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Federal Energy Regulatory Commission

1996 Annual Report

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Discusses the activities of the Federal Energy Regulatory Commission in FY 1996. It is the agency's and its predecessor's, the Federal Power Commission, 76th report to Congress. Areas covered are the natural gas, electric utility, hydroelectric power, and oil pipeline transportation industries. The Commission's major achievement in this fiscal year was the restructuring of wholesale electric power service with Order Nos. 888 and 889. This will bring unprecedented competition to the industry, save consumers billions of dollars, and pave the way for state-sanctioned retail competition. A hydroelectric power table lists projects for which licenses will expire between January 1, 1997, and December 31, 2002.

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Federal Energy Regulatory Commission

1996 Annual Report

Moose near a Central Maine Power Company hydropower project. Wildlife is common at many hydropower projects licensed by the Commission, which considers environmental issues as part of its licensing process.

Members of the Federal Energy Regulatory Commission

Vicky A. Bailey
Commissioner

James J. Hoecker
Commissioner

Elizabeth A. Moler
Chair

William L. Massey
Commissioner

Donald F. Santa, Jr.
Commissioner

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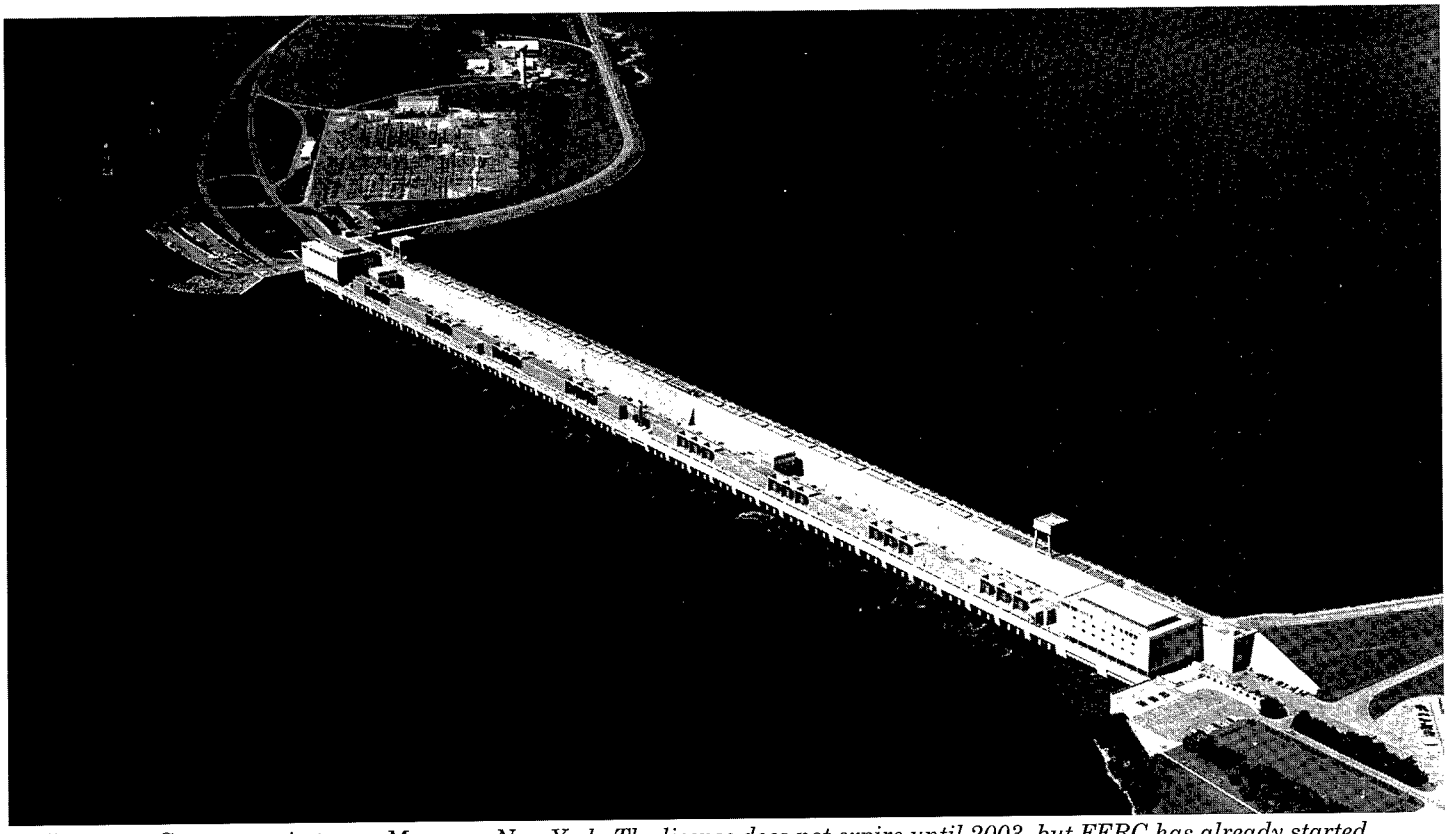
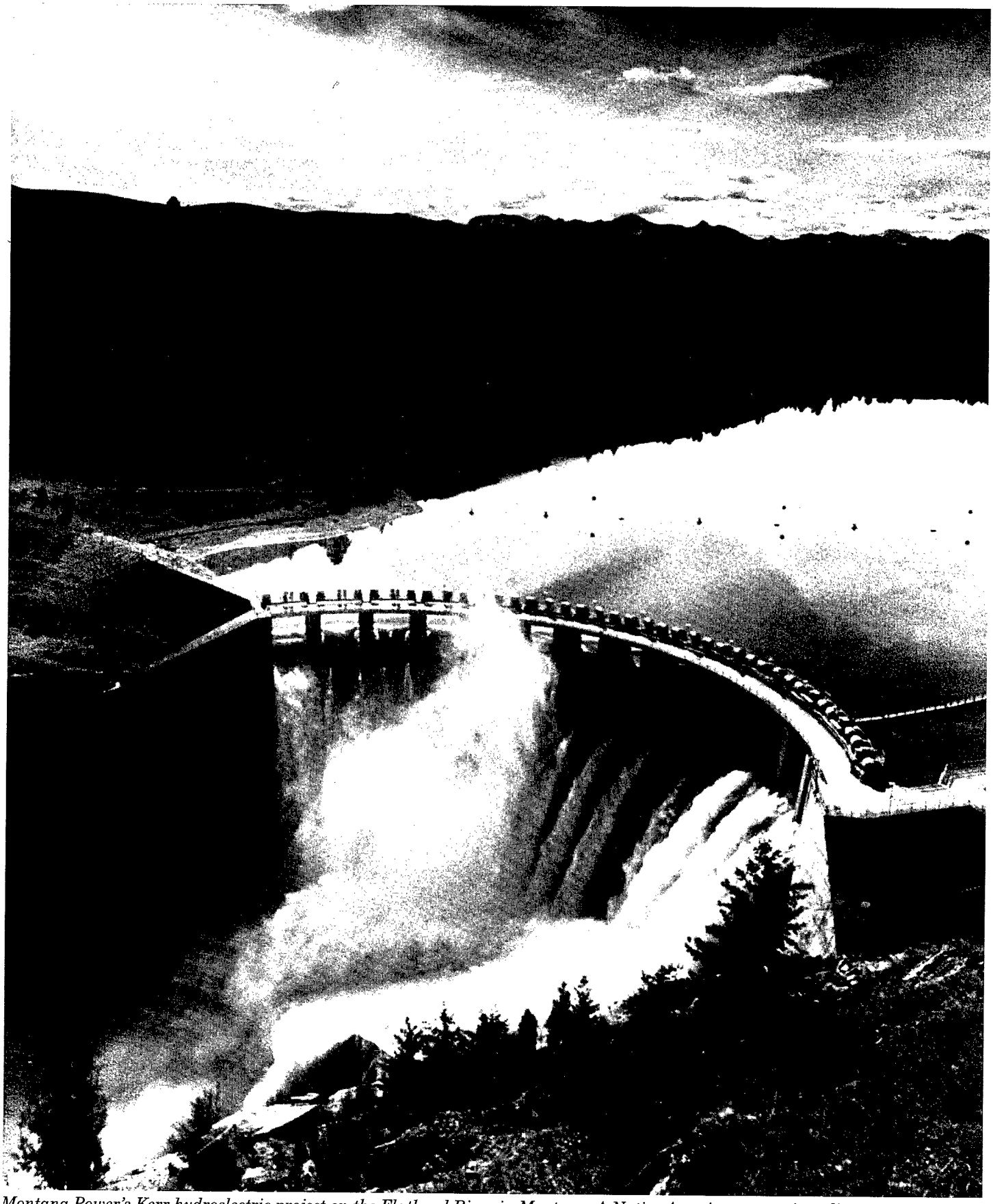


St. Lawrence Seaway project near Massena, New York. The license does not expire until 2003, but FERC has already started intensive talks with interested parties to help define the environmental issues.



Montana Power's Kerr hydroelectric project on the Flathead River in Montana. A Native American group is co-licensee.

The Commission In Brief

The Federal Energy Regulatory Commission (FERC) is an independent regulatory commission within the Department of Energy (DOE). Its function is to oversee America's electric utilities, natural gas industry, hydroelectric projects and oil pipeline transportation system.

The Commission was created through the Department of Energy Organization Act on October 1, 1977. At that time, the Federal Power Commission (FPC), the Commission's predecessor which was established in 1920, was abolished and the Commission inherited most of the FPC's regulatory mission.

The FERC administers numerous laws and regulations involving key energy issues. These include:

- Transportation of natural gas in interstate commerce;
- Transportation of oil by pipeline in interstate commerce;
- Transmission and wholesale sales of electric energy in interstate commerce;
- Licensing and inspection of private, municipal, and state hydroelectric projects; and
- Oversight of related environmental matters.

The Commission's primary legal authority comes from the Federal Power Act of 1935 (FPA), the Natural Gas Act of 1938 (NGA), the Interstate Commerce Act of 1976 (ICA), the Natural Gas Policy Act of 1978 (NGPA), the Public Utility Regulatory Policies Act of 1978 (PURPA), and the Energy Policy Act of 1992 (EPAct).

The Commission has five members who are appointed by the President with the advice and consent of the Senate to five-year staggered terms. Each Commissioner has an equal vote on regulatory matters and no more than three Commissioners may belong to the same political party. One member is designated by the President to serve as Chair and is the Commission's administrative head.

The Commission generally meets twice a month. It considers license and certificate applications, rate filings, and other matters submitted by regulated companies, and sets industry-wide rules. Commission meetings are open to the public under the Government in the Sunshine Act and are televised. ◆

Letter From the Chair

To the Senate and House of Representatives:

I am pleased to submit to the Congress the Federal Energy Regulatory Commission's annual report, covering the fiscal year from October 1, 1995, through September 30, 1996.

This is the 76th report issued by the Commission and its predecessor, the Federal Power Commission. As an independent agency, the Commission oversees key operating functions of the natural gas, electric utility, hydroelectric power, and oil pipeline transportation industries.

The Commission's major achievement in this fiscal year was the restructuring of wholesale electric power service with Order Nos. 888 and 889. This will bring unprecedented competition to the industry, save consumers billions of dollars, and pave the way for state-sanctioned retail competition.

For fiscal year 1996, Congress appropriated $131,300,000 to support Commission activities. Under the authority of the Omnibus Budget Reconciliation Act of 1986 and other laws, the Commission recovers all of its costs from regulated industries through fees and annual charges. Revenues generated from these sources are used to offset congressional appropriations and result in a net cost to the treasury of zero dollars. Therefore, the users and beneficiaries of the Commission's services—not the general taxpayers—pay its operating costs.

Respectfully,

Elizabeth A. Moler

Elizabeth A. Moler
Chair

Commission Responsibilities

Electric Power

The Commission oversees wholesale electric rates and service standards, as well as the transmission of electricity in interstate commerce, under the FPA. The Commission's responsibilities include the review of utility pooling and coordination agreements. The Commission uses its ratemaking authority to ensure that wholesale power rates and transmission rates charged by utilities are just and reasonable and not unduly discriminatory or preferential. EPAct amended the FPA to provide the Commission with additional authority to (1) order the provision of transmission services upon request, and (2) to authorize certain types of wholesale power producers exempt from regulation by the Securities and Exchange Commission (SEC).

Sales of electricity for resale (sales between public utilities or sales by a public utility to a municipality or a cooperative) and sales of transmission service comprise a little over a quarter of total U.S. investor-owned electric utility sales. Retail electric sales (sales to end-use customers such as homeowners and businesses) comprise the remaining three quarters and are generally regulated by state public utility commissions.

The Commission also has regulatory responsibilities with respect to certain corporate activity by public utilities, including the issuance of certain stock and debt securities, assumption of obligations and liabilities, and mergers, consolidations, and dispositions of jurisdictional public utility facilities. In addition, the Commission reviews interlocking directorates involving public utilities, electrical equipment suppliers, and entities authorized to underwrite public utility securities.

Finally, the Commission reviews rates set by the federal power marketing administrations, and certifies qualifying small power production and cogeneration facilities under PURPA.

