime require? In addition, the Commission seeks comment on the specifics of how PBR would be applied effectively to an RTO. For productivity incentives, what productivity objectives should be adopted and how should productivity be measured? How would a revenue cap or a price cap

be set? What intermediate adjustments to the cap should be allowed? How often should base costs be examined?

4. Consideration of Incentive Pricing Proposals

RTOs would bring extensive benefits to North American electricity markets and would further the objectives of sections 202(a), 205 and 206 of the FPA. We would be willing to consider, on a case by case basis, allowing the transmission owners that

279/ See Incentive Ratemaking for Interstate Natural Gas Pipelines, Oil Pipelines, and Electric Utilities, Policy Statement on Incentive Regulation, 61 FERC - 61,168 at 61,590-92 (1992), and L. Brown, Michael Einhorn, and Ingo Vogelsang, Incentive Regulation: A Research Report (1989).

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bring about those benefits to share in them through incentive pricing for public utility transmission owners that turn over control of their transmission facilities to an RTO. 280/ RTOs would be expected to propose and justify specific proposals on a case-by-case basis.

One potential treatment that could be considered is allowing transmission owners that participate in RTOs to receive a higher return on equity (ROE) on transmission plant than under current policy because a transmission owner participating in an RTO puts its grid to a higher valued use than one operating individually. This relates the incentive to the benefit produced by the RTO. The simplest way to create a higher ROE is to share the benefits of an RTO between transmission owners and customers. Alternatively, a higher ROE could be implemented by either allowing an ROE at the high end of the zone of reasonable returns for RTO participants and an ROE in the current range for non-participants. Is it appropriate to allow a higher ROE as a means of sharing the benefits created by RTOs or should higher ROEs be

limited only to increases in risk? Is the risk of transmission capital recovery increased or decreased by transferring transmission facilities to an RTO from a vertically integrated firm?

280/ As discussed above in section III-B, there are also a number of non-pricing regulatory benefits that could be offered to RTO members, such as deference in dispute resolution, reduced or eliminated codes of conduct, and streamlined filing and approval procedures.

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With improved grid operation and investment in new facilities to relieve constraints, RTOs may lower grid operating costs. Another incentive that could be considered would be to keep transmission rates at current levels and allow participating RTO transmission owners to keep the benefits from cost savings over time or to lower transmission rates partly while owners keep part of the benefits. Would such treatment encourage better performance?

The Commission could also consider flexibility in cost recovery for RTO participation. The capital cost of transmission plant is normally recovered over a relatively long time period. RTO participants could be allowed accelerated recovery for the costs of transmission expansion. Similarly, the recovery of capital start-up costs of RTO participation could be accelerated as well. Is it appropriate to allow such accelerated recovery as an incentive to transfer transmission facilities to an RTO or should capital recovery periods continue to be based on the useful life of transmission facilities? Is industry restructuring and the potential introduction of distributed generation technology likely to affect the risk associated with

transmission investment recovery periods?

The Commission may also be willing to consider non-traditional methods for valuing transmission assets that are under the control of a RTO. The Commission's traditional ratemaking policy values assets at original cost, less depreciation. One alternative may be for rate base to reflect a

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higher valuation through some measure of replacement cost. Where an RTO or other independent owner purchases transmission assets and pay a price that reflects such an enhanced valuation of assets, the Commission may want to consider allowing the RTO to include in its rates an acquisition premium that reflects the enhanced value.

The Commission might also consider flexibility in allowing levelized or non-levelized rate methods. Both methods can produce reasonable results in particular circumstances, especially when one method is used consistently throughout the life of a utility's facilities. The Commission has, however, been reluctant to allow switching from a non-levelized to a levelized rate design during the life of a facility. The Commission's current policy is that a utility must prove that switching methods is reasonable in light of its past recovery of capital. 281/ The Commission could consider granting some latitude for RTO pricing proposals for levelized rate cost recovery.

The Commission seeks comments on whether to entertain case-by-case proposals of rate incentive treatments for RTO participants. Will transmission owners respond to incentives, and will incentives be sufficient to achieve our objective of RTO

formation? Which incentives are most likely to be successful in so doing? Are there specific forms of incentive pricing that are

281/ See Consumers Energy Company, 85 FERC - 61,100, at 61,366-367, (1998); Kentucky Utilities Company, 85 FERC - 61,274, at 62,103-105 (1998).

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inappropriate and problematic? Are safeguards needed if the Commission decides to allow incentive treatments? In justifying a proposed rate treatment, should an RTO be required to demonstrate that its benefits are likely to outweigh the pecuniary "costs" of the proposal? Would certain incentive pricing encourage RTOs to favor capital-based resource decisions (at the expense of more efficient alternatives) or to favor transmission solutions over alternative ways of relieving particular transmission constraints? We also seek comment on whether and how public power transmission owners that participate in RTOs could benefit from flexible ratemaking and incentive pricing treatments.

Finally, our willingness to consider incentive pricing proposals is conditioned on an RTO meeting all of the proposed minimum characteristics and functions. Allowing any incentive pricing to RTO participants is based on a sharing of the extensive benefits that an RTO brings to electricity markets. Only an RTO that meets the minimum characteristics and functions can produce such extensive benefits, and it would be inappropriate for the Commission to consider incentive pricing to members of an RTO that falls short. We would, however, be open to considering other innovative transmission rate treatments, such as providing service at non-pancaked rates and regional congestion management proposals, for an organization that does

not meet all of the minimum RTO characteristics and functions.

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G. Public Power Participation in RTOs

The Commission's objective of encouraging all transmission owning entities in the Nation to place their transmission facilities under the control of an RTO includes transmission owned or controlled by public power entities [e.g., municipals, cooperatives, Federal Power Marketing Agencies (PMAs), Tennessee Valley Authority (TVA), and other state and local entities]. We are aware that some public power entities have filed open access tariffs with the Commission and others are participating in ISOs and other regional institutions. We also are aware, however, that many public power entities may face several difficult issues regarding RTO participation. The Commission is concerned about any obstacle to public power participation in the formation and successful operation of any form of RTO. Accordingly, we request comments that identify issues that public power entities and others face regarding RTO participation and that suggest ways the Commission might facilitate their resolution. We expect public power entities to fully participate in the proposed collaborative process for forming RTOs after our Final Rule is issued, as discussed in section III-I below.

One issue is the Internal Revenue Service (IRS) Code "private use" restrictions on the transmission facilities of public power entities financed by tax-exempt bonds. IRS temporary regulations may allow facilities financed by outstanding tax-exempt bonds to be used to wheel power in accordance with Order No. 888, but they may not allow the

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issuance of additional tax-exempt bonds for expanded transmission or permit transfer of operational control of existing transmission facilities financed by tax-exempt bonds to a for-profit transco. 282/ In addition, there is uncertainty regarding what may happen after the temporary regulations expire on January 22, 2001.

We solicit comments on the extent to which IRS Code restrictions may limit the transfer of operational control or other forms of control, or ownership, of public power transmission facilities to a for-profit transco. What impact would IRS Code restrictions have on public power participation in other forms of an RTO? While IRS Code restrictions might prevent issue of additional tax-exempt bonds for transmission expansions made in accordance with RTO participation, are non-tax exempt forms of financing a viable option for public power participation in selected transmission additions?

In addition to private use restrictions, are there other restrictions on public power institutions that may limit their participation in RTOs? For example, to what extent would state or local charter limitations, prohibitions on participating in stock-owning entities, or the current policies of various local regulatory entities affect or impede full public power participation in RTOs? Are there some forms of associate membership or participation in RTOs, or other special

282/ See *Uncrossing the Wires, Transmission in a Restructured Market*, a report by The Large Public Power Council, December 1998, at 10.

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accommodations, that the Commission should consider to make it more feasible for public power entities to overcome obstacles to participation in RTOs?

The Commission seeks comment on legal restrictions or other considerations regarding the PMAs that prevent their participation in RTOs. For example, Bonneville Power Administration and other entities in the Pacific Northwest may face unique circumstances that may affect RTO formation in that area. These include the design of the power and transmission system for the production of hydroelectric energy involving the 1961 Columbia River Treaty, the Bonneville Project Act, the Federal Columbia River Transmission System Act, the Pacific Northwest Electric Power Planning and Conservation Act of 1980, and the Northwest Preference Act. There may also be obstacles to TVA participation in an RTO. How can the Commission help overcome any such limiting factors to full RTO formation?

#### H. Other Issues

The Commission seeks comment on a number of other issues regarding RTO participation. These issues are presented in this section.

##### 1. Pre-existing Transmission Contracts

What is the appropriate treatment of existing transmission agreements when an RTO is formed? In Order Nos. 888 and 888-A, we specifically chose not to abrogate existing requirements and transmission contracts when the utility filed an open access

tariff. 283/ However, an RTO represents an entirely different context. We must balance the need for a uniform approach for transmission pricing and the elimination of pancaked rates -- one

of the principal benefits of an RTO -- with the need to recognize the equities inherent in existing transmission contracts. The potential financial impact of giving up an advantageous transmission arrangement may act as a disincentive to joining an RTO.

In the ISO filings that we have acted on to date, we have evaluated various "transition plans" regarding existing contracts on a case-by-case basis. 284/ At this juncture, we do not intend to resolve this issue generically but instead propose to confine our policy to addressing this issue on an RTO-by-RTO basis. We solicit comments on this approach. How critical is this concern to transmission owners' and others' decisions on whether to support RTO formation? Is the financial impact of giving up an advantageous transmission arrangement significant enough to act as a disincentive to RTO membership?

283/ See Order No. 888 at 31,664-65; Order No. 888-A at 30,181, 30,199; clarified, 76 FERC at 61,027; Order No. 888-B, 81 FERC at 62,072, 62,090, 62,100.

284/ See PJM, 81 FERC at 62,280-81; Midwest ISO, 84 FERC at 62,169-70, and order on reh'g, 85 FERC at 62,418-20 (1998); Pacific Gas & Electric, 77 FERC at 61,821, 81 FERC at 61,470-71; NEPOOL, 83 FERC at 61,241-42; Central Hudson Gas & Electric Co. et al., 86 FERC at 61,218-19.

2. Treatment of Existing Regional Transmission Entities

We propose to adopt in the Final Rule certain characteristics and functions to be required of RTOs. It could turn out that the ISOs and any other regional transmission entities that conform to the Commission's ISO principles that we

have approved to date do not meet all of these characteristics and functions. It is our expectation that, to the extent this is the case, the existing regional transmission entities will over time evolve to be consistent with the characteristics and functions adopted in the Final Rule. The Commission recognizes that a number of operational, financial and political issues will need to be addressed in the course of such an evolution and that it cannot be accomplished overnight. We also respect the investment of time and other resources made in the existing transmission entities, and understand the importance of avoiding change during the critical implementation period these institutions are now undergoing. Given these considerations, and our policy of regional flexibility, the proposed rule does not require major changes to the existing transmission entities. However, our objective is to encourage all of the Nation's transmission grid to be under the control of RTOs that have the minimum characteristics and functions adopted in the Final Rule. We therefore propose to require each public utility that is a member of an existing regional transmission entity that has been approved by the Commission as in conformance with the eleven ISO principles set forth in Order No. 888 to make a filing no later

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than January 15, 2001 that explains the extent to which the transmission entity in which it participates meets the minimum characteristics and functions for an RTO, or proposes to modify the existing institution to become an RTO. Alternatively, the public utility may file an explanation of efforts, obstacles and plans with respect to conforming to these characteristics and functions. 285/ The Commission is also concerned about

impediments to transactions between existing transmission entities, as well as any future RTOs. We therefore encourage existing transmission entities to consider ways to reduce any impediments to transactions among them and direct them to provide the Commission with a progress report by January 15, 2001.

The Commission seeks comment on this issue.

3. Participation by Canadian and Mexican Entities

Canadian and Mexican involvement in RTO formation would be beneficial to both, as well as to the United States. In certain areas, "natural" electricity trading regions already cross national borders. Expansion of electricity trade in the North American bulk power market requires that regional institutions include all market participants so that they may enjoy direct access to market information and the benefits of non-pancaked transmission rates. In addition, any reliability standards implemented by RTOs must be acceptable to the affected nations

285/ Of course, there is nothing to prevent an existing transmission entity from making an RTO filing prior to this date if it so chooses.

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and consider all resources to avoid wasteful duplication of grid facilities. 286/

We encourage electric utilities in Canada and Mexico, and their regulatory authorities, to participate in the discussions of the rulemaking. Perhaps what may be thought of as a "dotted line" RTO boundary could be used at international borders to indicate an unwillingness to artificially limit an RTO's scope while recognizing jurisdictional limits. The Commission emphasizes that Canadian and Mexican authorities would be

responsible for approving prices and other terms and conditions of transmission service provided over any RTO transmission facilities located in their countries. We invite the comments of Canadian and Mexican authorities on these and other issues.

4. Providing Service to Transmission-owning Utilities that do not Participate in an RTO

The transmission owners that turn control of transmission facilities over to an RTO will help bring significant operational and commercial benefits to a region. To what extent should transmission owners who do not participate in their region's RTO share in those benefits? Would it be appropriate to allow RTO members to provide transmission service at individual system rates to non-participating transmission owners located in the RTO

286/ Historically, Canada and Mexico have participated in North American utility organizations such as NERC and Western Systems Coordinating Council (WSCC). Maintaining Reliability in a Competitive U.S. Electricity Industry, Final Report of the Task Force on Electric System Reliability, Secretary of Energy Advisory Board, DOE, September 29, 1998 at 9, 58.

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region, thereby denying non-participants the benefits of non-pancaked transmission rates? The Commission seeks comment on the treatment by an RTO of non-participating transmission owners in the RTO region.

5. RTO Filing Requirements

Any transfer of control of jurisdictional transmission facilities owned, operated, or controlled by public utilities required by RTO formation must be approved by the Commission pursuant to its Section 203 authority under the FPA. The RTO transmission rates, terms, and conditions of service must also be approved pursuant to Section 205 of the FPA. We request comments

on whether the Commission should provide for expedited or streamlined processing procedures for Section 203 transfers of jurisdictional facilities to RTOs that meet the characteristics and functions of the Final Rule, and for the related Section 205 transmission rates, terms, and conditions. We also welcome specific suggestions regarding how we can further expedite or streamline our procedures.

6. Power Exchanges (PXs)

Another important issue is the relationship between RTOs and power exchanges. Of the five ISOs approved to date, only the Midwest ISO chose not to include a power exchange in the design submitted to us. 287/ However, after the Commission approved this proposal, several ISO participants joined with other

287/ In California, PXs are operated by separate organizations that coordinate with the ISO.

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Midwestern power entities in issuing a public request for proposals that would create an independent power exchange that would operate in conjunction with the ISO. 288/ This recent Midwest initiative appears to have been motivated, at least in part, by the large price spikes that were experienced last summer. Our staff's report concluded that one of probable causes of the price spikes was the lack of price transparency and that "centralized trading institutions such as power exchanges could have provided better price signals in the market and helped to reduce price volatility." 289/

Regions may want to consider establishing a PX that is operated by an RTO. However, some oppose RTO-operated PXs, contending that the two principal functions of PXs, market making

- 288/ See Joint Committee for the Development of a Midwest Independent Power Exchange, "Solicitation of Interest-Creation of an Independent Power Exchange for the U.S. Midwest," February 5, 1999.
- 289/ Staff Report to the Federal Energy Regulatory Commission on the Causes of Wholesale Electric Pricing Abnormalities in the Midwest During June 1998, September 1998, at 4-4. Centralized power exchanges appear to have other benefits. Since most power exchanges establish credit and security standards as a condition for participation and reserve funds to cover defaults, they create a type of insurance by spreading counterparty risks among all participants and thereby reducing the likelihood of cascading transaction defaults such as those that occurred in the Midwest. In addition, it is generally accepted that an organized and transparent spot market is a prerequisite for a viable futures market which would allow market participants to hedge the risk of future price fluctuations. Finally, we note that during our recent consultations with state commissions, several state commissioners informed us that organized and open spot markets were critical to the success of their efforts to introduce retail competition in their respective states.

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and price discovery, are not natural monopoly functions. 290/ They also contend that power exchanges force market participants to buy and sell electricity using standardized contracts that may not meet their particular needs. They argue that the full benefits of electricity competition can be achieved only if there is competition for the market as well as in the market. Finally, they assert that if power exchanges are introduced, an RTO should be specifically prohibited from operating the exchange because this would compromise the RTO's independence in fulfilling its principal responsibilities as a transmission service provider and system operator. 291/

In contrast, those who recommend that an RTO should operate a PX contend that the two functions of short-term forward or spot market operations and system operations are difficult to separate. 292/ It is their view that there will be significant

inefficiencies unless the two functions are performed simultaneously by a single entity. 293/ In addition, they

290/ See, e.g., comments of Enron in PL98-5, Washington, D.C., transcript at 211.

291/ See, e.g., comments of Automated Power Exchange, Inc., in PL98-5 at 3.

292/ See Professor William W. Hogan, "Enabling The Power Of Markets," presentation at the EEI Chief Executive Conference, Scottsdale, Arizona, January 7, 1999, at 8. A copy of this presentation is available on Professor Hogan's website( [www.ksg.harvard.edu/people/whogan](http://www.ksg.harvard.edu/people/whogan)).

293/ See Dr. Larry Ruff, "Competition in Electricity: Where Do We Go From Here?", lecture at the Institute of Economic Affairs, London Business School, October 13, 1998. Available through the website of the Harvard Electric Policy (continued...)

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contend that there is no inherent conflict between the RTO as a transmission service provider and a spot market operator as long as the RTO has no commercial interest in whether prices are high or low in the markets that it operates.

We leave it to each region to decide whether there is a need for a PX and whether the RTO should operate the PX. The Commission will accept an RTO proposal that includes a PX in its design as long as its operation of the PX does not compromise its independence as a transmission service provider. We request comments on the following questions. Given that a power exchange is useful, should it be part of an RTO or otherwise associated with an RTO? If an area has more than one PX, should the PXs have equal standing before the RTO? Is an organized PX necessary for successful retail competition? If an RTO operates congestion markets and balancing markets, are there efficiencies to be gained by allowing or encouraging the RTO to operate day ahead or hour ahead energy markets? Is it feasible for an RTO to operate

a spot energy market without compromising its ability to provide non-discriminatory transmission service to all market participants? If a PX is operated by a non-RTO entity, is there a need to require certain specified forms of coordination between the two organizations?

293/ (...continued)

Group(<http://ksgwww.harvard.edu/hepg/FPpapers.html>).

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#### I. Implementation of the Rule

The Commission seeks to support timely RTO formation in every region of the country. To that end, the Commission envisions regional collaborations soon after issuance of the Final Rule, building on progress made to that date. Further, pursuant to our expectation that utilities and other participants in the electric industry form RTOs, the Commission proposes to require that certain filings be made by October 15, 2000 concerning RTO formation. The collaborative process and filing requirements are discussed in more detail below.

##### 1. Collaborative Process

During our consultations with the state commissions, many said that Commission leadership is needed to facilitate RTO formation and that only we could facilitate broad regional participation. To facilitate RTO formation in all regions of the Nation, the Commission proposes a collaborative process under section 202(a) to take place in the spring of 2000, after adoption of a Final Rule. The Commission expects public utilities and non-public utilities, in coordination with

appropriate state officials, and affected interest groups in a region to fully participate in working to develop an RTO.