Natural Gas

The NGA, the NGPA, the Outer Continental Shelf Lands Act (OCSLA), the Natural Gas Wellhead Decontrol Act of 1989 (NGWDA), and EPAct are the primary laws the Commission administers to oversee America's natural gas pipeline industry.

Under the NGA, the Commission regulates both the construction of pipeline facilities and the transportation of natural gas in interstate commerce. Companies providing services, and constructing and operating interstate pipeline facilities, must first obtain Commission certificates of public convenience and necessity. In addition, Commission approval is required to end (abandon) facility use and services, as well as to set rates for these services.

The Commission also regulates the transportation of natural gas as authorized by the NGPA and the OCSLA.

The Commission no longer regulates the price of natural gas at the wellhead. The NGPA's wellhead pricing program required the Commission to administer ceiling prices for certain categories of natural gas production in interstate commerce. On January 1, 1993, the NGWDA removed all remaining NGPA wellhead price controls for natural gas and all NGA filing requirements for natural gas producers.

Finally, the DOE Organization Act vests approval authority in the Commission to oversee construction and operation of facilities needed by pipelines at the point of entry or exit to import or export natural gas.

Hydroelectric Power

Hydroelectric power regulation was the first work undertaken by the FPC after Congress passed the Federal Water Power Act in 1920. Subsequent statutes under which the Commission regulates non-federal hydroelectric power projects that affect navigable waters, occupy U.S. public lands, use water or water power at a government dam, or affect the interests of interstate commerce include the FPA, PURPA, the Electric Consumers Protection Act of 1986 (ECPA), and EPAct. This work includes issuing project licenses and exemptions from licensing, ensuring dam safety, performing project compliance activities, investigating and assessing payments for headwater benefits, and coordinating with other agencies. Commission licensing costs are offset by annual charges collected from license holders. The Commission also determines charges for a licensee's use of federal lands, federal dams, and Native American reservations.

Licensed projects receive comprehensive safety inspections. Dam safety is a FERC priority.

Oil Pipelines

Under the ICA and EPAct, the Commission regulates the rates and practices of oil pipeline companies engaged in interstate transportation. The objective is to establish just and reasonable rates to encourage maximum use of oil pipelines—a relatively inexpensive means of bringing oil to market—while protecting shippers and consumers against unjustified costs.

The Commission does not oversee the construction of oil pipelines or regulate the supply or price of oil or oil products. Rather, it assures shippers equal access to pipeline transportation, equal service conditions on a pipeline, and reasonable rates for moving petroleum and petroleum products by pipeline. ◆

Administration

Operating Expenses

The Commission's budgetary resources for Fiscal Year (FY) 1996 totaled $165.4 million, consisting of an appropriation of $131.3 million and resources brought forward from prior year balances. In FY 1996, the Commission had obligations of $155.3 million in three major categories:

- Salaries and benefits—
  $103.9 million, or 67 percent;
- Fixed costs (i.e., building rent and utilities) and other support costs (i.e., postage, telecommunications, data processing, printing, and travel)—
  $45.3 million, or 29 percent; and
- Contracts (e.g., environmental reviews)—
  $6.1 million, or 4 percent.

Obligations for the three program areas were:

- Electric Power—
  $41.1 million 26 percent
- Hydropower—
  $51.2 million 33 percent
- Natural Gas and Oil—
  $63.0 million 41 percent

Revenue

In FY 1996, the Commission collected revenues of $181.3 million. Of that, $131.3 million was applied directly to offset the Commission's FY 1996 appropriation, reducing it to $0. The remaining revenue of $50.0 million was deposited in the U.S. Treasury General Fund. Following is a breakdown of the type of revenue collected:

- Annual charges—
  $176.4 million 97 percent
- Filing fees—
  $0.9 million 1 percent
- Miscellaneous—
  $4.0 million 2 percent

FERC's Anthony Trice keeps busy as Order No. 888 filings pour in on deadline day—July 9. All but one of 167 utilities met the deadline.

Information Technology

Through the introduction of improved technology, the Commission continues its efforts to provide the public and staff with the most effective means of gathering and using information. A large part of the technology focus during the first quarter of FY 1996 was on the move to the Commission's new building, which is wired with fiber optic cable to accommodate new and emerging technologies. The building also features a new Computer Resources Center that houses the Commission's mainframe and mid-range computers, local area network (LAN) servers and gateways, a voice-mail system, and cable management system. It also acts as the network control center.

The Commission has over 1,600 personal computers as well as numerous portable and notebook computers for use by staff while on travel. Throughout FY 1996, the Commission has continued to replace older personal computers with newer, faster and more functional versions. The Commission continued to upgrade its LAN in order to increase its reliability and availability. The Commission has become increasingly dependent on the LAN and its electronic mail services to accomplish its workload. FY 1997 activities will continue to focus on re-engineering the Commission's systems to take advantage of its client/server network environment as well as gathering the requirements for a new enterprise-wide management information system.

During FY 1996, with the support of the National Technical Infor-

mation Service's Fedworld, the Commission developed a home page on the World Wide Web (www.fedworld.gov/ferc/ferc.html). The Commission is exploring ways to increase its use of both Internet and Intranet technologies to disseminate and receive information electronically, including electronic filings. A multi-office group, the Electronic Information Management Committee, is examining both the technical, procedural, and legal issues associated with electronic filings. The Commission plans to conduct a number of pilot projects on this subject during FY 1997.

The Commission's Remote Public Access (RPA) system continues to provide the public with access to Commission records, with well over 500 different entities using this service. The Commission's expanded Electronic Bulletin Board (EBB) system, which features the Commission Issuance Posting System (CIPS) and unique bulletin boards for the Office of Chief Accountant, Office of Electric Power Regulation, and the Office of Pipeline Regulation continues to see increased usage. Daily calls to the Bulletin Board System are up from an average of 700 in FY 1995 to 825 in FY 1996. Downloaded files have increased from approximately 32,000 per day in FY 1995 to 50,000 in FY 1996.

Significant progress was made toward implementing the new Records and Information Management System (RIMS) during the year. The development of an entirely new index structure will be completed in FY 1997. This will provide the public and staff with more information and will provide increased document search capabilities well beyond those of the RIMS "Proof Of Concept" which was implemented in early FY 1995. With the exception of oversized documents, all documents are now being scanned into the RIMS system and their images are accessible from over 125 work stations throughout the Commission.

Printing and Distribution

The Commission's Printing and Distribution Services area produced over 25.1 million pages of printed materials during the year. This included notices, decisions, orders, court briefs, environmental impact statements (EIS), and administrative printing through the Commission's copy center and the Government Printing Office (GPO).

The Docutech, an electronic duplicating system, installed during 1995, continues to be used in the transfer of documents through the LAN from the user's work station directly to the printing equipment. It is also being used to publish the Commission's newsletter, *The FERC Insider.*

Consolidation into the new building at 888 First Street Northeast made it possible to reduce the number of copiers throughout the Commission from 63 to 49. The consolidated copier program eliminated the numerous "convenience copiers" and allowed the agency to purchase a reduced amount of high speed copiers to increase efficiency and timeliness for all duplicating requirements.

Public Reference Room

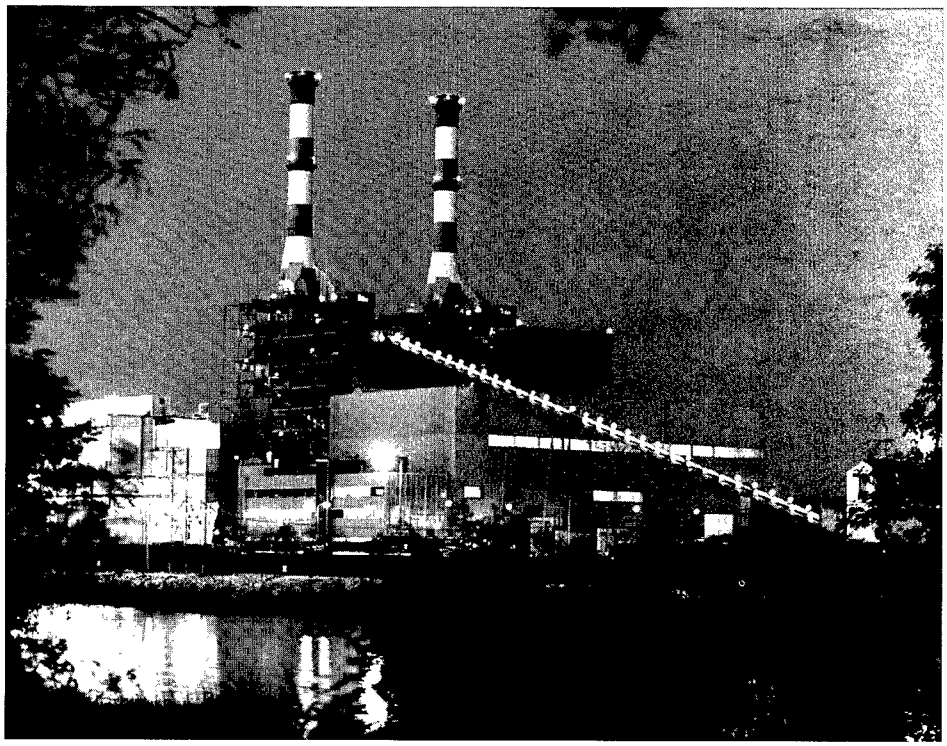
The Public Reference Room is the Commission's main point of contact for meeting the public's information needs. The Records Maintenance Center is the official repository of the Commission's records and documents. Under the Commission's information rules, most documents are readily available for inspection and photocopying. The Public Reference Room serves as both a library and reference center for the public and Commission staff, providing requested records and documents in electronic and microfilm/microfiche formats.

During 1996 several service improvement initiatives were accomplished. The publication *A Guide to Public Information at the Federal Energy Regulatory Commission* was updated. A new high-speed, high-volume printer was installed to expedite printing documents from RIMS III. Periodic user forums were held to improve communications and customer relations, and a survey was conducted to determine the level of customer satisfaction. Follow-up actions were taken on all comments and suggestions. ◆

Electric Power

Overview

During FY 1996, the Commission ordered sweeping changes for the electric utility industry. On April 24, the Commission issued two orders. The first was Order No. 888 entitled *Promoting Wholesale Competition Through Open Access Nondiscriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities.* This rule requires all public utilities that own, control, or operate transmission facilities to provide nondiscriminatory open access transmission services and provides for a stranded cost mechanism to aid in the transition to a more competitive industry. The new rule went into effect on July 9, 1996, as described below. The second, Order No. 889 entitled *Open Access Same-Time Information Systems and Standards of Conduct (OASIS),* requires utilities to develop an Internet-based bulletin board system that will provide information about the availability of transportation capacity on transmission lines. With the implementation of these initiatives, the Nation will see the largest transformation in the electric power industry since the passage of the FPA in 1935. Over the next few years, the Commission's role will be to lead the electric power industry through this revolutionary transition. The Commission estimates that the new open access initiatives will save consumers between $3.8 and $5.4 billion annually. They will also pave the way for state retail access or customer choice initiatives.



Baltimore Gas & Electric Company's C.P. Crane Steam-Electric Generating Station. The utility and Potomac Electric Power Company have asked FERC to allow them to merge.

The Commission and the FPC before it have regulated rates for the transmission and sale for resale of electric energy in interstate commerce since the passage of the FPA. Historically, wholesale electric rates have been established based on cost-of-service regulation. However, the electric utility industry is changing in the face of an emerging competitive market for wholesale power service. Increasingly, the Commission is relying on market forces rather than cost-of-service regulation to discipline wholesale electricity prices.

Under the FPA, the Commission regulates interstate wholesale power rates, transmission service and rates, and certain corporate activities of about 370 electric utilities. The number subject to Commission rate regulation has increased in recent years with the emergence of nontraditional entities such as power marketers and independent power producers (IPPs). The Commission's workload is increasingly affected by non-public utilities, such as municipal and cooperative utilities, that file for determinations that their transmission tariffs provide for comparable open access under the reciprocity provisions of Order No. 888. The Commission also determines qualifying facility (QF) status for small power producers and cogenerators under PURPA, determines exempt wholesale generator (EWG) status under Section 32 of the Public Utility Holding Company Act of 1935 (PUHCA), as amended by EPAct, and reviews the rates of the five federal power marketing administrations.

The Commission analyzes and acts on filings involving:

- Wholesale power sales and transmission of electric energy in interstate commerce by public utilities;
- Applications to order transmitting utilities to provide transmission service;
- Regional transmission groups, exempt wholesale generators, and small power producers and cogenerators;
- Corporate mergers and acquisitions, security issuances and assumptions of liabilities, and interlocking directorates;
- Rates for power marketed from federal hydroelectric projects; and
- Accounting and financial reporting issues.