To assist in structuring the regional collaborations and to further inform the Commission on activities in each region, we propose that regional workshops be held throughout the Nation after the Final Rule is issued. The goal of these workshops would be to share information about the status of RTOs or RTO

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proposals in the region, to identify any impediments to RTO formation in the area, to explore what process could most expeditiously advance agreements on RTO formation, and to determine what role, if any, Commission staff should play in advancing discussions in the region. These regional workshops would be convened by Commission staff in cooperation with the affected state officials. The Commission would specifically invite each entity in the Nation that owns or operates transmission facilities, and representatives from Canada and Mexico as appropriate, to the public workshops. The Commission proposes to make staff resources, including settlement judges, available through our Dispute Resolution Service to assist in designing and possibly facilitating regional collaborations following the workshops. Commission technical staff will be made available for participation in the regional collaborations.

Would regional workshops advance RTO formation? Under whose auspices should regional workshops be held? Would it be beneficial to have the Commission's Dispute Resolution Service staff facilitate discussions regarding RTO formation? Should the Commission staff convene the regional workshops or should Commission staff be made available to attend meetings convened by others? If the Commission staff convenes workshops, in how many

cities should meetings be convened and how should the cities be chosen? Would the three U.S. interconnections be appropriate starting points? Would participation of Commission staff aid or stifle negotiations on RTO development?

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## 2. Filing Requirement

The Commission is hopeful that the direction provided by this rulemaking, the regional collaborations described above, and the possibility of incentive rate treatments will lead to the prompt development of RTO proposals. Thus, we propose that all public utilities that own, operate or control interstate transmission facilities (except those already participating in a regional transmission entity in conformance with our eleven ISO principles) must file with the Commission by October 15, 2000, either (1) a proposal to participate in an RTO that will be operational no later than December 15, 2001, or (2) an alternative filing describing efforts to participate in an RTO, obstacles to RTO participation, and any plans and timetables for future efforts (see proposed 35.34(c)).<sup>294/</sup> To the extent possible, RTO proposals should include the transmission facilities of public power and other non-public utility entities.

The number and type of filings necessary to effectuate an RTO proposal necessarily will vary depending upon the type of RTO being proposed and the circumstances of each individual public utility participant. At a minimum, an RTO proposal must include

<sup>294/</sup> A proposal to form a transmission institution that does not meet all of the minimum RTO characteristics and functions will not be approved as an RTO. This does not necessarily mean that the proposal will not otherwise be approved as consistent with the FPA. However, the proposal will not qualify as an RTO. For transmission organizations that do

not meet all of the minimum RTO characteristics and functions, however, we would still be open to considering, and indeed encourage, regional filings for providing service at non-pancaked rates and regional congestion management proposals.

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a basic agreement filed under section 205 of the FPA setting out the rules, practices and procedures under which an RTO will be governed and operated, and requests by the public utility members of the RTO for approval under section 203 of the FPA to transfer control of their jurisdictional transmission facilities. However, depending upon the circumstances, there may need to be additional section 205 or 206 amendments to existing public utility contracts or rate schedules in order to effectuate an RTO proposal.

For those public utilities that file an RTO proposal on or before October 15, 2000, we will permit them to file a petition for declaratory order asking whether a proposed transmission entity would qualify as an RTO, with a description of the organizational and operational structure and the intended participants of the institution, an explanation of how the institution would satisfy each of the RTO minimum characteristics and functions, and a commitment to submit necessary section 203, 205 and 206 filing promptly after receiving the Commission's determination on the declaratory order petition (see proposed 35.34(d)(3)). This declaratory order petition option thus is to be used only in conjunction with the filing of a proposal for an RTO that is to begin operation no later than December 15, 2001.

If a public utility is not able to file an RTO proposal on or before October 15, 2000, it must alternatively file by that date a description of any efforts made by the public utility to participate in an RTO, the reasons it has not participated in an

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RTO, including identifying specific obstacles to RTO participation, and any plans and timetables the public utility has for further work toward RTO participation (see proposed 35.34(f)). If a public utility makes such an alternative filing, the Commission at that time will determine what steps, if any, need to be taken.

The above requirements, however, do not apply to a public utility that is a member of an existing transmission entity that the Commission has found to be in conformance with the Order No. 888 ISO principles. Rather, each such public utility must make a filing no later than January 15, 2001 that (1) explains the extent to which the transmission entity in which it participates meets the minimum characteristics and functions for an RTO, (2) proposes to modify the existing institution to become an RTO, or (3) explains efforts, obstacles and plans with respect to conforming to these characteristics and functions (see proposed 35.34(g)). 295/

The Commission does not propose to mandate RTO participation by rule, and instead proposes to induce voluntary participation through a combination of guidance on the minimum characteristics and functions of an RTO, possible rate incentives, a collaborative process for structuring regional dialogues, and filing requirements. The Commission seeks comment on whether the filing requirements discussed above are inconsistent with or

295/ Of course, there is nothing to prevent an existing entity from making an RTO filing prior to this date if it so chooses.

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otherwise would inhibit voluntary participation in RTOs. The Commission also seeks comment on whether it needs to generically mandate RTO participation by all public utilities to remedy undue discrimination under sections 205 and 206 of the FPA. We also seek comment on whether a performance based system could be designed to realign economic interests to remove the motive for discrimination.

In considering what actions might be appropriate if a utility fails to voluntarily join an RTO, the Commission seeks comment on whether market-based rates for generation services could continue to be justified for a public utility that does not participate in an RTO, whether a merger involving a public utility that is not a member of an RTO would be consistent with the public interest, whether non-participants that own transmission facilities should be allowed to use the non-pancaked transmission rates of the RTO participants in that region, whether transmission services provided by a transmitting utility need to be under RTO control to satisfy the discrimination standards of sections 211 and 212 of the FPA, and whether a public utility's lack of participation would otherwise be in violation of the FPA. Does the possibility of any of these remedial actions for RTO non-participation undermine or otherwise inhibit voluntary participation in RTOs? How should the Commission consider the efficiency, reliability, and discrimination implications of RTO non-participation? How should

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the Commission consider non-participation by utilities that

constitute "holes" in an RTO region?

The Commission anticipates that public utilities will file proposals for ISOs, transcos, or other types of regional transmission institutions prior to the effective date of the Final Rule. We clarify that the Commission will continue to apply to these proposals the ISO principles contained in Order No. 888 and the case precedent established for ISOs. However, a public utility that files such a proposal prior to the effective date of the Final Rule would still be subject to the October 15, 2000 or January 15, 2001 filing requirement, as appropriate, in the Final Rule.

#### IV. ENVIRONMENTAL STATEMENT

In furtherance of the National Environmental Policy Act of 1969, the staff of the Federal Energy Regulatory Commission will prepare an environmental assessment (EA) that will consider the environmental impacts of the proposed rule. A notice of intent to prepare the EA, request comments on the scope of the EA, and notice of a public scoping meeting will be issued shortly.

#### V. REGULATORY FLEXIBILITY ACT

The Regulatory Flexibility Act (RFA), 5 U.S.C. 601-612, requires rulemakings to contain either a description and analysis of the effect that the proposed rule will have on small entities or a certification that the rule will not have a significant economic impact on a substantial number of small entities. If this proposed rule goes into effect, it will establish minimum

characteristics and functions for RTOs, none of which is likely to meet the SBA's definition of a small electric utility, i.e., one that disposes of 4,000,000 MWh per year or less. 13 C.F.R.

121.201. Furthermore, the rule will not have the requisite impact upon transmission owners.

In *Mid-Tex Elec. Coop. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985), the court found that Congress, in passing the RFA, intended agencies to limit their consideration "to small entities that would be directly regulated" by proposed rules. *Id.* at 342. The court further concluded that "the relevant 'economic impact' was the impact of compliance with the proposed rule on regulated small entities." *Id.* at 342.

The proposed rule will not regulate any small entities, nor will it impose upon them any significant costs of compliance. Small entities will be free to determine for themselves whether to participate in an RTO and whether any costs associated with joining an RTO will be adequately offset by attendant benefits. The only requirement the rule would impose upon a small entity would be the need to file a statement explaining its efforts to join an RTO, any barriers it encountered, and any future plans to seek to join an RTO. The Commission believes that the costs associated with preparing and filing such a statement will be minimal. Consequently, the Commission certifies that this proposed rule will not have a significant economic impact upon a substantial number of small entities.

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VI. PUBLIC REPORTING BURDEN AND INFORMATION COLLECTION STATEMENT

The following collections of information contained in this proposed rule are being submitted to the Office of Management and Budget (OMB) for review under Section 3507(d) of the Paperwork Reduction Act of 1995. FERC identifies the information provided under Part 35 as FERC-516 and under Part 33 as FERC-519.

Comments are solicited on the Commission's need for this information, whether the information will have practical utility, the accuracy of the provided burden estimates, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing respondents' burden, including the use of automated information techniques. The burden estimates for complying with this proposed rule are as follows:

Public Reporting Burden: Estimated Annual Burden:

Data Collection	Number of Respondents	Number of Responses	Hours Per Response	Total Annual Hours
FERC-516	12	1	300	3,600
FERC-519	50 296/	1	80	4,000
Totals				7,600

Total Annual Hours for Collection (reporting + record keeping, (if appropriate))= 7,600.

296/ Includes respondents who make application to form an RTO and the responses of utilities who choose not to participate.