EPAct significantly accelerated reform in the electric power industry. Not only did the statute encourage new EWGs but EPAct's transmission access provisions also opened a window through which sellers and buyers could reach each other. The impact of the changes has been enormous. The Commission has approved more than 300 exempt EWGs and has received 30 requests for transmission services. However, competitive pressures have grown faster than anticipated. Economic and technological changes over the last several years have led to new sources of generation that can be marketed at prices far lower than existing rates. Consumers demand access to these lower cost producers. In response, the Commission issued Order Nos. 888 and 889—rules that will allow competition in wholesale generation markets to take hold.

The orders signal an important change in the way transmission services are provided. Transmission-owning utilities regulated by the Commission can no longer use their control over transmission lines to block competitors that produce electric power at lower cost. The orders will permit wholesale buyers and sellers of electricity to reach one another. This will result in lower prices and additional services for consumers. The Commission anticipates that the restructuring of the electric power industry through these orders will result in savings of $3.8 to $5.4 billion each year and provide other benefits, such as new market mechanisms and technological innovations.

The Commission's goal is to assure that all power generators enjoy nondiscriminatory access to transmission lines so that buyers can reach sellers and competitive wholesale markets can flourish. Part of the process is to ensure that a fair and orderly transition from regulation to competition takes place.

Final Rules Dealing with Open Access Transmission

As indicated, Order Nos. 888 and 889 will have far-reaching effects. Besides requiring public utilities that own, control, or operate transmission lines to file nondiscriminatory open access tariffs that offer others the same transmission services they provide to themselves, Order No. 888 provides for the full recovery of certain stranded costs from departing customers. Stranded costs are those that utilities prudently incurred to serve customers, under a regulated environment, and that could go unrecovered if customers switch to other suppliers.

The Commission determined that the treatment of stranded costs is essential to ensure a fair and efficient transition to a market-oriented electricity industry. Utilities that made large capital investments or contractual commitments in the past under a different regulatory regime, and with the expectation of serving customers into the future, should have a fair opportunity to recover the costs if those customers, under the new, competitive regime, leave the utility's system. Under Order No. 888, stranded costs will be determined on a fact-specific, case-by-case basis that assures customers and utilities fair treatment. Key questions include:

- Did the utility have a reasonable expectation of continuing to serve the departing customer?
- What is the competitive market value of the stranded capacity?
- Who will bear costs that utilities cannot recover from departing customers?

Estimates of the total amount of stranded costs range from $20 billion to $300 billion, most of which is now the subject of state regulation of retail rates. By providing for stranded cost recovery as an essential element of its open access initiative, the Commission will enable consumers to have the benefits of a more competitive industry while also ensuring the financial viability of utilities who provide reliable, essential electric service to our Nation.

Order No. 889 further ensures nondiscriminatory transmission services by requiring same-time electronic dissemination of utility transmission system information and a code of conduct for utility transmission and generation and marketing employees. This will change the way utilities do business and encourage fair competition. We discuss this rule and other issues separately below.

Order No. 888 Environmental Impact Statement

During FY 1995 and FY 1996, the staff prepared an EIS that showed that the effects of Order No. 888 could be positive or negative—depending on whether competition resulting from the rule favors gas or coal—but, in any event, are likely to be small.

The Commission adopted the conclusions of the EIS and found no need for mitigation.

As part of the EIS, the staff also examined the possible economic impact of the rule. They concluded that competitive pressure from Order No. 888 will save between $3.8 and $5.4 billion per year through more efficient use of existing plants. The savings to consumers from new market mechanisms, such as spot markets, futures markets, and trading centers, could be much larger.

In a later order, the Commission reaffirmed its finding that there will be no immediate negative environmental effects from the rule and noted the concurrence of the Environmental Protection Agency (EPA). It said that, should an EPA/state process to address nitrous oxide emissions fail, the Commission would join a government-wide effort to reach a solution and, to the extent it has authority under the FPA, propose ways to mitigate any emissions attributable to the rule.

Order No. 889—Standards of Conduct and Open Access Same-Time Information System

Order No. 889 established standards of conduct for public utilities to ensure that transmission owners and their affiliates do not have an unfair competitive advantage in using information about transmission systems in the marketing of electric power. This rule requires public utilities to:

- Obtain information about their transmission system for their own wholesale power transactions in the same way their competitors do, via an OASIS on the Internet; and
- Completely separate their functions of wholesale power marketing and transmission operation.

OASIS requirements were developed by industry working groups and approved by the Commission. OASIS and the standards of conduct will fundamentally change the way business is conducted in bulk power markets and will continue to evolve as the competitive market matures.

Compliance with Order No. 888

Order No. 888 directed utilities to make a number of filings. By July 9, 1996, public utilities were required to file open access transmission tariffs reflecting the terms and conditions set forth in the Final Rule. In response, all except one of the 167 utilities subject to the rule's requirements made the necessary compliance filing by July 9. Some of those filing sought exemptions from the rule's requirements. More than 100 utilities offered open access as required by the rule. Also, by July 9, public utilities with requirements customers were required to make informational filings showing the unbundled components (wholesale generation, transmission and ancillary service components) of their present requirements power rates. About 80 public utilities submitted these informational filings. In addition, another 70 compliance filings were tendered in July. Some of these were requests by public utilities for waiver of Order Nos. 888 or 889. In others, entities requested determinations of whether they were public utilities subject to the open access tariff filing requirements. The remainder were filings by nonjurisdictional entities seeking waiver of the open access tariff provision which obliges nonjurisdictional transmission customers to provide reciprocal transmission service. About 2,000 interventions were filed in the compliance dockets described above. The Commission has issued a number of orders dealing with baskets of compliance dockets involving informational filings, jurisdictional determinations and requests for waivers. The other compliance filings and related protests are under review and will be the subject of future basket orders.

Order No. 888 directed another round of compliance filings by December 31, 1996. Public utilities must unbundle existing economy power sale rates (separating the power sale rate into wholesale generation, transmission, and ancillary service components). Power pools must adopt open membership requirements and use the open access transmission tariff for pool transactions. Also, all power sales agreements filed with the Commission after July 9 (except those executed on or before that date) must contain unbundled power sale rates, and the related transmission service must be obtained under the open access tariff. Accordingly, all power sale agreements filed with the Commission after July 9 are being evaluated to ensure compliance with these requirements.

Transmission Requests Under Section 211

In order to give the Commission authority to compel a utility to provide transmission service, Congress modified Section 211 of the FPA allowing the Commission to order

tween designated receipt and delivery points. The Commission believes that the proposed reservation-based service may be more compatible with the open access requirements but details of such tariffs need to be developed. The Commission held a technical conference on the matter in September 1996.

- RM96–6—A notice of inquiry (NOI) was commenced relating to the Commission's merger policy (as further discussed below in the Corporate Applications section). We received comments from more than 60 parties.

The Commission, in a ruling sought by the New York Mercantile Exchange, said that its jurisdiction over utility securities does not extend to futures contracts.

FERC Electric Utility Rate Workload

During FY 1996, public utilities filed 3,298 electric rate applications, addressing such issues as market-based rates, transmission arrangements, unit sale rate increases, changes in delivery points, rate reductions, cancellations, and other interchange and power pool services. This represents a significant increase in the Commission's workload. By comparison, 1,666 applications were filed in FY 1994 and 1,851 in FY 1995.

Filings	Non-Formal	Formal
In process at start	489	132
Filed during year	3207	143
Total workload	3696	275
Processed during year	2931	89
In process at end of year	765	186

When a public utility files for rate changes or modifications to its terms or conditions of electric service, the Commission issues a public notice soliciting comments, protests and interventions. The staff acts on many routine, uncontested filings. Approximately 85 percent of the Commission's rate filings are processed by the staff through such delegated authority.

The Commission itself directly handles contested applications or those involving complex or controversial issues. The staff reviews these filings, along with any protests or interventions, and then makes recommendations to the Commission. The Commission may then take one of three actions:

- Approve the application without further review;
- Reject all or part of the application; or
- Suspend the effectiveness of the rate application and order a hearing and investigation.

When the Commission's preliminary evaluation of an application indicates that the rate schedule or tariff may produce excessive revenues or that the filing may be unjust, unreasonable, unduly discriminatory or preferential, the Commission may suspend the effectiveness of a rate filing for up to five months. At the end of the suspension period, the new rate goes into effect, subject to refund. If the Commission orders an investigation, the case is typically assigned to an administrative law judge (ALJ) for a formal hearing and a settlement conference is scheduled. This gives the parties an opportunity to resolve the issues and to negotiate the terms of a settlement. If this is unsuccessful, or only partially successful, a hearing is scheduled.

Market-Based Rates

Ordinarily, the Commission evaluates rate filings made by jurisdictional public utilities on a cost-of-service basis. In some cases, however, the Commission will allow a utility to charge market-based rates for sales of electric energy, i.e., rates negotiated by the public util-

Industry witnesses give their views at a technical conference on Independent System Operators at FERC headquarters in January 1996.

specific transmission services, upon request, if it finds the request is in the public interest and will not unreasonably impair system reliability. This provision has given the Commission the ability to reduce the monopoly power that transmission system owners can exercise by favoring the transmission of their own electric generation supplies over the transmission of other generation supplies.

Now that transmission tariffs of general applicability have been filed by utilities subject to the Commission's jurisdiction, it is reasonable to expect that the Commission will receive fewer requests for transmission service under the provisions of EPAct. In fact, the Commission directed the parties in a number of requests filed prior to Order No. 888 to reevaluate their need to pursue transmission service under Section 211, given the availability of transmission services under open access tariffs.

Regional Transmission Groups (RTGs)

To capitalize on the significant technical resources of the electric industry, the Commission is encouraging RTGs to help implement transmission services and resolve transmission issues on a regional basis. The Commission believes that properly functioning RTGs will serve the public interest by enabling the market for electric power to operate in a more competitive and thus more efficient manner; by providing coordinated regional planning of the transmission system to assure that system capabilities meet system demands; by decreasing the delays that are inherent in the regulatory process, resulting in a more market-responsive industry; and by enhancing regional transmission planning by providing a mechanism for cooperation among state commissions and the utilities they regulate. The Commission has expressed a willingness to give deference to agreements reached voluntarily under an approved RTG.

RTGs have the potential to provide substantial benefits to the public and the Commission by relieving regulatory burdens and by providing a forum for consensual agreements within new regional institutions. They can channel the expertise of the electric industry toward resolving technical issues relating to transmission system operations and toward planning the transmission system to meet the needs of all parties.

In FY 1996, the Commission accepted an agreement by the Mid-Continent Area Power Pool on a final basis, thereby bringing the total number of RTGs to four.

Independent System Operators (ISOs)

Many transmission providers are considering going beyond separation of generation and transmission—functional unbundling—and turning transmission over to an ISO. Although this is not required, the Commission offers guidelines for the creation of ISOs that are subject to Commission approval. Among other things, the maintenance and governance of ISOs should be independent of any individual utility or market participant and ensure fair access to the transmission system.

Other Rulemakings, Policy Statements and Inquiries

During FY 1996, the Commission dealt with several other electric rulemaking initiatives besides the open access rules. These included the following:

- RM96–11—Issued a notice proposing a rule dealing with making transmission service available on a capacity reservation basis. Under the proposal, utilities and all other power market participants would reserve firm rights to transfer power be-

ity and its wholesale customer. The Commission has approved market-based rates when the seller can demonstrate that: (1) it and its affiliates are not dominant in the generation market; (2) it and its affiliates either lack market power in transmission or have mitigated any transmission market power by providing open access transmission service; (3) it and its affiliates have not erected any other barriers to entry; and (4) it will not engage in self-dealing or affiliate abuse. The Commission relies on these criteria to ensure that the market rate is not excessive.

In Order No. 888, the Commission codified its determination that there is no generation dominance in new generating capacity but that intervenors could, nonetheless, raise generation dominance issues related to new capacity. The Commission also decided that, for public utilities to obtain market-based rates for existing generation, it would continue to require applicants to show, on a case-by-case basis, that there is no generation dominance in existing capacity. The Commission further noted that it would continue to look at whether an applicant and its affiliates could erect other barriers to entry and whether there could be problems due to affiliate abuse or reciprocal dealing.

Power Marketers

Power marketers are public utilities under Part II of the FPA that buy and sell power but generally own neither generation nor transmission facilities. Some power marketers are affiliated with public utilities. In *Heartland Energy Services, Inc.,* Docket No. ER94–106–000 (August 9, 1994), the Commission explained the standards it would apply to affiliated power marketers, including a requirement that the affiliated public utility have a comparable transmission tariff on file. At the end of FY 1996, the Commission had approved 246 applications by power marketers to sell at market-based rates.

FERC Commissioners testify on July 11, 1996, before the Senate Committee on Energy and Natural Resources about the restructuring of the electric industry.

Mergers, Corporate Matters, and Notice of Inquiry

The Commission is responsible for acting on applications related to corporate transactions including mergers, property dispositions, acquisitions of securities by public utilities, and authorization to hold various interlocking positions. Increased corporate restructuring activities continued during FY 1996.

Utilities are preparing for increased competition in electric markets by reorganizing their corporate structure, merging with other utilities, and diversifying. To isolate unregulated activities from the regulated utility part of their companies, many utilities have reorganized themselves under a holding-company structure. This makes the regulated utility a wholly-owned subsidiary of the newly formed holding company. Such restructuring involves a disposition of utility assets under the FPA requiring Commission authorization.

Mergers are becoming more frequent as utilities strive to maintain or increase market share, stave off or remedy bankruptcy, or increase efficiency. Competitors who view such business combinations as imposing greater barriers to market entry or eroding their relative market share may vigorously oppose mergers and acquisitions. Merger applications are normally contested and extremely complex. Since the passage of EPAct, 16 applications involving the merger of public utilities have been filed with the Commission—ten in the last two years.

Utility restructuring is also encouraged or affected by state actions. For example, various states are setting up some form of retail

wheeling pilot programs and other states are involved in full-scale restructuring efforts. California is a prime example of the latter. The Commission has jurisdiction over various aspects of such restructuring. In FY '96, California's three major investor-owned utilities filed applications with the Commission dealing with the jurisdictional aspects of the California restructuring plan. These applications included a request for a declaratory order on the proposed transmission-distribution split affecting rate jurisdiction, authorization to establish an ISO to operate the transmission grid, and approval for market-based rates under a proposed power exchange.

Major corporate matters acted on by the Commission during the fiscal year primarily related to mergers and the California restructuring as follows:

- EC94–23—the Washington Water Power Company and Sierra Pacific Power Company proposed a merger. An order was issued setting for hearing the proposed merger and related transmission tariffs. The ALJ issued an initial decision in July 1996, ending the proceeding after both applicants filed notices of withdrawal of their joint applications.
- EC95–16—Primergy Merger. The Commission issued an order in this proceeding contemporaneously with the NOI on mergers (discussed below). The order set the proposed merger for hearing, including competitive issues and more particularly how transmission constraints may affect the analysis of market power.
- EC96–2—Public Service Company of Colorado and Southwestern Public Service Company Merger. An order was issued setting for hearing the proposed merger including the issue of the effect on competition with respect to allegations that access to the Western Systems Coordinating Council is limited due to existing constraints on Southwestern's system and deferring the market power issues relating to a new transmission line. The order also provides a new mechanism giving applicants options to deal with "effect on regulation" issues with respect to intra-corporate transactions within the holding company structure.
- EC96–10—Baltimore Gas & Electric Company and Potomac Electric Power Company Merger. The proposed merger was set for hearing primarily on the issue of the effect on competition. The order included guidance on the use of Department of Justice Guidelines relating to market power issues.
- EC96–19, *et al.*,—Pacific Gas & Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company applications involving the formation of the California ISO. The Commission held a technical conference in August and an additional staff technical conference was held in September 1996.

Additionally, during the fiscal year the Commission issued an NOI concerning the Commission's merger policy requesting comments on whether the Commission should revise our criteria and policies for evaluating mergers considering the ongoing fundamental changes in the electric industry. As explained more fully in Order No. 888, a variety of factors are creating considerable competition in the generation markets and structural changes in the industry. Because of these fundamental changes the Commission solicited comments on whether its criteria and policies for evaluating mergers need to be changed particularly as they relate to competition and market power issues. Parties filed more than 60 comments in the proceeding and the Commission was reevaluating its policies at the end of the fiscal year.

Exempt Wholesale Generators

EPAct added a new Section 32 to PUHCA. Section 32 established a class of electric power producers known as EWGs. The Commission is charged with determining EWG status. During FY 1996, the Commission received 98 applications for EWG status, approximately the same number received in FY 1995, and acted on 116 applications.

Qualifying Facilities

PURPA encourages cogeneration and small power production by requiring electric utilities to buy electric energy from, and sell electric energy to, facilities that meet certain criteria. These entities are called QFs. QFs are exempted in whole or in part from federal and state utility regulation.

Commission regulations permit small power producers and cogener-

ators that are seeking QF status either to file a notice that their facilities meet applicable standards for certification or to apply to the Commission for an order granting certification.

During FY 1996, the Commission received 257 filings and completed 250 filings for QF status. Of the latter, 124 were for small power production (representing approximately 1,600 MW of generating capacity) and 126 were for cogeneration (representing approximately 3,000 MW of generating capacity).

In the 1980–1996 period, QF filings were made for approximately 152,000 MW of existing or proposed capacity. However, this is not necessarily the operable capacity of qualifying facilities, nor is it necessarily a reliable projection of future capacity. Some projects reflected in these amounts may not be built.

Federal Power Marketing Rates

Congress assigned the responsibility for marketing power from various federal hydroelectric developments to the DOE under the DOE Organization Act. These projects were constructed primarily by the Army Corps of Engineers and the Bureau of Reclamation. The Secretary of Energy has delegated final authority to the Commission to approve or disapprove the rates charged by the following power marketing agencies:

- Alaska Power Administration;
- Southeastern Power Administration;
- Southwestern Power Administration;
- Western Area Power Administration.

In addition, Congress, in the Pacific Northwest Electric Power Planning and Conservation Act, assigned to the Commission direct responsibility for confirming and approving or disapproving the rates of the Bonneville Power Administration.

As of January 1, 1996, about 130 federally owned hydroelectric projects requiring Commission-approved rate schedules were in operation and one was under construction. The projects had an installed capacity of over 34,000 megawatts. The Commission is also responsible for approving rates for transmitting non-federal power over federal transmission lines.

During FY 1996, the Commission received 14 federal rate filings (representing rate increase amounts totalling $519 million) and completed 16 filings (representing rate increase amounts of $558 million).

Fuel Prices

The Commission has broad authority under Section 206 of the FPA to adjust utility rates that are unjust and unreasonable. The Commission monitors electric utility fuel procurement practices under Section 208 of PURPA to ensure the reasonableness of prices passed through to ratepayers under wholesale fuel adjustment clauses.

Besides tracking utility fuel costs, the Commission uses the PURPA review to monitor the types of charges passed through the wholesale fuel clause. For example, when fuel prices are falling, utilities generally have opportunities to reduce costs by buying out or buying down high-priced contracts and replacing them with less expensive purchases available in the market. To encourage utilities to take advantage of such cost-cutting measures, the Commission permits fuel clause treatment for buy-out and buy-down expenses. To ensure that ratepayers benefit from the transaction, the Commission requires that utilities provide details of the buy-out/buy-down arrangement, while also obtaining a waiver of the regulations before passing such costs through the fuel clause. Information gathered during the PURPA review is used to verify that the cost recovery complies with the Commission's regulations.

The average price of coal delivered to electric utilities during the 12 months ending September 30, 1996, fell 2.6 percent below the prices paid during the same period a year earlier. Delivered prices for natural gas increased by 28 percent, and oil prices rose by 13.8 percent. Oil consumption by utilities increased by almost 22 percent, while gas usage fell by almost 14 percent. Gas-fired generation declined by approximately 14 percent, while generation from coal, oil, hydroelectric stations and nuclear facilities all increased. The following table summarizes the data:

Fossil Fuel Prices Paid by Electric Plants in the United States (Cents Per Million Btu)[1]

	12 Mo. Ending Sept. 30, 1995	12 Mo. Ending Sept. 30, 1996	Percent Change
Coal[2]	132.6	129.1	–2.6
Oil[3]	263.9	300.4	+13.8
Gas[4]	194.6	249.3	+28.0

[1] Source: *Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants* (Steam-electric and Combined Cycle Plants 50 MW or greater).
[2] Coal: Bituminous, Subbituminous, Lignite and Anthracite.
[3] Heavy and Light Oils.
[4] Gas: Natural Gas and Small Quantities of Coke Oven, Refinery, and Blast Furnace Gas.

Contingency Plans for Electricity Shortages

Section 202(g) of the FPA, as amended by PURPA, directs the Commission to establish rules requiring public utilities to notify it and state regulators of possible electric power shortages and to submit contingency plans. The purpose is to assure that all customers served directly or indirectly are treated equally if shortages occur. On October 5, 1984, the Commission issued Order No. 401 requiring public utilities to file reports of anticipated shortages, along with amendments to previously filed contingency plans. Respondents are the Commission–regulated public utilities supplying full or partial firm power requirements to wholesale customers.

The Commission's regulations allow a public utility to include its contingency plans in its rate schedules. Such provisions ensure that the utility will treat firm power wholesale customers without undue discrimination or preference if shortages occur.

On April 24, 1996, the New England Power Pool (NEPOOL) submitted a report describing a potential capacity and energy shortage that NEPOOL anticipated in the six-state New England region during the summer of 1996 primarily due to the unavailability of Northeast Utilities' nuclear generation. Subsequently, individual public utility participants submitted reports to the Commission adopting the NEPOOL report and/or explaining differences applicable to their systems.

The Commission's responsibilities in these instances are limited. The statutory objective is fair treatment of wholesale customers. The primary responsibility for dealing with the shortages rests with the utilities (including reliability councils) and with the DOE. Because DOE's emergency planning officials have the statutory authority to deal with this issue, DOE took the lead in the federal government's response to the situation including meeting with the relevant parties in New England while keeping this Commission informed on the progress of their meetings.

DOE's report on outages in the West in the summer of 1996 suggests that inadequate maintenance of a transmission right of way and a failure to provide timely information around the grid were key factors. Efforts are under way at DOE and the North American Reliability Council (NERC) to address these issues. Open access was not a factor. ◆

Natural Gas

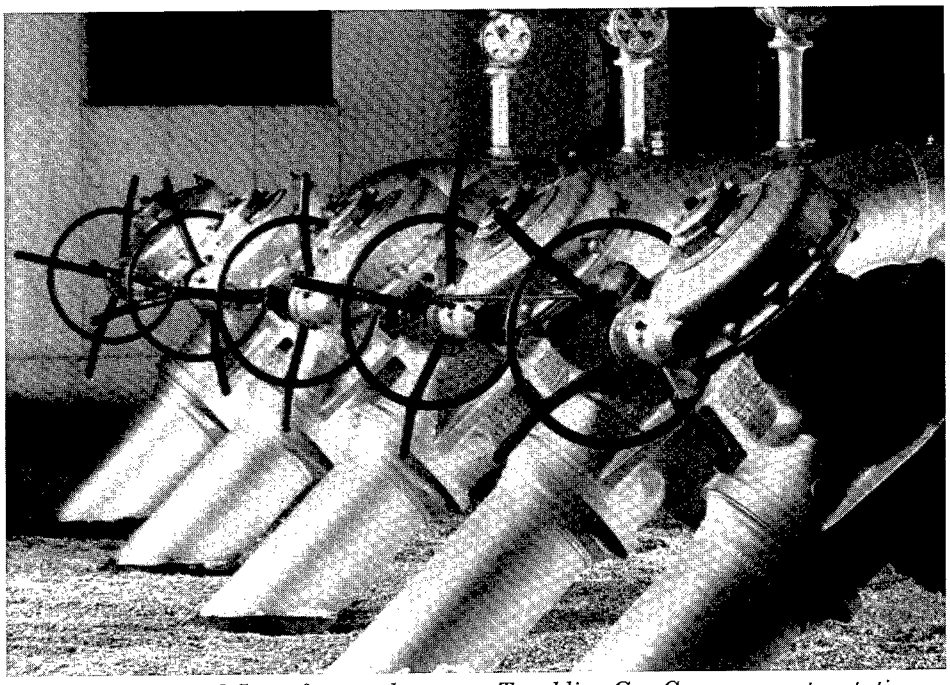
Overview

Natural gas is transported from production areas to markets via pipelines, consisting of a network more than one million miles long. The gas pipeline industry moves nearly a quarter of the Nation's energy consumption to the burner tip. A major component of this network is the more than 200,000 miles of large-diameter pipe that moves gas in interstate commerce over long distances to markets in 48 states. These transmission facilities represent an investment exceeding $50 billion. The oil pipeline network consists of over 200,000 miles of both large- and small-diameter pipeline and a total investment of over $20 billion.

In 1996, the natural gas industry continued to fine tune its structure, operations, and business strategies to provide flexible, market-oriented services and pricing. The Commission supported the industry's efforts and continued to develop and exercise new ways to nurture competition through the use of market-driven principles and a regulatory framework that allows and promotes competition where appropriate. The Commission's promotion of competition is balanced against the potential abuses that can occur in the pipeline transportation sector of the industry, where the potential for the exercise of market power still exists.

Policy Initiatives

The Commission's key objectives in regulating the industry are: to provide for more extensive and flexible rate and service options; to enable parties to respond quickly to fast-changing market conditions; to maintain service reliability and rate certainty; and to reduce the burden on regulated companies. To this end, in FY 1996, the Commission pursued initiatives in the following areas.



Valve wheels control flow of natural gas at a Trunkline Gas Company meter station, where the gas is measured prior to delivery.

Market-based and Negotiated Rates

On January 31, 1996, the Commission issued a policy statement on alternative ratemaking methods and negotiated transportation services (Docket Nos. RM95–6–000 and RM96–7–000). The policy statement develops criteria to be used in determining whether to permit market-based rates for pipeline transportation services, establishes guidelines for negotiation of rates, provides standards for approving incentive rates, and solicits comments on proposals to negotiate customized terms and conditions of service.