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Information Collection Costs:

The Commission seeks comments on the costs to comply with these requirements. It has projected the average annualized cost for all respondents to be:

Annualized Capital/Startup Costs-

Annualized Costs(Operations & Maintenance)-\$401,518 (7,600 hours ÷ 2080 hours per year x \$109,889 =\$401,518). The cost per respondent is equal to \$8,030 (participants and non-participants).

The OMB regulations require OMB to approve certain information collection requirements imposed by agency rule. (Footnote 5 CFR 1320.11) Accordingly, pursuant to OMB regulations, the Commission is providing notice of its proposed information collections to OMB.

Title: FERC-516, Electric Rate Schedule Filings; FERC-519 Application for Sale, Lease, or Other Disposition, Merger or Consolidation of Facilities or for the Purchase or Acquisition of Securities of a Public Utility.

Action: Proposed Data Collections.

OMB Control No.: 1902-0096 and 1902-0082.

The applicant shall not be penalized for failure to respond to this collection of information unless the collection of information displays a valid OMB control number.

Respondents: Business or other for profit, including small businesses.

Frequency of Responses: One time.

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Necessity of Information: The proposed rule revises the requirements contained in 18 CFR part 35. The Commission is seeking to establish RTOs nationwide by December 2001. In particular, the Commission will establish in this proposed rule characteristics and functions which applicants must meet to become Commission approved RTOs. The Commission will engage in a collaborative process with state officials and others to facilitate RTO development. The proposed rule will require that each public utility that owns, operates or controls transmission facilities participate in one-time filings proposing an RTO or make a filing explaining why they are not participating in an RTO

proposal.

Internal Review: The Commission has assured itself, by means of internal review, that there is specific, objective support for the burden estimates associated with the information requirements. The Commission's Offices of Electric Power Regulation and Economic Policy will use the data included in filings under Section 203 and 205 of the Federal Power Act to evaluate efforts for the interconnection and coordination of the U.S. electric transmission system and to ensure the orderly formation of RTOs as well as for general industry oversight. These information requirements conform to the Commission's plan for efficient information collection, communication, and management within the electric power industry.

Interested persons may obtain information on the reporting requirements by contacting the following: Federal Energy

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Regulatory Commission, 888 First Street, NE, Washington, DC 20426  
[Attention: Michael Miller, Capital Planning and Policy Group,  
Phone: (202) 208-1415, fax: (202)208-2425, E-mail:  
mike.miller@ferc.fed.us].

For submitting comments concerning the collection of information(s) and the associated burden estimate(s), please send your comments to the contact listed above and to the Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, DC 20503, [Attention: Desk Officer for the Federal Energy Regulatory Commission, phone: (202)395-3087, fax: (202)395-7285].

#### VII. PUBLIC COMMENT PROCEDURES

The Commission invites interested persons to submit written comments on the matters and issues proposed in this notice to be

adopted, including any related matters or alternative proposals that commenters may wish to discuss. Initial comments should not exceed 100 double-spaced pages and should include an executive summary. The original and 14 copies of such comments must be received by the Commission before 5:00 p.m. on August 16, 1999.

The Commission will also permit interested persons to submit reply comments in response to the initial comments filed in this proceeding. Reply comments should not exceed 50 double-spaced pages and should include an executive summary. The original and 14 copies of the reply comments must be received by the Commission before 5:00 p.m. on September 15, 1999.

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Comments should be submitted to the Office of the Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington D.C. 20426 and should refer to Docket No. RM99-2-000.

In addition to filing paper copies, the Commission encourages the filing of comments either on computer diskette or via Internet E-Mail. Comments may be filed in the following formats: WordPerfect 8.0 or lower version, MS Word Office 97 or lower version, or ASCII format.

For diskette filing, include the following information on the diskette label: Docket No. RM99-2-000; the name of the filing entity; the software and version used to create the file; and the name and telephone number of a contact person.

For Internet E-Mail submittal, comments should be submitted to "comment.rm@ferc.fed.us" in the following format. On the subject line, specify Docket No. RM99-2-000. In the body of the E-Mail message, include the name of the filing entity; the software and version used to create the file, and the name and

telephone number of the contact person. Attach the comments to the E-Mail in one of the formats specified above. The Commission will send an automatic acknowledgment to the sender's E-Mail address upon receipt. Questions on electronic filing should be directed to Brooks Carter at 202-501-8145, E-Mail address brooks.carter@ferc.fed.us.

Commenters should take note that, until the Commission amends its rules and regulations, the paper copy of the filing remains the official copy of the document submitted. Therefore,

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any discrepancies between the paper filing and the electronic filing or the diskette will be resolved by reference to the paper filing.

All written comments will be placed in the Commission's public files and will be available for inspection in the Commission's Public Reference room at 888 First Street, N.E., Washington D.C. 20426, during regular business hours. Additionally, comments may be viewed, printed or downloaded remotely via the Internet through FERC's Homepage using the RIMS or CIPS link. RIMS contains all comments but only those comments submitted in electronic format are available on CIPS. User assistance is available at 202-208-2222, or by E-Mail to rimsmaster@ferc.fed.us.

List of Subjects in 18 C.F.R. Part 35

Electric power rates, Electric utilities, Electricity, Reporting and recordkeeping requirements.

By direction of the Commission.

( S E A L )

David P. Boergers,  
Secretary.

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In considering of the foregoing, the Commission proposes to amend Part 35, Chapter I, Title 18 of the Code of Federal Regulations, as set forth below.

PART 35 - FILING OF RATE SCHEDULES

1. The authority citation for part 35 continues to read as follows:

Authority: 16 U.S.C. 791a-825r, 2601-2645; 31 U.S.C. 9701; 42 U.S.C. 7101-7352.

2. Part 35 is amended by adding a new Subpart F and a new 35.34 to read as follows:

Subpart F - Procedures and Requirements Regarding Regional  
Transmission Organizations

35.34 - Regional Transmission Organizations

(a) Purpose. This section establishes required characteristics and functions for Regional Transmission Organizations for the purpose of promoting efficiency and reliability in the operation and planning of the electric transmission grid and ensuring nondiscrimination in the provision of electric transmission services. This section further directs each public utility that owns, operates, or controls facilities used for the transmission of electric energy in interstate commerce to make certain filings with respect to forming and participating in a Regional Transmission Organization.

(b) Definitions.

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(1) Regional Transmission Organization means an entity that satisfies the minimum characteristics set forth in paragraph (i) of this section, performs the functions set forth in paragraph (j) of this section, and accommodates the open architecture conditions set forth in paragraph (k) of this section.

(2) Market participant means any entity that buys or sells electric energy in the Regional Transmission Organization's region or in any neighboring region that might be affected by the Regional Transmission Organization's actions, or any affiliate of such an entity.

(c) General rule. Except for those public utilities subject to the requirements of paragraph (g) of this section, every public utility that owns, operates or controls facilities used for the transmission of electric energy in interstate commerce as of [insert effective date of regulation] must file with the Commission, no later than October 15, 2000, one of the following:

(1) A proposal to participate in a Regional Transmission Organization consisting of one of the types of submittals set forth in paragraph (d); or

(2) A submittal consistent with paragraph (f).

(d) Proposal to participate in a Regional Transmission Organization. For purposes of this section, a proposal to participate in a Regional Transmission Organization means:

(1) Necessary filings, made individually or jointly with other entities, pursuant to sections 203, 205 and/or 206 of the

Federal Power Act, as appropriate, to create a new Regional Transmission Organization;

(2) Necessary filings, made individually or jointly with other entities, pursuant to sections 203, 205 and/or 206 of the Federal Power Act, as appropriate, to join a Regional Transmission Organization approved by the Commission on or before the date of the filing; or

(3) A petition for declaratory order, filed individually or jointly with other entities, asking whether a proposed transmission entity would qualify as a Regional Transmission Organization and containing at least the following:

(i) A detailed description of the proposed transmission entity, including a description of the organizational and operational structure and the intended participants;

(ii) A discussion of how the transmission entity would satisfy each of the characteristics and functions of a Regional Transmission Organization specified in paragraphs (i), (j) and (k);

(iii) A detailed description of the section 205 rates that will be filed for the transmission entity; and

(iv) A commitment to make necessary filings pursuant to sections 203, 205 and/or 206 of the Federal Power Act, as appropriate, promptly after the Commission issues an order in response to the petition.

Note: Under this paragraph, the Commission would consider a request for incentive rate treatment or another form of

innovative transmission pricing, such as performance based rates. Such a filing must include a detailed explanation of how the

proposed rate treatment would help achieve each of the minimum characteristics and functions and would result in benefits to consumers.

(e) Transfer of operational control. Any public utility's proposal to participate in a Regional Transmission Organization filed pursuant to paragraph (c)(1) must propose that operational control of that public utility's transmission facilities will be transferred to the Regional Transmission Organization on a schedule that will allow the Regional Transmission Organization to commence operating the facilities no later than December 15, 2001.

Note: This requirement may be satisfied by proposing to transfer to the Regional Transmission Organization ownership of the facilities in addition to operational control.

(f) Alternative filing. The submittal referred to in paragraph (c)(2) must contain a description of any efforts made by that public utility to participate in a Regional Transmission Organization; the reasons it has not, to date, participated in a Regional Transmission Organization, including identification of any existing obstacles to participation in a Regional Transmission Organization; and any plans the public utility has for further work toward participation in a Regional Transmission Organization.