Under the policy statement, a pipeline seeking market-based rates must show that its shippers have sufficient alternative transportation options to prevent the pipeline from demanding rates above competitive levels. The policy statement outlines specific analytical methods and concepts to assist the industry in presenting the Commission with the necessary market power analysis. The policy statement also provides additional flexibility in negotiating customer-specific rates and rate structures to meet the needs of the evolving marketplace. Pipelines are now permitted to offer customized rates to individual customers as long as shippers have recourse to traditional cost-of-service rates. The recourse rate option serves as a check on pipeline market power and enables pipelines to provide market-responsive rates to shippers who are able to protect themselves in the competitive market while providing traditional regulatory protection to those who cannot. In adopting the tariff filings to implement negotiated rates, the Commission has addressed the recourse rate shippers' concerns about cost shifting and prevention of undue discrimination. It blocked pipelines

from recovering discounts given shippers through negotiated rates from customers paying the recourse rate. The Commission also required the filing of either specific information contained in the negotiated rate contracts or the contracts themselves.

The Commission declined to permit further flexibility to negotiate customized terms and conditions pending further comment on the impact of the proposal. The Commission recognized the need for flexibility in meeting the needs of the marketplace yet expressed concern about the potential for discrimination in providing customized services and the potential degradation of recourse services if operating flexibility is committed to the negotiated services.

Capacity Release (Secondary Market Transactions)

The Commission instituted the capacity release mechanism to create a uniform, national program for the reallocation of interstate pipeline capacity to complement the unbundled, open access environment created by Order No. 636. The capacity release mechanism enables firm shippers to make more efficient and economical use of the capacity for which they pay. At the same time, it provides shippers that previously had been unable to acquire firm pipeline capacity (i.e., non-local distribution company shippers) with access to firm capacity. Since the program started in November 1993, the secondary market has continued to develop. Thirty major pipelines reported that release transportation amounts to 19 percent of firm daily capacity.

The United States Court of Appeals for the District of Columbia in *United Distribution Co. v. FERC* affirmed the Commission's authority to establish a uniform, national program governing the reallocation of interstate capacity pursuant to the guidelines and rules established in Order No. 636.

On July 31, 1996, in Docket No. RM96–14–000, the Commission issued a Notice of Proposed Rulemaking (NOPR) to improve the capacity release mechanism. The NOPR proposes to (1) improve the release mechanism by requiring comparability between capacity release and pipeline interruptible and short-term firm transportation; (2) remove the requirement to post releases for bidding; and (3) remove the price cap for released capacity and interruptible and short-term firm transportation when the shipper or pipeline has demonstrated that it does not exercise market power.

Also on July 31, 1996, the Commission invited participation in a pilot program to lift the price cap in selected geographic markets on an experimental basis. The pilot program would test the criteria for evaluating market power, based on actual experience, assisting the Commission's decision on the final rule.

Standards for Business Practices

The Commission issued a NOPR in Docket No. RM96–1–000 proposing to adopt business practice standards for interstate natural gas pipelines approved by the Gas Industry Standards Board (GISB) on April 24, 1996. GISB is a consensus standards organization open to all members of the gas industry. The Commission subsequently issued a final rule on July 17, 1996, adopting GISB's business practice standards for nominations, flowing gas, invoices, and capacity release, but deferred issuing an order on the communication protocols until GISB finalizes its standards. The Commission incorporated the standards into its regulations by reference. In the final rule, the Commission required pipelines to implement the standards in their tariffs between April 1 and June 1, 1997. The Commission found that GISB's standards will significantly reduce disparities and inconsistencies among pipeline business practices and communication modalities and will facilitate a unified, integrated natural gas transportation network.

In addition, in the NOPR and the final rule, the Commission directed GISB to address additional business issues by September 30, 1996. In the NOPR, the Commission directed GISB to submit detailed proposals for standards in additional areas such as: expansion of Internet protocols to include all electronic information provided by the pipeline, title transfer tracking, allocations and rankings of gas packages, treatment of compressor fuel, operational balancing agreements, routing models, imbalance resolution, operational flow orders, multi-tiered allocations and confirmations, and additional pooling standards. In addition, in the final rule, the Commission indicated that GISB and industry participants should also consider: whether the Commission should mandate that pipelines provide additional information in electronic format (other than that required by the final rule or other Commission regulations); whether pipelines should be required to replace their EBBs with a standardized, interactive format (such as in-

teractive, Internet World-Wide-Web displays); whether pipelines can provide for preferential connections either to their own EBBs or third-party boards; whether information should be made available, on a real-time basis, about capacity on the mainline and at individual receipt and delivery points.

On September 30, 1996, GISB filed 43 additional standards with the Commission, finalizing its communication standards and addressing the issues raised by the Commission in the NOPR and the final rule. The additional standards did not address title transfer tracking but GISB established a pilot program to test various means of providing this service, including the use of third parties.

Filing and Reporting Requirements Revisions

In FY 1996, the Commission continued its initiative to revise and update its filing and reporting requirements. Phase II of this effort involved revising the instructions for filing reports, forms, and rate cases electronically. The staff of the Commission conducted working group meetings with participants from all facets of the natural gas industry. These meetings resulted in mutually agreeable electronic filing specifications for the forms and filings.

Electronic filing instructions were established for the first time for the Index of Customers and Discount Rate Reports which significantly improve their usefulness and availability to the Commission and the public. The electronic filing instructions for rate cases were radically altered to standardize filing requirements. This reduces the burden of information dissemination for the pipelines and makes the data more useful to the Commission and interested parties. A new electronic data format was adopted for the FERC Form Nos. 2, 2–A, and 11 for compatibility with commercially available personal computer software.

The Commission has established new internal procedures and the technological infrastructure to receive, process, and disseminate the information included in the electronic filings. The forms data are disseminated to staff using a Windows-based report generator developed by staff. The Commission also is distributing this data through its Intranet project.

Outer Continental Shelf

On February 28, 1996, the Commission issued a Statement of Policy addressing the jurisdiction of gas pipeline facilities on the Outer Continental Shelf (OCS). The Commission elected to review issues concerning the status, scope, and effect of its regulation of gathering and transportation on the OCS to assure that regulatory policies do not impede or distort development.

The Commission decided to continue to determine the primary function of offshore facilities on a case-by-case basis and retain the primary function test currently used. However, in applying the primary function test to facilities offshore, the Commission determined to apply a presumption that facilities located in deep water, or depths of 200 meters or more, are gathering up to the point or points of potential interconnection with the interstate pipeline grid. The Commission made this determination in recognition of the technology and topography specific to operations in deep water.

Gas Pipeline Rates

Under the NGA, the Commission regulates approximately 150 pipelines that sell and transport gas in interstate commerce. The NGA requires the Commission to ensure that tariff rates and charges are just and reasonable and not unduly discriminatory. These requirements protect consumers from excessive prices and abuses of market power and allow pipelines to be compensated for prudent and necessary service costs—including a fair return on investment.

FY 1996 rate-related casework of 1,222 filings deviated little from the FY 1995 total of 1,228 filings. However, while the number of cases is holding steady, the complexity and parties involved in individual proceedings are increasing. Included in the FY 1996 totals are 445 formal rate change and tariff filings. Of these, 15 were general rate changes, 64 were limited Section 4 applications and 366 involved changes in pipeline tariff and operating terms and conditions, including alternative rate proposals and capacity release pilot program applications.

Noteworthy filings processed during FY 1996 included the following:

K N Interstate Gas Transmission Company: In Docket No. RP95–81–000, the Commission permitted KNI to use market-based rates on its Buffalo Wallow system, the first use of market-based rates for firm gas pipeline transmission. KNI's filed market power study, as augmented by responses to data requests, showed that a sufficient number of good alternatives to KNI's services exist and that KNI would be unable to withhold service to obtain a substantial price increase. As a result, the Commission

determined that KNI lacks significant market power and warrants a more light-handed approach to price regulation on the Buffalo Wallow system. For those customers solely connected to the Buffalo Wallow system, and therefore without alternatives, the Commission required a cost-capped rate to protect against an abuse of market power.

NorAm Gas Transmission Company: In Docket No. RP96–200–000, the Commission accepted the first filing to implement negotiated rates for transportation service filed in response to the Commission's policy statement regarding alternatives to traditional ratemaking principles. NorAm proposed to charge specific rates it had negotiated with certain customers and use its tariff rates as a recourse for those who do not want to negotiate rates for transportation service. Under this program, NorAm is able to offer rates tailored to a shipper's needs, with the availability of the pipeline's recourse rate preventing the pipeline's exercise of market power.

Pacific Gas Transmission Company: In Docket No. RP94–149–000, et al., the Commission approved a contested Offer of Settlement submitted by Pacific Gas Transmission that resolved, among other things, the controversial issue of whether or not to apply rolled-in rates to service on expansion facilities. The settlement established two rate periods. During Period I, the rates for firm service are designed on an incremental basis for services using certain expansion facilities constructed over the years. Period II rates provide for rolled-in rates for service using any Pacific Gas Transmission facilities. For customers adversely affected by the switch from incremental to rolled-in rates, the settlement provides mitigation measures to lessen the impact of the change. The settlement also contains a moratorium under which Pacific Gas Transmission cannot change its rates before January 1, 1998.

Texas Eastern Transmission Corporation: In Docket No. CP95–218–000, the Commission granted Texas Eastern's petition for a declaratory order requesting the Commission to confirm that Order No. 636 does not create a per-se rule prohibiting interstate pipelines that have implemented Order No. 636 from entering into contracts for transportation or storage capacity on other interstate pipelines. The Commission stated that its prior concern was that existing capacity held by pipelines could restrict the ability of shippers to access supplies and markets that was the basis for its action in Order No. 636. Now that the transition to unbundled sales and transportation is complete, the Commission stated it would decide whether to allow pipelines to acquire upstream or downstream capacity on a case-by-case basis. The Commission found that to continue the prohibition may limit flexibility that all industry segments need to meet changing market demands and cited the potential benefits that could be gained by lifting the prohibition.

Additionally, in two litigated rate proceedings, the Commission issued opinions reaffirming the use of firm-to-the-wellhead rates and denying claims that this type of production area rate design constitutes an improper tying arrangement.

In general, the Commission continued to use the historical cost-of-service approach in its review of pipeline rates. In this regard, rate change filings continue to be based on increases in operating costs, the cost of new facilities, and changes in the natural gas industry. These filings involve not only cost issues but often also contain pipeline access and rate design issues that have evolved from the increased competition now prevalent throughout the industry. The issues include:

- Cost allocation;
- Rates of return and depreciation;
- Transportation zones and mileage-based rates;
- Market centers;
- Treatment of storage costs;
- Rates for transportation in the production area;
- Pipeline tariff terms and conditions;
- Impact of capacity release on interruptible throughput projections;
- Eligibility of costs for recovery under Order No. 636;
- Pipeline capacity usage and its effect on rates;
- Allocation of costs associated with turned-back capacity; and
- Discrimination in providing transportation services.

Accounting and Financial Reporting

The Commission needs continuous, reliable financial information based on sound accounting principles uniformly applied to all jurisdictional companies. This information is required in monitoring economic activity within the indus-

Increased use of natural gas, facilitated by numerous FERC decisions, helps the environment. Here, a bus powered by natural gas helps keep air clean in the New York area.

try and evaluating whether rates charged are just and reasonable.

These needs are met by development of the Uniform System of Accounts prescribed for natural gas companies and oil pipelines. Periodic financial reporting is undertaken by jurisdictional gas companies through the Commission's Form Nos. 2 and 2–A. Oil pipelines report data to the Commission using the Form No. 6.

In addition, audits are conducted by the Office of the Chief Accountant. These audits enable the Commission to insure that required financial information is reported according to Commission regulations. During the audits, special emphasis is placed on costs that are automatically passed on to consumers. Companies that have improperly charged customers are ordered to refund excess collections with interest.

Pipeline Certificates

Generally, pipelines must apply to the Commission for either case-by-case certificate or blanket certificate authorization to construct and operate certain interstate gas facilities and to transport or sell gas for resale in interstate commerce.

The Commission's pipeline certificate program evaluates four types of applications:

- Construction and operation of facilities;
- Authority for gas transportation, sale, storage, or exchange services;
- Extension or abandonment of services; and
- Siting and construction of facilities for the import or export of natural gas and liquefied natural gas (LNG).

The following factors are considered in evaluating applications:

- Identification and assessment of the public interest aspects of terms and provisions of the proposed service;
- Facility design and operational aspects;
- Project financing;
- Environmental impacts of proposed projects;
- Initial rates for service;
- Cost shifting to existing ratepayers; and
- Operational reliability of LNG facilities.

Reviewing the many filings for capacity expansion was a major Commission priority in FY 1996. The Commission acts on these proposals as quickly as possible to allow applicants to begin construction if the project is determined to be in the public interest.

Pipeline Construction

In FY 1996, the Commission approved 11 requests for authorization to construct major pipeline facilities, including two offshore and one LNG facility. The Commission also issued preliminary determinations on seven projects with a total estimated cost of $1.48 billion. The major pipeline projects are described below, followed by separate sections on the offshore and LNG projects.