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(g) Public utilities participating in approved transmission entities. Every public utility that owns, operates or controls facilities used for the transmission of electric energy in interstate commerce as of [insert effective date of this regulation], and that has filed with the Commission to transfer

operational control of its facilities to a transmission entity that has been approved or conditionally approved by the Commission as being in conformance with the eleven ISO principles set forth in Order No. 888 on or before [insert effective date of this regulation], must, individually or jointly with other entities, file with the Commission, no later than January 15, 2001:

(1) A statement that it is participating in a transmission entity that has been so approved;

(2) A detailed explanation of the extent to which the transmission entity in which it participates has the characteristics and performs the functions of a Regional Transmission Organization specified in paragraphs (i) and (j) and accommodates the open architecture conditions in paragraph (k); and

(3) To the extent the transmission entity in which the public utility participates does not meet all the requirements of a Regional Transmission Organization specified in paragraphs (i), (j), and (k), the public utility must file either a proposal to participate in a Regional Transmission Organization that meets such requirements in accordance with paragraph (d), a proposal to

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modify the existing transmission entity so that it conforms to the requirements of a Regional Transmission Organization, or a filing containing the information specified in paragraphs (f) addressing any efforts, obstacles, and plans with respect to conformance with those requirements.

(h) Entities that become public utilities with transmission facilities. An entity that is not a public utility that owns, operates or controls facilities used for the transmission of

electric energy in interstate commerce as of [insert effective date of this regulation], but later becomes such a public utility, must file a proposal to participate in a Regional Transmission Organization in accordance with paragraph (d), or an alternative filing in accordance with paragraph (f), by October 15, 2000 or 60 days prior to the date on which the public utility engages in any transmission of electric energy in interstate commerce, whichever comes later. If a proposal to participate in accordance with paragraph (d) is filed, it must propose that operational control of the applicant's transmission system will be transferred to the Regional Transmission Organization within 6 months of filing the proposal.

(i) Required Characteristics for a Regional Transmission Organization. A Regional Transmission Organization must satisfy the following characteristics when it commences operation:

(1) Independence. The Regional Transmission Organization must be independent of market participants.

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(i) The Regional Transmission Organization, its employees, and any non-stakeholder directors must not have financial interests in any market participants.

(ii) A Regional Transmission Organization must have a decision making process that is independent of control by any market participant or class of participants.

(iii) The Regional Transmission Organization must have exclusive and independent authority to file changes to its transmission tariff with the Commission under Section 205 of the Federal Power Act.

(2) Scope and Regional Configuration. The Regional

Transmission Organization must serve an appropriate region. The region must be of sufficient scope and configuration to permit the Regional Transmission Organization to effectively perform its required functions and to support efficient and non-discriminatory power markets.

(3) Operational authority. The Regional Transmission Organization must have operational responsibility for all transmission facilities under its control.

(i) The Regional Transmission Organization may choose to directly operate facilities (direct control), delegate certain tasks to other entities (functional control) or use a combination of the two approaches. If certain operational functions are delegated to, or shared with, entities other than the Regional Transmission Organization, the Regional Transmission Organization must ensure that this sharing of operational responsibility will

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not adversely affect reliability or provide some market participants with an unfair competitive advantage. Within two years after initial operation as a Regional Transmission Organization, the Regional Transmission Organization must prepare a public report that assesses whether any division of operational responsibilities hinders the Regional Transmission Organization in providing reliable, non-discriminatory and efficiently priced transmission service.

(ii) The Regional Transmission Organization must be the security coordinator for the facilities that it controls.

Note: This provision requires that the Regional Transmission Organization undertake the functions in its region currently assigned to security coordinators by NERC in "NERC Operating Policy 9 - Security Coordinator Procedures." It is

recognized that NERC "security coordinators" are relatively new and that they may not necessarily be permanent institutions. However, the functions NERC currently assigns to security coordinators are critical ones that should be performed by the entity with operational authority for transmission facilities within the region.

(4) Short-term Reliability. The Regional Transmission Organization must have exclusive authority for maintaining the short-term reliability of the grid that it operates.

(i) The Regional Transmission Organization must have exclusive authority for receiving, confirming and implementing all interchange schedules.

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(ii) The Regional Transmission Organization must have the right to order redispatch of any generator connected to transmission facilities it operates if necessary for the reliable operation of these facilities.

(iii) When the Regional Transmission Organization operates transmission facilities owned by other entities, the Regional Transmission Organization must have authority to approve or disapprove all requests for scheduled outages of transmission facilities to ensure that the outages can be accommodated within established reliability standards.

(iv) If the Regional Transmission Organization operates under reliability standards established by another entity (e.g., a regional reliability council), the Regional Transmission Organization must report to the Commission if these standards hinder it from providing reliable, non-discriminatory and efficiently priced transmission service.

(j) Required Functions of a Regional Transmission Organization. The Regional Transmission Organization must perform the following functions. Unless otherwise noted, the Regional Transmission Organization must satisfy these obligations when it commences operations.

(1) Tariff administration and design. The Regional Transmission Organization must administer its own transmission tariff and employ a transmission pricing system that will promote efficient use and expansion of transmission and generation facilities. The Regional Transmission Organization must carry

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out this function by satisfying the standards listed in subparagraphs (j)(1)(i) and (ii) below, or by demonstrating that an alternative proposal is consistent with or superior to satisfying such standards.

(i) The Regional Transmission Organization must be the only provider of transmission service over the facilities under its control, and must be the sole administrator of its own Commission-approved open access transmission tariff. The Regional Transmission Organization must have the sole authority to receive, evaluate, and approve or deny all requests for transmission service. The Regional Transmission Organization must have the authority to review and approve requests for new interconnections.

(ii) The Regional Transmission Organization tariff must not result in transmission customers paying multiple access charges to recover capital costs for transmission service over facilities that the Regional Transmission Organization controls (i.e, no pancaking of transmission access charges).

(2) Congestion management. The Regional Transmission

Organization must ensure the development and operation of market mechanisms to manage transmission congestion. The Regional Transmission Organization must carry out this function by satisfying the standards listed in subparagraph (j)(2)(i) below, or by demonstrating that an alternative proposal is consistent with or superior to satisfying such standards.

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(i) The market mechanisms must accommodate broad participation by all market participants, and must provide all transmission customers with efficient price signals that show the consequences of their transmission usage decisions. The Regional Transmission Organization must either operate such markets itself or ensure that the task is performed by another entity that is not affiliated with any market participant.

(ii) The Regional Transmission Organization must satisfy this requirement no later than one year after it commences initial operation.

(3) Parallel path flow. The Regional Transmission Organization must develop and implement procedures to address parallel path flow issues within its region and with other regions. The Regional Transmission Organization must satisfy this requirement with respect to coordination with other regions no later than three years after it commences initial operation.

(4) Ancillary services. The Regional Transmission Organization must serve as a supplier of last resort of all ancillary services required by Order No. 888, FERC Stats. & Regs. - 31,036 (Final Rule on Open Access and Stranded Costs), and subsequent orders. The Regional Transmission Organization must carry out this function by satisfying the standards listed in

subparagraphs (j)(4)(i)-(iii) below, or by demonstrating that an alternative proposal is consistent with or superior to satisfying such standards.

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(i) All market participants must have the option of self-supplying or acquiring ancillary services from third parties subject to any restrictions imposed by the Commission in Order No. 888, FERC Stats. & Regs. - 31,036 (Final Rule on Open Access and Stranded Costs), and subsequent orders.

(ii) The Regional Transmission Organization must have the authority to decide the minimum required amounts of each ancillary service and, if necessary, the locations at which these services must be provided. All ancillary service providers must be subject to direct or indirect operational control by the Regional Transmission Organization. The Regional Transmission Organization must promote the development of competitive markets for ancillary services whenever feasible.

(iii) The Regional Transmission Organization must ensure that its transmission customers have access to a real-time balancing market. The Regional Transmission Organization must either develop and operate such markets itself or ensure that this task is performed by another entity that is not affiliated with any market participant.

(5) OASIS and Total Transmission Capability (TTC) and Available Transmission Capability (ATC). The Regional Transmission Organization must be the single OASIS site administrator for all transmission facilities under its control and independently calculate TTC and ATC.

(6) Market monitoring. The Regional Transmission Organization must monitor markets for transmission services,

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ancillary services and bulk power to identify design flaws and market power and propose appropriate remedial actions. The Regional Transmission Organization must carry out this function by satisfying the standards listed in subparagraphs (j)(6)(i)-(iv) below, or by demonstrating that an alternative proposal is consistent with or superior to satisfying such standards.

(i) The Regional Transmission Organization must monitor markets for transmission service and the behavior of transmission owners, if any, to determine if their actions hinder the Regional Transmission Organization in providing reliable, efficient and nondiscriminatory transmission service.

(ii) The Regional Transmission Organization must monitor markets for ancillary services and bulk power. This obligation is limited to markets that the Regional Transmission Organization operates.

(iii) The Regional Transmission Organization must periodically assess how behavior in markets operated by others (e.g., bilateral power sales markets and power markets operated by unaffiliated power exchanges) affects Regional Transmission Organization operations and conversely how Regional Transmission Organization operations affect the performance of power markets operated by others.

(iv) The Regional Transmission Organization must provide reports on market power abuses and market design flaws to the Commission and affected regulatory authorities. The reports must

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contain specific recommendations about how observed market power abuses and market flaws can be corrected.

(7) Planning and expansion. The Regional Transmission Organization must be responsible for planning necessary transmission additions and upgrades that will enable it to provide efficient, reliable and non-discriminatory transmission service and coordinate such efforts with the appropriate state authorities. The Regional Transmission Organization must carry out this function by satisfying the standards listed in subparagraphs (j)(7)(i) and (ii) below, or by demonstrating that an alternative proposal is consistent with or superior to satisfying such standards.

(i) The Regional Transmission Organization planning and expansion process must encourage market-driven operating and investment actions for preventing and relieving congestion.

(ii) The Regional Transmission Organization's planning and expansion process must accommodate efforts by state regulatory commissions to create multi-state agreements to review and approve new transmission facilities. The Regional Transmission Organization's planning and expansion process must be coordinated with programs of existing RTGs where necessary.