ANR Pipeline Company: On December 19, 1995, the Commission authorized ANR to construct and operate pipeline facilities to transport natural gas from its Muttonville Lateral to the U.S./Canada border in St. Clair County, Michigan, to interconnect with a Canadian pipeline. The ANR link facility

will have a peak-day capacity of 150,000 Mcf/d and an estimated cost of $15.3 million. Pursuant to its Pricing Policy Statement in Docket No. PL94–4–000, the Commission determined that ANR could roll in the costs of the proposed facilities in its next rate case since it had demonstrated operational and financial benefits and shown that there would be no adverse rate impact.

Steuben Gas Storage Company: On January 23, 1996, the Commission authorized Steuben to construct and operate the Thomas Corners storage field and related facilities in Steuben County, New York. The facility will have a working gas storage capacity of 5.3 Bcf and a design-day deliverability of 70,000 Mcf/d. The Commission approved Steuben's request to charge market-based rates for its storage services but advised Steuben that its market power and its market-based rates would be subject to reexamination if the facility became connected to certain interstate pipeline facilities. The Commission imposed certain reporting requirements on Steuben so it can determine if a reexamination of its market power is necessary.

EcoElectrica, L.P.: On May 15, 1996, the Commission granted EcoElectrica an NGA Section 3 authorization for the siting, construction, and operation of an LNG facility at Guayanilla Bay, Penuelas, Puerto Rico. The project cost is estimated at $600 million. (For a more detailed description, see Liquefied Natural Gas section.)

Paiute Pipeline Company: On August 1, 1996, the Commission authorized Paiute to construct and operate pipeline loops and related facilities (the Lake Tahoe Expansion) to expand delivery capacity on its system to enable new service to the Truckee, California, area and to increase delivery point flexibility in the Incline Village, Nevada, area. The increase in system delivery capacity of 12,788 Mcf/d is estimated to cost $10.5 million. The Commission required Paiute to file evidence that sufficient long-term upstream capacity had been secured to support its proposal before construction could commence and imposed a number of environmental conditions in recognition of the concerns of a number of state and federal environmental agencies.

Ouachita River Gas Storage, L.L.C.: On August 1, 1996, the Commission authorized Ouachita to develop a new underground storage and hub facility in Union and Lincoln Parishes, Louisiana, consisting of 24 miles of 24-inch pipeline, nine miles of 16- and 24-inch header pipeline, and 18,760 horsepower of compression. The hub facilities will interconnect with eight interstate pipelines and one intrastate pipeline. The storage facility will provide 27 Bcf of working gas capacity and 13.5 Bcf of cushion gas, resulting in an estimated peak capacity of 750 MMcf/d. Since Ouachita was authorized to charge market-based rates for its storage service, no cost data was required.

Great Lakes Gas Transmission Company, L.P.: On August 2, 1996, the Commission granted NGA Section 3 authority and amended the Presidential Permit of Great Lakes to authorize the construction of a second crossing of the St. Clair River at the U.S./Canada boundary between St. Clair, Michigan, and Ontario, Canada. The proposed 36-inch pipeline loop will augment twin 24-inch pipelines crossing the river that are capable of handling only about 45 percent of the present dual 36-inch pipelines on either side of the river. The $3.9 million project will provide greater system security and reliability of service, facilitate incremental deliveries to Canada, and avoid a loss of 350,000 Mcf/d of downstream deliverability if one of the existing 24-inch lines goes out of service.

Rocky Mountain Facilities: On September 11, 1996, the Commission authorized three expansion projects that together will add 365,500 Mcf/d of new capacity that will serve the Rocky Mountain and Mid-Continent market areas. The Commission's actions recognized the need for additional take-away capacity from the Rocky Mountain region due to the availability of an abundant supply of relatively inexpensive regional natural gas. The Rocky Mountain cases include:

Colorado Interstate Gas Company: CIG was authorized to construct 10,556 horsepower of compression to expand its system by 68,000 Mcf/d at a cost of $10.8 million.

Trailblazer Pipeline Company: Trailblazer was authorized to construct 5,200 horsepower of compression to increase its system capacity by 104,500 Mcf/d at a cost of $11.7 million.

Wyoming Interstate Gas Company: WIC was authorized to construct 28,212 horsepower of compression to expand its system by 193,000 Mcf/d at a cost of $39 million.

Preliminary Determinations on Construction Certificates

To expedite action on proposed major construction applications, the Commission issues preliminary determinations (PDs). The purpose is to allow the Commission to rule on the merits of a construction proposal's non-environmental issues. Once the environmental analysis is completed, the Commission issues a final certificate authorization of the project if appropriate. This approach gives applicants an early indication of the form that ultimate Commission authorization might take. The Commission issued the following PDs in FY 1996, with a total estimated cost of $1.48 billion:

Transcontinental Gas Pipe Line Corporation: On April 4, 1996, the Commission issued a PD for Transco's Sunbelt Expansion Project, which includes the construction of 45,000 horsepower of new compression at three stations, the uprating of four existing stations by 8,100 horsepower, and the construction of 14.92 miles of 42-inch loop at an estimated cost of $85 million. The facilities would increase the capacity in Transco's Southeast mainline by 145,666 Mcf/d.

Pine Needle LNG Company, LLC: On April 30, 1996, the Commission issued a PD addressing all non-environmental issues and conditionally authorizing Pine Needle to construct and operate a four-Bcf capacity LNG facility in Guilford County, North Carolina (see description under Liquefied Natural Gas).

Maritimes & Northeast Pipeline, L.L.C.: On July 31, 1996, the Commission issued a PD to Maritimes for construction and operation of pipeline facilities from Dracut, Massachusetts, to Wells, Maine, having a capacity of 60,000 MMBtu/d and an estimated cost of $82 million. This would be Phase I or the southern portion of a larger project to bring Sable Island gas to Canada and the U.S. The 64-mile pipeline would transport gas northward until November of 1999 when Phase II of the Sable Project would come into service. The Commission accepted Maritimes' 365-day firm transportation cost-based rate as a recourse rate under its Alternate Rate Policy Statement and its winter service rates as negotiated rates. Maritimes would be issued a blanket construction certificate under Part 157 and a blanket transportation certificate under Part 284 of the Commission's regulations in the final order. An environmental impact statement was being prepared.

Portland Natural Gas Transmission System: On July 31, 1996, the Commission issued a PD to PNGTS for construction and operation of pipeline facilities from the U.S./Canada border near North Troy, Vermont, to Haverhill, Massachusetts, NGA Section 3 authorization, and a Presidential Permit to construct and operate border facilities. The proposed $271 million pipeline would be 242 miles long and would have a capacity of 178,000 Mcf/d; it would commence service on November 1, 1998. PNGTS was required to file information regarding service to shippers who requested service in PNGTS's open season. PNGTS would be issued a blanket construction certificate under Part 157 and a blanket transportation certificate under Part 284 of the Commission's regulations in a final order. An environmental impact statement was being prepared.

Southern Natural Gas Company: On July 31, 1996, the Commission issued a PD to Southern for its North Alabama Expansion Project, which includes the construction of 118 miles of 12-inch or 16-inch pipeline and 6,300 horsepower of compression at a cost of $52.8 million. The project would result in an addition of 76,350 Mcf/d of capacity to Southern's system.

Northern Border Pipeline Company: On August 1, 1996, the Commission issued Northern Border a PD for construction and operation of a substantial expansion of its mainline system from the Canadian border to Harper, Iowa, and to extend its existing terminus by 243 miles to the Chicago area. Mainline capacity would increase by up to 961,000 Mcf/d, and the extension would have a capacity of 648,000 Mcf/d. The Commission approved Northern Border's proposal to roll in the facilities' cost of $797 million. Although this would exceed the five-percent guideline in the Commission's Pricing Policy Statement, the applicant demonstrated operational benefits that would enhance the reliability, deliverability, and flexibility of its entire system to the benefit of all shippers. The Commission directed Northern Border to show cause why it should not be required, prospectively, to record book depreciation expense using regulatory asset/liability accounts. An EIS was being prepared for Northern Border's project and a related project proposed by Natural Gas Pipeline Company of America.

Natural Gas Pipeline Company of America: On August 1, 1996, the Commission issued Natural a PD for construction and operation of an $85.4-million expansion of its Amarillo mainline from Harper, Iowa, into the Chicago area. The proposed expansion would add 345,000 Mcf/d of capacity to Natural's system. A capacity release agreement with an affiliated shipper would provide an additional 180,000 Mcf/d of capacity to satisfy initial open season requests for a total of 525,000 Mcf/d of new service. The Commission required Natural to hold another open season for release and turnback of capacity with the same terms and conditions offered to both affiliated and non-affiliated shippers in contrast to its first open season where it offered different terms to its affiliated shipper who released the large block of capacity. The Commission ordered Natural to roll in its facility costs in its next general rate proceeding even though Natural did not request approval of rate treatment of facility costs in its application.

Offshore Filings

Following the issuance of the Statement of Policy in Docket No. RM96–5–000, where the Commission refined its policy regarding the application of its jurisdiction over natural gas pipeline facilities and service on the OCS, the Commission issued two orders addressing the jurisdictional status of proposed OCS facilities, with a total estimated cost of $183 million. In addition, there were six pending cases involving proposed facilities on the OCS that were subsequently filed. The pending cases have a total estimated cost of over $783 million.

The orders issued on the two offshore filings are:

Shell Gas Pipeline Company: On February 28, 1996, the Commission issued an order finding that a portion of Shell's Mississippi Canyon Gathering System (MCGS), located in the OCS, offshore Louisiana, performed a nonjurisdictional gathering function and a portion of the MCGS performed a jurisdictional transmission function. Shell proposed to configure the MCGS as an inverted "Y" with three segments. The Commission determined the two leg segments (consisting of 45 miles of 14-inch pipe and 68 miles of 12-inch pipe) and the WD 143 platform facilities would be nonjurisdictional gathering facilities and the 45 miles of 30-inch pipe extending from the WD 143 platform on shore would be a jurisdictional transmission facility. The jurisdictional line is designed to transport 600 MMcf of natural gas per day and is estimated to cost $75 million.

Shell Gas Pipeline Company: On March 13, 1996, the Commission issued an order finding that a portion of Shell's Garden Banks Gathering System (GBGS), located in the OCS, offshore Louisiana, performed a nonjurisdictional gathering function and a portion of the GBGS performed a jurisdictional transmission function. Shell proposes to configure the GBGS as a spine and lateral network. The two lateral lines consist of 35 miles of 12-inch pipe and ten miles of 12-inch pipe that will extend from deep water OCS prospects to an interconnect at the Enchilada Platform. The spine consists of 50 miles of 30-inch pipe that will extend from the Enchilada Platform to a platform to be constructed by Shell. The Commission determined the two lateral segments and the Enchilada Platform facilities to be nonjurisdictional gathering facilities and the spine facilities a jurisdictional transmission facility. The jurisdictional facilities will provide the capacity to transport between 600 MMcf and 1 Bcf of natural gas per day. Shell estimates the cost of the jurisdictional line at $108 million.

Liquefied Natural Gas Filings

EcoElectrica, L.P.: On May 15, 1996, the Commission granted EcoElectrica an NGA Section 3 authorization for the siting, construction, and operation of an LNG facility at Guayanilla Bay, Penuelas, Puerto Rico. The $600 million project will import and store up to 2,000,000 barrels of LNG for use in a 461-megawatt cogeneration facility that will sell electricity to the Puerto Rico Electric Power Authority and use steam to generate additional electricity to power a proposed water desalination plant. The Commission conditioned the authorization on EcoElectrica's compliance with a number of safety and environmental mitigation measures.

Granite State Gas Transmission: The Granite State LNG project was one of two major LNG proposals pending at the end of the year (the other being Pine Needle, see description that follows). Granite State proposes to build a $51.5 million, two-Bcf storage tank in Wells, Maine, to receive, store, and vaporize LNG and to deliver gas into Granite State's mainline and eventually into the yet-to-be-built Portland Natural Gas Transmission System.

Pine Needle LNG Company, LLC: On April 30, 1996, the Commission issued a PD addressing all non-en-

vironmental issues and conditionally authorizing Pine Needle to construct and operate a four-Bcf capacity LNG facility in Guilford County, North Carolina. The proposed LNG facility would enable Pine Needle to provide new firm LNG peaking service for up to 400 MMcf per day to 14 shippers. Pine Needle would also be granted blanket certificates under Parts 157 and 284 of the Commission's regulations. The facilities are estimated to cost $107 million.

Meter station near the Idaho-British Columbia border. Natural gas imports from Canada have increased in recent years.

Environmental Compliance

In FY 1996, the Commission continued to expand its environmental post-construction compliance review of blanket certificate and NGPA Section 311 new construction and Section 2.55 facilities replacements.

The Commission staff completed 234 on-site environmental inspections to ensure compliance with certificate environmental conditions.