(iii) If the Regional Transmission Organization is unable to satisfy this requirement when it commences operation, it must file a plan with the Commission with specified milestones that will ensure that it meets this requirement no later than three years after initial operation.

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(k) Open architecture.

(i) Any proposal to participate in a Regional Transmission

Organization must not contain any provision that would limit the capability of the Regional Transmission Organization to evolve in ways that would improve its efficiency, consistent with the requirements in paragraphs (i) and (j) of this section.

(ii) Nothing in this regulation precludes an approved Regional Transmission Organization from seeking to evolve with respect to its organizational design, market design, geographic scope, ownership arrangements, methods of operational control and other appropriate ways if the changes are consistent with the requirements of this section. Any future filing seeking approval of such changes must demonstrate that the proposed changes will meet the requirements of paragraphs (i), (j) and (k) of this section.

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APPENDIX A

STAFF SUMMARY OF FERC-INDUSTRY ISO CONFERENCES  
(Docket No. PL98-5-000)

During 1998, the Commission conducted a series of eight public conferences with the electric power industry for the purpose of examining its ISO policies. The Commission wanted to learn whether any changes to its policies that affect the development of ISOs and other forms of regional grid management structures are appropriate to further promote competition and reliability in bulk power markets. The Commission also wanted to learn whether it should also be more prescriptive in this area. The Commission also focused on the future of ISOs in administering the electric transmission grid on a regional basis.

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## ISO Trust, Flexibility and Mandate

Participants largely agreed on the need for improved regional organizations to operate the grid and implement reliability rules. They emphasized the need for transmission operations to be structurally independent, trustworthy, and fair in order for competitive generation markets to flourish. There seemed to be a consensus that any Commission ISO policy should be flexible to meet the needs and characteristics of each region and

297/ See Inquiry Concerning the Commission's Policy on Independent System Operators, Notice of Conference (dated March 13, 1998), and Notice Of Panels For Conference (dated April 7, 1998). See also, Inquiry Concerning the Commission's Policy on Independent System Operators, Notice Of Regional Conferences (dated April 27, 1998).

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its state commissions, and that the Commission should avoid any one-size-fits-all approach to ISO structure and functions that might stifle innovation. Participants differed, however, on whether the Commission should require or merely encourage ISOs.

Reasons offered as to why the voluntary approach to ISO formation has not worked uniformly across the Nation included: (1) some states that have not yet decided on retail access believe that an ISO inevitably will lead to retail access; (2) some low-cost states are concerned that ISOs and retail access will increase their electric rates because utilities will be able to use ISOs to sell their low-cost power elsewhere; (3) some see ISOs as overly expensive, burdensome, and bureaucratic; and (4) some see transmission access as having improved enough through the on-going implementation of Order Nos. 888 and 889.

Recommendations on what the Commission should do next ranged from wait and see, to act decisively now. Some in the first camp

claimed that the Commission lacks the authority to mandate participation in ISOs. Some counseled that the Commission should continue to just nurture the formation of ISOs and allow development of organizations that best fit the local needs of a particular region and avoid stifling innovation by continuing the case-by-case approval of voluntary ISO submittals. Some suggested that the Commission merely define its basic objective as the availability of efficient and reliable transmission service on a non-discriminatory basis, and to encourage hold-outs to join.

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Those conference participants favoring stronger action contended that functional unbundling has not worked well enough and that it is unrealistic to expect it to do so. Many claimed that some vertically integrated utilities are employing preferential reliability practices or manipulating postings of ATC and capacity benefit margin values to favor their own wholesale merchant functions. They further claimed that there is a reluctance to lodge complaints out of concern that the Commission may not take strong action or there might be reprisals by the utilities. Others contended that some utilities are impeding ISO formation by refusing to participate, and that, as long as ISO boundaries are drawn by the voluntary decisions of the transmission owners to pick and choose the ISO which most advances their individual corporate and competitive objectives, the result is likely to be ISOs whose shape and composition impede its ability to create a true competitive market. Strong action advocates also seemed to be looking for clear guidance on transmission pricing, operation of energy markets, and the phase-

in of certain ISO responsibilities.

Many of those concerned about a patchwork of ISO grid coverage suggested that now is the time for the Commission to mandate ISOs (possibly tempered with incentives), or at least mandate participation in negotiations on ISO formation. Several suggested that the Commission work with the states to develop specific directives and guidelines as a way to assure that enough momentum on ISO formation is achieved. One guideline that was

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suggested would incorporate a standardized ISO tariff and a standardized set of rules governing reciprocity among ISOs. It would be coupled with a flexible ISO design that could accommodate varying regional needs. Others variously recommended (1) specification of minimum ISO functions as a basic model and letting the regions justify any departure therefrom; (2) ordering the formation of ISOs and allowing enough time for each region to develop a proposal that best suits its local needs; and (3) exercising all Commission authority to monitor and manage comprehensive ISO formation.

#### ISO Purposes and Functions

The many notions about what the proper functions of an ISO should be seemed to reflect what each participant saw as the critical regional objectives (e.g., promotion of retail access; more efficient grid operation, planning and expansion; enhanced system reliability; elimination of loop flow issues; solution of "seams" problems between control areas; elimination of rate pancaking; improved congestion management; enhanced reserve sharing; establishment of one-stop shopping through creation of a regional OASIS; enhanced market monitoring, and improved real-

time communication among all transmission entities).

Accordingly, suggested ISO functions included: control area responsibilities; numerous security coordinator and reliability duties; impartial operation of a regional OASIS to improve ATC postings; administration of an ISO-wide tariff; generation

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redispatch duties to relieve congestion; and ancillary services markets coordination responsibilities.

Some participants argued, however, that certain functions should not be foisted upon ISOs. Some contended that it would be detrimental to the markets and the administration of ISOs if ISOs become involved with functions that are not natural monopolies such as power exchange activities because this would compromise the ISO's independence in fulfilling its primary transmission responsibilities. Many cautioned that an ISO should not be involved in market monitoring beyond data gathering tasks, due to the attendant administrative burden and cost, and because enforcement should be the sole prerogative of regulatory authorities.

#### ISO Size

Most participants agreed that, as a general proposition, bigger ISOs can be more effective than smaller ISOs, given the growth in unbundled power sales and the lessening of traditional cooperation among utilities that have now become competitors. For example, with regard to the connection between size and effective reliability management, it was pointed out that an excessive number of control areas in the Midwest has inhibited communication and coordination, and contributed to several of the Midwest's recent reliability "near misses."

Basically, participants saw the "proper" size as depending upon a number of factors: (1) the purposes and functions of the ISO (such as enhancing reliability or accommodating regional

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power markets); (2) the operating characteristics and make-up of the local regional transmission system; (3) being large enough to capture scale economies yet not too big to operate without difficulty and handle large volumes of next-hour transactions; (4) recognizing historic coordination arrangements, trading patterns, and load patterns; and (5) remaining responsive to local transmission concerns and conventions on such matters as how wide an area over which costs associated with transmission construction and generation redispatch should be spread.

#### Alternatives to ISOs

A number of participants counseled that the Commission should seriously consider alternatives to ISOs such as investor-owned transcos, and independent grid administrators or schedulers (IGA or ISA).

IGA/ISA supporters were concerned about what could be quickly implemented that would avoid the high costs that seem to be associated with comprehensive ISO initiatives, yet would provide immediate control over the more egregious actions of some transmission providers. IGA/ISA structures were described to include any of the following: (1) one-stop shopping through an OASIS that uniformly calculates ATC values; (2) independent coordination of reservations and power flow scheduling; and (3) fast-track dispute resolution. It was claimed that such structures would avoid cost-shifting controversies and congestion management complications because the IGA/ISA members would

continue to operate their own transmission and set their own

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individual rates. While there was some support for IGA/ISA structures as an interim step toward full ISO formation, many participants expressed concern about the Commission approving "watered-down" versions of an ISO that fail to address pressing needs for grid expansion and pricing reform.

Transco supporters argued that a transco can offer everything that a full ISO can provide, plus the additional efficiency that is inherent in combining operation and ownership of transmission assets driven by the same corporate and market incentives. Transcos were also said to provide more opportunity for shareholders to benefit from the strong performance of any facilities placed under an ISO. As such, transcos were touted as the natural end-state of transmission restructuring. ISO supporters countered that the ISO structure need not foreclose passing incentive-rate revenues on to transmission owners. They also claimed that, unlike a transco, an ISO is not dependent upon the successful transfer of all of the transmission assets within a region and, if an ISO is sized wrong, it can be more readily corrected than a transco for the same reason.

Finally, some participants suggested that ISOs and transcos are actually complementary forms. Others claimed that who owns the transmission is irrelevant as long as the regional grid operator is independent; it is big enough to internalize loop flows; it directs region-wide transmission planning; and it allows for competitive bidding on the installation of new facilities to expand the grid.

#### ISO Pricing and Cost-shifting Concerns

Some participants supported differing forms of ISO rate structures: flow-based rates, distance-based pricing, average-cost based rates, and locational marginal cost-based pricing. Many cautioned that a Commission mandate on the use of any particular tariff structure would be a major obstacle to the voluntary formation of ISOs; therefore, they recommended that the Commission provide great deference to the needs of each region as to what locally is seen to be fair and reasonable pricing.

In particular, many participants raised concerns about cost-shifting within an ISO that might result from membership with significantly disparate embedded transmission costs and imposition of an ISO-wide access tariff that reflects some composite of such costs. These participants counseled that the Commission should allow "license plate" access rates that reflect only the cost of the transmission zone within the ISO in which the load to be served is located. One participant suggested, however, that even license plate rates can raise cost-shifting concerns, if the cost of an upgrade that is used primarily for the benefit of external loads is included in the cost basis for the affected zone.

#### Non-jurisdictional Transmission Participation

Most participants expressed the view that government-owned and other regional non-jurisdictional transmission owners need to fully participate in an ISO in order for it to be completely successful. It was suggested that this is especially true for

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the West, where large amounts of non-jurisdictional transmission is controlled by Bonneville Power Administration, Western Area Power Administration, Southwestern Power Administration, large municipals, cooperatives, public power districts, British Columbia Hydro, and the Alberta grid. Some participants wanted the Commission to provide guidance on how to bring public power and other non-jurisdictional transmission owners into an ISO. In this regard, some suggested that the Department of Energy needs to issue guidance to the federal power marketing agencies on their active support of any ISO initiatives. Public power participants, who strongly supported ISOs, expressed concern that any ISO participation on their part could adversely affect the financing of their facilities due to Internal Revenue Code "private-use" restrictions.

#### Existing Transmission Contracts

Some participants emphasized the need for ISOs to honor (grandfather) existing transmission contract arrangements to maintain any benefits that were bargained. Others emphasized the need for ISOs to abrogate any existing transmission contracts to eliminate any preferential transmission treatment. Those favoring grandfathering, however, acknowledged that it could become a very complicated administrative matter in the event that there is insufficient transmission capacity to serve everyone.

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#### PANELISTS

The Commission held conferences in Washington, D.C. and in seven cities in different regions of the country.

Washington, D.C.

In the lead-off two-day conference held on April 15-16, 1998, in Washington, D.C., approximately 400 individuals attended each day. Panelists represented:

American Electric Power Company  
American Public Power Association  
California Independent System Operator  
California Independent System Operator, Market Surveillance  
Committee (by Stanford University)  
California Public Utilities Commission  
Cameron McKenna LLP  
Cinergy Energy Services, Inc.  
Commonwealth Edison Company  
Coalition For A Competitive Electric Market (by Enron  
Corporation)  
Economic Analysis Group  
Edison Electric Institute  
Edison Electric Institute (by NERA)  
Electric Power Supply Association.  
Entergy Services, Inc.  
Harvard University (John F. Kennedy School of Government)  
Industrial Consumers (by Electricity Consumers Resource Council)  
ISO New England  
Members Systems of the New York Power Pool (by Putnam, Hayes &  
Bartlette, Inc.)  
Mid-Continent Area Power Pool (by Morgan, Lewis & Bockius)  
Montana Power Company  
National Association of Regulatory Utility Commissioners (by Iowa  
Utilities Board)  
National Rural Electric Cooperative Association  
NGC Corporation  
Pennsylvania Public Utility Commission  
PJM Interconnection, L.L.C.  
Public Utilities Commission of Ohio  
Public Service Commission of the State of New York  
Rhode Island Public Utilities Commission  
Secretary of Energy's Task Force on Electric System  
Reliability  
Sithe Energies, Inc. (By Economics Resource Group)  
Transmission Access Study Group (by Wisconsin Public Power, Inc.)  
Transmission Alliance (by Merrill Lynch)  
Transmission Dependent Utility Systems (by Arkansas Electric  
Corporation)  
U.S. Department of Justice  
U.S. Generating Company and PJM Supporting Companies (by Steptoe

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& Johnson LLP)  
Wabash Valley Power Association, Inc.  
Wisconsin Electric Power Company

Phoenix

Almost 90 people attended the May 28, 1998, Phoenix conference. Panelists represented:

Arizona Corporation Commission  
Arizona Public Service Company  
Automated Power Exchange, Inc.  
California ISO  
Desert STAR  
K.R. Saline & Associates  
Colorado Springs Utilities  
Cyprus Climax Metals, BHP Copper, Phelps Dodge, ASARCO and  
Motorola (by Energy Strategies, Inc.)  
Goldman Sachs & Co.  
Northern California Power Agency.  
Salt River Project Agricultural Improvement and Power District  
Southwest Power Trading Council (by Enron Corp.)  
Tri-State Generation and Transmission Cooperative, Inc.

Kansas City

About 90 people attended the May 29, 1998, Kansas City conference. Panelists represented:

City Utilities of Springfield, Missouri  
Clarksdale Public Utilities Commission  
Cooperative Power Association  
Iowa Utilities Board  
Kansas Corporation Commission  
Mid-America Regulatory Conference (by Kansas Corporation Commission)  
Midwest Coalition for Effective Competition (by MCES and Environmental Law and Policy Center)  
Midwest ISO Participants (by Wisconsin Electric Power Company and Ameren Services)  
Minnesota Department of Public Service  
Missouri Office of Public Counsel  
Missouri Public Service Commission  
Nebraska Public Power District  
Northern States Power Company  
Public Utility Commission of Texas  
Shook, Hardy, Bacon, LLP  
Southwest Power Pool

New Orleans

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The June 1, 1998, New Orleans conference panelists represented:

Arkansas Electric Cooperative  
Entergy Corporation  
Gulf Coast Power Marketers Coalition  
Houston Industries Power Corporation, Inc.  
Lafayette Utilities System  
Louisiana Energy Users Group  
Public Service Commission of Yazoo City, Mississippi  
Southern Company Services, Inc.  
Southwest Power Pool  
Southwestern Public Service Company

Indianapolis

About two hundred people attended the June 4, 1998, Indianapolis conference. Among the panelists represented:

AMEREN

American Municipal Power of Ohio  
Cinergy Services Inc.  
Citizens Action Coalition of Indiana  
Consumers Energy Company  
Detroit Edison Company  
Energy Michigan  
FirstEnergy Corporation  
Illinois Industrial Energy Consumers  
Indiana Municipal Power Agency  
Indiana Utility Regulatory Commission  
Kentucky Public Service Commission  
Madison Gas and Electric Company  
Mid-America Regulatory Commissioners (by Michigan Public Service Commission)  
Midwest Coalition for Effective Competition  
Midwest ISO Participants  
Michigan Public Power Agency  
Minnesota Public Utilities Commission  
Public Utilities Commission of Ohio  
Wisconsin Electric Power Company

Portland

About 160 people attend the June 5, 1998, Portland conference. Panelists represented:

Automated Power Exchange  
Bonneville Power Administration  
California ISO  
California Municipal Utilities Association  
California Public Utilities Commission  
Chelen County PUD (on behalf of Independent Grid Scheduler)

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CIBC Oppenheimer Corp.  
Columbia Falls Aluminum Company, et al.  
Idaho Power Company  
Idaho Public Utilities Commission  
Industrial Customers of Northwest Utilities  
Land and Water Fund of the Rockies Energy Project  
Montana Department of Environmental Quality  
Montana Power Company  
Northern California Power Agency.  
Oregon Public Utilities Commission  
Pacific Northwest Generating Cooperative  
PacifiCorp  
Platte River Power Authority  
Public Power Council  
Public Service Company of Colorado  
Puget Sound Energy, Inc.  
Transmission Agency of Northern California

Turlock Irrigation District  
University of California  
Washington Utilities and Transportation Commission  
Western Power Trading Forum  
Western Regional Transmission Association

Richmond

About 55 people attended the June 8, 1998, Richmond conference. Panelists represented:

Blue Ridge Power Agency  
LG&E Energy (on behalf of Midwest ISO Participants)  
Mid-Atlantic Power Association  
North Carolina Electric Membership Corporation  
Old Dominion Electric Cooperative  
TransEnergie U.S., Ltd.  
Virginia State Corporation Commission  
Virginia Committee for Fair Utility Rates and Old Dominion  
Committee for Fair Utility Rates  
Virginia Electric & Power Company

Orlando

The June 8, 1998, Orlando conference was attended by about 100 people. Panelists represented:

Dynergy  
Enron Power Marketing (by Basford & Associates)  
Florida Municipal Power Agency  
Florida Power & Light Company  
Florida Power Corporation  
Florida Public Service Commission  
Florida Reliability Coordinating Council, Inc.  
Morgan Stanley & Company

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Municipal Electric Authority of Georgia  
National Grid Company of England and Wales  
Seminole Electric Cooperative, Inc.

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OTHER COMMENTERS

Alabama Electric Cooperative, Inc.  
Allegheny Power, et al.  
Barbara R. Barkovich  
California Department of Water Resources  
California Electricity Oversight Board

California Independent Energy Producers Association  
Central Illinois Light Company  
Citizens Group Responsible Use of Rural & Agricultural Land  
Commonwealth of Pennsylvania Utility Commission  
Commonwealth of Virginia, Division of Energy Regulations  
Commonwealth of Virginia State Corporation Commission  
Consumer Counsel Office of the Attorney General of Virginia  
Consumers Energy Company  
Cooperative Power Association  
CSW Operating Companies  
CSX Transportation  
D. Basford & Associates, Inc.  
Dairyland Power Cooperative  
Department of Energy, Bonneville Power Administration  
Desert Southwest Power Trading Council  
Dominion Resources Inc.  
Economic Resources Group, Inc.  
Electricities of North Carolina, Inc.  
Electricity Consumers Resource Council, et al.  
Energy Strategies, Inc.  
Fiona Woolf  
Georgia System Operations Corporation, et al.  
Goldman, Sachs & Company  
Gregory J. Werden  
Gridco Commenters  
Houston Industries, Inc.  
IES Utilities Inc., et al.  
Illinois Commerce Commission  
Independent Grid Scheduler Organizing Group  
Independent Power Producers of New York, Inc.  
Indiana Energy Michigan  
Indiana Office of Utility Consumer Counsel  
Kentucky Utilities Company  
Kentucky Public Service Commission  
Large Public Power Council  
Marija D. Ilic  
Mid-Atlantic Public Service Commissions  
Midwest Independent Transmission System Operator, Inc.  
Midwest Municipal Intervenors, et al.  
Minnesota Power Company  
Minnesota Public Utilities Commission  
Mississippi Office of Public Counsel  
Montana Public Service Commission  
Multiple Public Interest Organizations  
New York Mercantile Exchange