The Commission conducted four regional training courses on environmental compliance. The courses covered compliance with the Commission's program of wetland and waterbody protection and erosion control and revegetation as well as cultural resources compliance under the National Historic Preservation Act. This highly successful outreach program, started in 1992, continues to draw significant interest from the industry and its employees, federal and state agencies, environmentalists, consultants, and the public.

The Commission began an additional training course last year. It consisted of three additional regional training sessions concerning preparation of environmental reports.

Twenty-three training courses have been held in the past and more are planned. The courses provide a better understanding of:

- Compliance with environmental certificate conditions;
- The National Environmental Policy Act (NEPA);
- The National Historic Preservation Act compliance; and,
- Other environmental laws and regulations.

The Commission has continued its initiatives to monitor environmental compliance and to order additional measures if they are necessary. The Commission requires companies to:

- Certify that the personnel and contractors have been trained in accordance with the approved implementation plan prior to construction;
- Have environmental inspectors on all major construction projects. At least one inspector is required per construction spread. The environmental inspector has the authority to order compliance with mitigation measures; and
- File weekly or bi-weekly reports, depending on the size of the project, describing the status of construction. Immediate notification to the Commission of any environmental violations cited by another agency is also required.

Further, the Commission has delegated to the Director of the Office of Pipeline Regulation (OPR) the authority to take appropriate steps to ensure the protection of all environmental resources during construction of projects. This includes the authority to stop work on a project. Also, a requirement that the company receive approval by the Director of OPR before commencing service has been added for larger projects. Finally, where companies

have failed to comply with environmental conditions, the Commission has negotiated settlements denying the recovery of costs associated with the shortcomings.

Oil Pipelines

The Commission has statutory authority over the regulation of approximately 140 interstate common carrier oil pipelines which transport crude oil or refined petroleum products. The combined revenues of the regulated companies exceed $6.2 billion.

The primary goals of the Commission's regulatory program on oil pipelines are to ensure that:

- Shippers and consumers do not pay unjust and unreasonable transportation rates;
- Transportation services are not unduly discriminatory; and,
- Oil pipelines have appropriate levels of incentives to continue to make prudent investments in their systems.

The Commission continued to implement its newly established, streamlined and modernized rules and regulations promulgated in Order No. 561. In that order, the Commission established a generally applicable indexing methodology which allows for greater efficiency and ease in filing rate changes. In addition to establishing the indexing methodology and revising the rules and regulations, the Commission, in Order Nos. 571 and 572, delineated three alternatives to that methodology and the conditions under which they may be implemented. The three alternative methodologies are: traditional cost-of-service; market-based rates; and, negotiated or settlement rates.

The three orders all became effective concurrently on January 1, 1995, in accordance with EPAct. Numerous pipelines have taken advantage of the new relaxed regulations when filing rate changes under the simplified indexing program and waiver requests for short-notice filings. During FY 1996:

- Sixty-three oil pipeline companies made 80 rate change filings under the new streamlined indexing program;
- Of the 445 oil pipeline tariff filings made during the fiscal year, 173 (almost 40 percent) were filed taking advantage of the relaxed regulations making waiver requests for short-notice filings simpler on the filing company; and
- Staff members continued to be contacted frequently by both the oil pipeline industry and shippers for information on the new programs and regulations.

In addition to processing 444 general oil pipeline tariff filings, staff was responsible for the continued implementation of the programs initiated by Orders Nos. 561, 571, and 572.

Staff processed four requests for modified or new depreciation rates relating to oil pipeline properties.

Finally, the Commission approved seven full or partial settlements of oil rate cases that had been set for hearing, thereby completing 72 outstanding dockets.

The Commission also dealt with the following three novel pipeline filings:

Colonial Pipeline Company made the first filing to request authority to file rates under the new market-based regulations promulgated in Order No. 572. After reviewing the information submitted and the comments filed in protest, the matter was set for hearing for a full examination of the issues raised.

Longhorn Partners Pipeline filed for and was granted a declaratory order permitting it to include the purchase price of an existing crude oil pipeline in a filing under the cost-of-service rate justification approach. The proposed pipeline will include existing, along with newly constructed, facilities, to serve markets in New Mexico and Arizona with petroleum products.

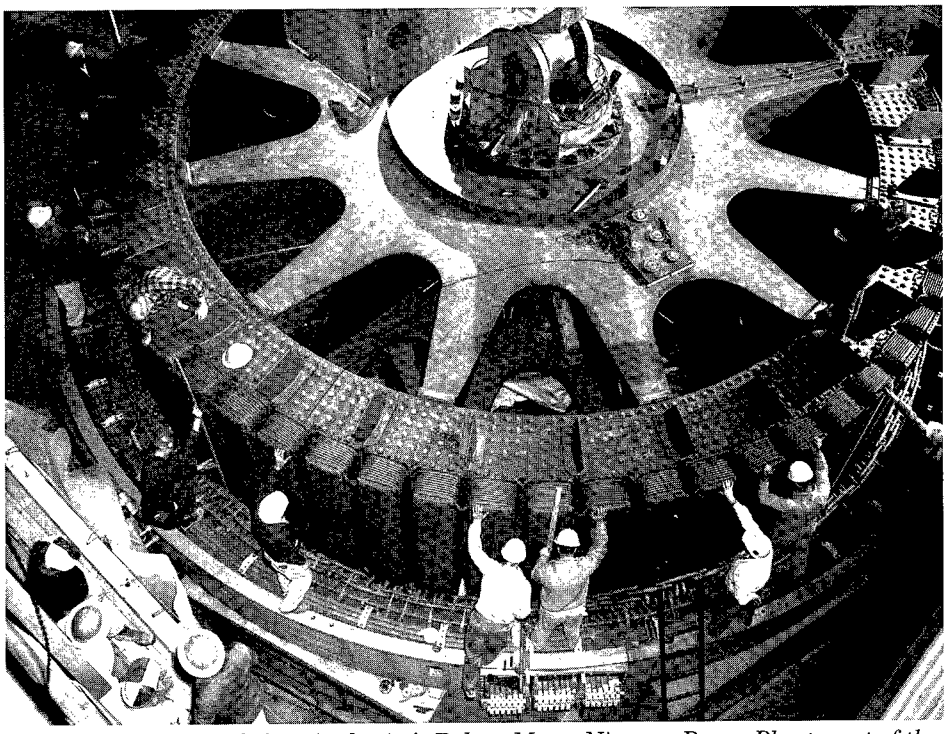
Express Pipeline Partnership was granted a declaratory order permitting a novel rate approach. Typically, oil pipelines file for rate approval after installing their facilities. But in this case, prior to the construction of its pipeline facilities from Canada to Wyoming and for further movement to Illinois, Express requested the Commission review its proposed rate structure which includes not only rates available to all shippers but also term rates (for five-, ten- and 15-year commitments) established through a one-time open season sign up process. ◆

Hydroelectric Power

Overview

Hydroelectric power offers an abundant, clean source of electric energy. In FY 1996, hydroelectric plants supplied approximately ten percent of America's electrical energy. The Commission regulates about half of this amount.

Conventional hydroelectric projects generated an estimated 310.3 billion kilowatt-hours of electricity during the year, saving some 531 million barrels of oil, or 121 million tons of coal. In addition to providing significant generating capacity, hydroelectric projects authorized by the Commission often provide fish and wildlife habitats, recreational opportunities, flood control, and water supply.



Generator at New York Port Authority's Robert Moses Niagara Power Plant, part of the Niagara Power Project, one of the largest producers of electricity in the United States.

Reorganization

In September 1996, the Office of Hydropower Licensing (OHL) was restructured to streamline operations in light of shifting workload. Post-licensing workload is increasing, while the number of licensing and relicensing applications is declining. Consolidating licensing and compliance activities into one division will result in more efficient use of personnel.

Licensing and Relicensing

Requirements

The FPA and PURPA provide alternatives in developing a hydropower project. A developer may, as a first step, seek a preliminary permit. A permit gives the developer time to perform feasibility studies while maintaining priority to apply later for a license or an exemption from licensing. Since a preliminary permit is not a prerequisite for a license, a developer may also file directly for a license or an exemption. The Commission's regulations detail the filing procedures.

Exemptions may be obtained for projects if:

- Generating capacity is being installed or increased;
- The applicant has all of the real property interests necessary to develop and operate the project; and
- Either the project will be located at a pre-1977 dam and have 5 MW or less installed capacity or the project will use the hydropower potential of a manmade conduit used primarily for purposes other than hydropower and the installed capacity is 15 MW or less (40 MW or less for states and municipalities).

In FY 1996, the Commission issued six original licenses, 21 new licenses (relicenses), and two exemptions from licensing for hydropower projects.

Standards

The FPA, amended by ECPA, requires the Commission to give equal consideration to developmental and non-developmental uses of the waterways on which a project is to be located. The Commission weighs the economic and environmental tradeoffs of the various uses of waterways when determining whether, and under what conditions, to issue a hydropower license.

In addition to incorporating mandatory terms and conditions submitted by federal and state

agencies designated by law, the Commission independently evaluates the environmental impacts that would result from licensing proposed, and relicensing existing, hydroelectric projects. In doing so, staff considers the recommendations of:

- Federal and state natural resource agencies;
- Native Americans affected by project construction or operation; and
- Other concerned individuals and entities.

The staff also evaluates each project's consistency with relevant state and federal comprehensive plans.

The Commission's assessment of a project's environmental and engineering aspects often leads to special license articles. These articles frequently require the licensee to implement specific mitigative or enhancement measures. Unresolved major hydropower-environmental resource conflicts may cause the staff to recommend an alternative project design or denial of a license.

Caseload

During FY 1996, the Commission reduced its pending caseload in both the licensing and relicensing categories. In FY 1996, the Commission completed action on 11 license applications for proposed hydroelectric projects. Nine of these proposals were for projects on western waterways and two for proposed projects in the east. In addition, the Commission made final decisions on 26 relicense applications, most of which were for projects with licenses that expired in 1993. In contrast to proposed projects, the majority of the relicenses were for projects in eastern states.

Many of the remaining relicense applications involve contentious issues that must be resolved through the Commission's environmental review process, but, by the end of FY 1997, the Commission expects to reduce the pending caseload significantly.

Project Relicensing

The Commission continued to process the unprecedented number of relicensing cases for hydroelectric projects with licenses that expired in 1993. The projects remaining from the 157 applications for new licenses filed for this group of projects still comprise a large part of the Commission's workload. By the end of FY 1996, 97 had been issued new licenses. One application was withdrawn and one licensee filed for surrender of its license.

During FY 1996, the Commission completed ten Draft EISs (DEIS), 12 Final EISs (FEIS), eight Draft Environmental Assessments (DEAs), and 15 Final Environmental Assessments (FEAs) that addressed the environmental impacts of relicensing existing projects. Several of these documents analyzed cumulative as well as site-specific impacts resulting from relicensing two or more projects within a river basin.

Hydropower Relicensing Reform

On July 10, 1995, the National Hydropower Association (NHA) submitted a petition and a set of draft regulations to the Commission proposing to change relicensing procedures significantly. The Commission issued a notice of the petition on October 31, 1995, and received numerous comments.

Environmental Analyses

Environmental Impact Statements

The following are summaries of some of the EISs issued in FY 1996:

- In August 1996, the Commission issued an FEIS for relicensing the existing Deerfield River Project No. 2323 and the Gardners Falls Project No. 2334 on the Deerfield River in Vermont and Massachusetts. The FEIS evaluated the environmental consequences associated with: (1) implementing a settlement agreement and cultural resources management plan involving the Deerfield and Bear Swamp Projects; (2) relicensing the Deerfield and Gardners Falls Projects; and (3) modifying operation of the licensed Bear Swamp Pumped Storage Project No. 2669 on the Deerfield River between the Deerfield and Gardners Falls Projects. Proposed enhancements evaluated in the FEIS included: minimum flows in nearly 12 miles of formerly bypassed river channel; installation of three downstream fish passage facilities and one upstream fish passage facility; upgraded recreational facilities and improved whitewater boating opportunities; improved waterfowl nesting and wetlands management; and conservation restriction on the use of nearly 18,000 acres of land in the Deerfield River Basin. The Deerfield River

and Gardners Falls Projects have installed capacities of 76.9 MW and 3.6 MW respectively. The settlement agreement between the licensee for the Deerfield and Bear Swamp projects represented an agreement with 12 resource agencies and non-government organizations (NGOs) that provided terms and conditions for fisheries, fish passage, wildlife, water quality, land management and control, recreation, and aesthetics.

- In August 1996, the Commission issued a multiple-project FEIS for the mainstem Saco River in Maine. The document evaluated the environmental effects associated with three proposed actions: (1) approving and implementing the proposed *Saco River Fish Passage Agreement,* which would require amending the existing licenses for the Bar Mills No. 2194, West Buxton No. 2531, and Hiram No. 2530 projects; (2) relicensing the Bonny Eagle No. 2529 and Skelton No. 2527 projects; and (3) issuing an exemption for the existing unlicensed Swans Falls Project No. 11365. The primary issues included fish passage, minimum flows, impacts of peaking operations on wetlands, and the need for additional recreational access.