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New Mexico Industrial Energy Consumers  
Northern Indiana Public Service Company  
Northwest Power Plant Planning Council  
Oak Ridge National Laboratory  
Office of Ohio Consumers' Counsel  
Oklahoma Corporation Commission  
Oklahoma Gas and Electric Company  
Orange & Rockland Utilities  
Oregon Public Utilities Commission  
Otter Tail Power Company

Pacific Gas & Electric Company  
PECO Energy Company  
Pennsylvania Office of Consumers Advocate  
PJM Supporting Companies  
Portland General Electric Company  
Powersmiths International, Inc.  
Project For Sustainable FERC Policy  
ProLiance Energy, LLC  
Public Service Commission of Wisconsin  
Public Service Electric & Gas Company  
Public Utilities Board of the City of Brownsville, Texas  
Public Utility District No. 1 of Chelan County, Washington  
Selkirk Cogen Partners, L.P.  
Sierra Pacific Power  
Southern California Gas Company, et al.  
Southwest Transmission Dependent Utility Group  
Staff of Bureau of Economics of the Federal Trade Commission  
State of California Public Utilities Commission  
State of Florida Public Service Commission  
State of Idaho & Idaho Public Utilities Commission  
State of Kansas Citizens' Utility Ratepayer Board's  
State of Minnesota Public Utilities Commission  
State of Montana Department of Environmental Quality  
State of New York Public Service Commission  
State of Rhode Island and Providence Plantations  
The Williams Companies Inc.  
Transmission Operators of Public Service Company of Colorado  
Tucson Electric Power Company  
University of Arizona  
Virginia Committee for Fair Utility Rates, et al.  
Washington Department of Community, Trade and Economic  
Development Energy Policy Group  
Western Area Power Administration  
Wisconsin Intervenors  
Wisconsin Public Power, Inc.  
Wisconsin Public Service Corporation

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APPENDIX B

STAFF SUMMARY OF FERC CONSULTATIONS  
WITH THE STATES  
(Docket No. RM99-2-000)

In Docket No. RM99-2-000, as part of a broader inquiry into its RTO policies, the Commission held a series of three regional conferences to elicit the views and recommendations of state regulatory authorities with respect to the development of independent RTOs and whether and how it should use its authority under section 202(a) of the Federal Power Act. 298/ The Commission also wanted to learn whether the goals of full

competition and non-discriminatory transmission access can be achieved in the absence of broad participation by transmission-owning utilities in RTOs. Conferences were held in St. Louis, Las Vegas, and Washington, D.C. in February 1999.

Need for Commission Mandate

There was little real dispute by participants over the need for independent and impartial regional grid management, whether it be for improved grid operation, increased reliability, identifying promising new generation locations, broadening markets by reducing rate pancaking, or all of these. Most of the states also recognized that the Commission is the necessary and appropriate facilitator for forming RTOs, due to its broad

298/ See Regional Transmission Organizations, Notice Of Intent To Consult Under Section 202(a) dated November 24, 1998, and Notice Of Dates And Locations For Consultation Sessions With State Commissions (dated January 13, 1999).

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jurisdiction. However, comments as to how best the Commission should proceed next were mixed.

One state wondered whether the Commission has the authority to mandate RTOs. Several Northeastern and Mid-Atlantic states that already have strong ISOS were concerned that the Commission might disturb their ISOs before an adequate period of time has elapsed to reveal their strengths and weaknesses. One state suggested that the Commission should look into setting up a joint board of state and federal regulators on RTO issues. Some Southeastern states saw no need for a Federal policy on RTOs right now. They felt that the grid is operated adequately and preferred to let the market sort RTO developments.

States west of the Appalachians generally recognized the need for structural independence of transmission through RTOs beyond functional unbundling sooner rather than later and saw a need for strong Commission leadership on RTO formation. They differed on the urgency and the necessary extent of Commission involvement. Many of the states advocating a more aggressive role were located in the Midwest, which had experienced price spikes during the summer of 1998.

One state insisted that Commission action is needed to quicken the pace of RTO formation so that development of competitive electricity markets is not delayed. One vigorously complained about the persistent lack of fuller RTO participation in the Midwest and the possible strategic advantage to vertically integrated utilities not participating. To counter the

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fragmentation in the Midwest, it recommended that the Commission mandate utility participation or, at a minimum, eliminate pancaked transmission rates within each regional reliability council. Another suggested that the Commission interpret any utility's refusal to join an RTO as an indicator of undue discrimination. One recommended that the Commission strongly promote fuller participation in RTOs by using a combination of "carrots" and "sticks" as incentives.

#### Flexibility

A pervasive theme was the need for the Commission to avoid taking a one-size-fits-all approach to RTOs. Many states recommended that, if the Commission wants to establish RTO policy pursuant to its section 202(a) authority, the policy must be implemented in a way that adequately recognizes any regional

differences in industry structures. One Midwestern state counseled that the Commission should partner with the states to develop a memorandum of understanding (MOU) on regional transmission matters. The MOU would outline common desires and objectives, describe the regulatory tools to get there, and the circumstances under which the tools would be used.

Other states suggested that the Commission, before it considers taking any stronger action, issue guidelines and allow enough time for each state to determine which are appropriate for it in forming regional RTOs. The guidelines would reflect determinations on such issues as how to encourage participation by and otherwise deal with non-jurisdictional transmission

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entities; whether to allow a state to opt out of a mandatory RTO policy; and how to ensure that no state's economy is harmed by an RTO. Several states suggested that cost/benefit analyses be done for each region. Finally, numerous states recommended that the Commission not mingle retail competition issues with RTO issues, contending that retail choice is a state prerogative.

#### RTO Size

Several states were concerned about how large is large enough for an RTO, and how the Commission expects to set the proper regional boundaries. In the East, states served by established ISOs expressed concern that their ISOs might have to incur additional costs for modifications that might be required to meet a potential Commission size criterion before market forces have had the chance to suggest an appropriate size. Some suggested that because the existing ISOs are so crucial to promoting retail competition in states that have already adopted

retail choice, the Commission should carefully consider any order that would expand, merge, or restructure an existing ISO. Some states cautioned that expanding their existing ISOs beyond a certain point might also lead to reliability problems or inheriting problems from adjacent regions.

One state recommended that only minimum size criteria be established rather than the specific locations of boundaries. Other states recommended that, if the Commission insists on establishing regional boundaries, that it consider the relative costs and benefits of an RTO sized according to each regional

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boundary set. One state suggested that the Commission rely on the existing NERC regional councils as the starting point for determining proper RTO boundaries. Another state suggested that the Mid-Continent Area Power Pool (MAPP) and Mid-American Interconnected Network (MAIN) interfaces should be placed within a single RTO. Some western states contended that, while only one regional reliability council serves the West, many non-jurisdictional cooperative and government utilities control such a substantial amount of transmission that creating RTOs in the West will be difficult absent clear direction from the Commission.

#### Alternative Forms of RTOs

While several states argued that competing ISO and transco structures could lead to further fragmentation and limited RTO operations, others argued that mandating specific forms of RTOs now would impede the ability of the states and regions to adopt models that are best suited for their particular needs and that the Commission should not lock in particular RTO structures but

should instead retain flexibility to address changing future needs. One state favored a non-profit ISO structure, because it doubted that the industry would lend itself to the development of any transco with sufficient geographic coverage and adequate independence from generation interests. It noted, however, that if a for-profit transco could meet the size and independence criteria, the transco would have advantages over an ISO in the

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form of a stronger business orientation and superior access to capital for grid expansion.

#### Transmission Cost Shifting and Low Power Cost States

Many states counseled that the Commission should allow a region to opt-out of an average cost based RTO-wide rate, if such a rate would shift highly disparate embedded transmission costs among its RTO customers and force some to suffer transmission rate increases. Many western states suggested that concern over the enhanced ability of utilities to export their low cost power to other regions through an RTO, as well as concerns about transmission cost shifting, not only led to the demise of the IndeGo ISO but has thwarted further RTO development in the West.

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#### PANELISTS

St. Louis

About 120 people attend the February 11, 1999, conference in St. Louis. Panelists represented commissions in:

Arkansas  
Florida

Illinois  
Indiana  
Iowa  
Kansas  
Kentucky  
Michigan  
Minnesota  
Missouri  
Nebraska  
North Dakota  
Ohio  
Oklahoma  
South Dakota  
Tennessee  
Texas  
Wisconsin

Las Vegas

About 96 people attended the February 12, 1999, conference held in Las Vegas. Panelists represented commissions in:

Arizona  
California  
Colorado  
Idaho  
Montana  
Nevada  
New Mexico  
Oregon  
Utah  
Washington  
Wyoming

Washington, D.C.

The panelists at the February 17, 1999, conference in Washington, D.C. represented commissions in:

Alabama  
Connecticut  
District of Columbia  
Georgia

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Maryland  
Massachusetts  
Mississippi  
New Jersey  
New York  
North Carolina  
Pennsylvania  
Rhode Island  
West Virginia

OTHER COMMENTERS

Canadian Electricity Association  
ISO New England  
Mid-American Regulatory Commissioners  
National Association of Regulatory Utility Commissioners  
New England Conference of Public Utilities Commissioners, Inc.  
Regional Electric Power Cooperation  
Virginia State Corporation Commission  
Western Interstate Energy Board

APPENDIX C

EXISTING CONFIGURATIONS

This Appendix depicts the three existing configurations discussed in Section III.D.2: the three electric interconnections within the continental United States, the ten NERC reliability councils, and the twenty-three NERC security coordinator areas.

[Attachments not on disk]