- In June 1996, the Commission and the U.S. Forest Service issued an FEIS for relicensing ten projects in the Wisconsin River Basin in Wisconsin. The projects have a total installed capacity of 38 MW. The 21 developments in the headwaters projects supply headwater benefits to 26 downstream hydropower projects and regulate flows in the Wisconsin River. The FEIS examined fish entrainment, recreation, and operational headwater flows for basin-wide water quality, recreation, incidental flood control, and power.

- In June 1996, the Commission issued an FEIS for relicensing the existing 5.1–MW Clyde River Project No. 2306. The project consists of two storage reservoirs and three hydropower developments on the Clyde River near Newport, Vermont. Major issues evaluated included: operating the West Charleston development run-of-river rather than in a peaking mode; supplying greater minimum flows below Newport Nos. 1,2,3 Development; and removing the Newport No. 11 Dam without repowering (this dam has since been removed).

- In September 1996, the Commission issued an FEIS for relicensing the existing Penobscot Mills No. 2458 and Ripogenus No. 2572 projects that consist of five separate developments on the West Branch Penobscot River in west-central Maine. The combined installed capacity of 92.8 MW is used for manufacturing newsprint. The FEIS examined impacts of establishing a shoreline vegetative buffer zone and supplying greater spillage flows to protect aquatic habitat in a bypassed reach.

- In October 1995, the Commission issued a DEIS for relicensing the Leaburg-Walterville Project No. 2496 on the McKenzie River in west-central Oregon. The project has two developments with a total installed capacity of 21.5 MW. The DEIS examined impacts of different instream flow levels in the Leaburg and Walterville bypassed reaches, effects of a 1.5–foot rise in the Leaburg reservoir level, and effects of sill dam construction near the Walterville diversion canal intake.

- In July 1996, the Commission issued an FEIS for relicensing the Nisqually Project No. 1862 on the Nisqually River in western Washington. The project has two developments with a combined installed capacity of 115 MW. The FEIS examined impacts of white-water boating and other project area recreational opportunities, bypassed reach minimum flows, and fish and wildlife protective measures.

- In September 1996, the Commission issued an FEIS for relicensing the existing 42–MW Snoqualmie Falls Project No. 2493 in western Washington. The FEIS evaluated expanding the project to 73 MW which would involve raising the dam and diverting additional flows around Snoqualmie Falls.

- In October 1995 and June 1996, the Commission issued a DEIS and an FEIS for relicensing the 168–MW North Georgia Project No. 2354. The major issues analyzed were how potential flows through the Tallulah Gorge bypassed reach affect: domestic water use; fisheries resources; sensitive plant species; aesthetic resources; white water boating; upstream lake levels; public access; local economy; air quality; and hydroelectric generation.

Third-Party Contracting

When the Commission is required to prepare an EIS under NEPA for a license application, EPAct authorizes the Commission to permit hydro applicants—at their option—to pay outside contractors to prepare the EIS. Hydro applicants may choose a contractor from a Commission-approved list. The Commission reviews the applicant's choice, makes the final selection, and oversees all contractor-prepared documents. This shortens the time required for Commission review because much of the environmental analysis is completed before an application is filed.

A third-party DEIS was prepared and issued in January 1996 for the proposed 200-MW Blue Diamond Project No. 10756 in Nevada. The major issues examined were the potential impacts on two endangered species.

Since February 1996, the Commission staff has participated in a cooperative consultation process, involving members of the public and representatives of NGOs, federal and state resource agencies, and local governments, for relicensing New York Power Authority's (NYPA) St. Lawrence-Franklin Delano Roosevelt Project No. 2000. In lieu of the Commission's pre-filing consultation process, the Commission, the New York Department of Environmental Conservation (DEC), and the NYPA agreed to prepare a joint EIS document for the project relicensing. A third-party contractor will prepare the EIS. The EIS also would serve as part of NYPA's complete license application submittal to DEC for water quality certification review, under Section 401 of the Clean Water Act.

Environmental Assessments

Following is a summary of some of the EAs issued in FY 1996:

- The Santee River Basin multiple project FEA examined the environmental consequences of relicensing three existing South Carolina hydropower facilities: Saluda No. 2406, Buzzards Roost No. 1267, and Hollidays Bridge No. 2465. The major issues analyzed were instream flows for fish and recreational boating, entrainment of fish in project turbines, water quality, reservoir level, and recreation.
- The Broad River Basin multiple project FEA examined the environmental consequences of relicensing three existing South Carolina facilities: Neal Shoals No. 2315, 99 Islands No. 2331, and Gaston Shoals No. 2332. Flows, recreation, and entrainment of fish in project turbines were the major issues.
- A DEA was issued in October 1995 and an FEA in August 1996 for the eight-development Beaver River Project No. 2645 on the Beaver River near Carthage, New York. Major issues included recreational enhancements, such as whitewater releases and canoe portages, and fish protective measures, such as trashracks and screening, minimum flows, and reservoir fluctuation limits.
- A multiple-project DEA was issued in March 1996 and an FEA in September 1996 for the five-development Black River Project No. 2569 and the single-development Beebee Island Project No. 2538. Both projects are located on the Black River upstream of Watertown, New York. The applicants negotiated a Settlement Offer with ten parties, including the U.S. Fish and Wildlife Service and the New York DEC that addressed streamflow monitoring, continuous riverflows and minimum bypass flows, flashboard installation, fish passage, and recreational enhancement.
- A single-project FEA was issued in April 1996 for the existing 36.8-MW Kern No. 3 Project No. 2290 on the Kern River in central California. The FEA was prepared in cooperation with the Sequoia National Forest. The licensee, the U.S. Fish and Wildlife Service, the Forest Service, and the State of California Department of Fish and Game reached an agreement to enhance the fishery in the Upper Kern River Basin.
- The FEA for Stevens Creek Project No. 2535 on the Savannah River near Augusta, Georgia, was issued in November 1995. The major environmental issue evaluated was monitoring low dissolved oxygen below the project's tailrace that could affect fish habitat.
- A single-project FEA was issued in March 1996 for the existing, unlicensed 6.3–MW Oswego Falls Project No. 5984 on the Oswego River in Fulton, New York. Major issues examined included bypassed reach flow levels and fishery protective measures.
- In August 1996, the Commission issued a DEA for licensing the Central Vermont Public Service Corporation's existing 2.2–MW Silver Lake Project No. 11478 on Sucker Brook in Addison County, Vermont. Issues evaluated included: eliminating large seasonal drawdowns at Sugar Hill reservoir; adding additional

spillage to improve aquatic habitat in bypassed reaches of Sucker Brook; increasing flows at the Falls of Lana to benefit area aesthetics; and supplying recreational enhancements.

- In September 1996, the Commission issued a DEA for licensing Central Vermont Public Service Corporation's existing 1.9–MW Carver Falls Project No. 11475 on the Poultney River in Washington County, New York, and Rutland County, Vermont. Issues evaluated included: costs and benefits of changing project operation from seasonal peaking to year-round run-of-river; flow required to maintain a zone of passage for spawning walleye into the project's bypassed reach; dam spillage needed to enhance area aesthetics; and measures to protect cultural resource sites.

EPAct allows an applicant for a hydropower license, at its option, to file a DEA with its license application. Applicant-prepared EAs provide multiple benefits: they identify and resolve the environmental and public issues earlier in the licensing process; facilitate a cooperative approach to project development; provide a forum for settlements between parties in cases of disagreements; and significantly decrease the time required to issue a license. The Commission staff assists in preparing applicant-prepared EAs by: advising on requirements and policies; assisting in scoping and public meetings; and supplying technical input and review of study plans and reports. Staff review assures that the applicant-prepared EA represents and analyzes the interests of all stakeholders.

A young man gets help hooking his line at Portland General Electric's Roslyn Lake Park in Oregon.

In March, the Commission issued the first license prepared under the applicant-prepared EA process to Georgia Power Company for the Sinclair Project No. 1951. The project is on the Oconee River near Milledgeville, Georgia. The FEA addressed several complex and difficult issues including: flooding of private lands; utilizing flows; preserving and enhancing aquatic habitat for an endangered species candidate; maintaining water quality; and developing and maintaining recreational resources. The license was issued 6.5 months after Georgia Power submitted its application, almost 1.5 years less than under the traditional relicensing process.

In FY 1996, the staff supplied guidance on 14 additional projects where applicants opted to prepare an applicant-prepared EA. These projects included Riley-Jay-Livermore No. 2375, Otis No. 8277, Roanoke Rapids-Lake Gaston No. 2009, Holcomb Rock No. 2901, Big Island No. 2902, Mahoney Lake No. 11303, Upper Chilkoot No. 11319, Power Creek No. 11243, Flambeau No. 1960, Flint River No. 1218, Reynolds Creek No. 11480, Lake Dorothy No. 11556, Ketchikan Lake No. 420, and Gross Dam No. 2035.

In FY 1996, the Commission continued its outreach program and participated in hydropower conferences to inform license applicants, federal and state agencies, public interest groups, and Native Americans about a variety of topics. They included improvement of the licensing process, third-party contracting, assessment of cumulative environmental impacts, and ways in which the public may become more involved in the NEPA process.

Joint Preparation of Environmental Documents

The Commission prepared, and will continue to prepare, NEPA documents with the Forest Service and other cooperating agencies, such as the Bureau of Land Management and the Corps of Engineers.

Compliance

The goals of the hydropower compliance program are to ensure that the terms and conditions of licenses and exemptions are adhered to and that actions to protect life, health, property, and the environment are taken promptly. While these goals remained constant in FY 1996, the means to achieve them continued to evolve. The Commission emphasized proactive cooperation with the hydro industry to prevent noncompliance.

Audits

In FY 1996, the Commission continued its successful compliance audit program. Audits were conducted at 23 projects in 13 states. Started in 1991, this program has focused on projects that have experienced previous problems and is intended to foster a more active and cooperative effort to ensure compliance.

Outreach Programs

In FY 1996, over 1,000 new requirements were included in new licenses. Because relicensing will continue to affect compliance workload, the Commission has employed several outreach efforts to better serve the hydro industry. One effort involves License Transition Teams that focus on assisting licensees in the critical first few months after license issuance. These multi-disciplinary teams work with the licensees and supply answers to specific questions, prepare status reports of license requirements, and supply guidance for complying with license terms and conditions. This service gives licensees a forum to discuss any questions or problems early on and helps to promote a cooperative compliance environment. To date, the teams have worked with licensees on 33 projects.

Another outreach effort is the Compliance Liaison Activity Program that focuses on licensees and exemptees with small projects and limited resources. This group of projects has a history of a disproportionate number of compliance issues. We contact these owners and operators to determine if there are any issues they want addressed. In FY 1996, we offered to assist over 100 project owners with projects of 1,500 KW or less installed capacity. In addition, the staff met with representatives of several projects to help resolve more complex issues. By periodically communicating with small project owners, the Commission hopes to reduce instances of noncompliance.

Civil Penalty Program

Under Section 31 of the FPA, hydroelectric licensees, exemptees, and permitees are subject to civil penalties of up to $10,000 a day, or revocation of their authorization, for violating Part I of the FPA. Commission actions during FY 1996 included assessing fines of $18,500 for failing to prevent stream turbidity and sedimentation and pumping sediment-filled water into a stream, and $8,000 for failing to maintain a quality control program during construction. Also, an ALJ determined a $73,920 fine for violating the Commission's dam safety regulations.

Post-License Environmental Analysis

Actions not contemplated at the time of licensing may require post-licensing environmental analyses. In addition to the numerous EAs that are routinely prepared, the following describes the EISs prepared to evaluate the increasing number of post-license filings.

In June 1996, the Commission issued an FEIS for the existing Rocky Reach Project No. 2145 on the Columbia River in Washington. The FEIS evaluated the licensee's proposal to raise the reservoir elevation by three feet. Raising the elevation would result in a net increase in project capacity of 33.7 MW.

In July 1996, the Commission issued an FEIS for the existing Kerr Project No. 5 on the Flathead River in Montana. The FEIS discussed the licensee's proposed mitigative measures for fish and wildlife and erosion control measures to be implemented within the project boundary in and adjacent to Flathead Lake.

In September 1996, the Commission issued an FEIS for the existing Priest Rapids Project No. 2114 on the Columbia River in Washington. The FEIS evaluated ways to provide safe downstream passage for mid-Columbia salmon and steelhead smolts past the project, which includes the Priest Rapids and Wanapum dams. Fish passage alternatives analyzed included: an enhanced spill program; an enhanced spill program with construction of structures to reduce gas supersaturation levels; mechanical bypass facilities; a transportation alternative proposed by the licensee; and surface collectors.

License Reopener Provisions

In the 1960s, licenses included provisions (reopener articles) allowing the Commission to modify projects to ensure that adjustments could be made to accommodate future environmental resource needs. These provisions began to be used significantly in the 1990s. As the demands on water resources increased, the calls to modify the requirements of existing hydroelectric facilities also increased.

Requests to modify license requirements include: withdrawal of water for municipal water supplies; installing fish passage facilities; enhancing recreational facilities; modifying reservoir surface elevations; releasing additional minimum flows below project dams; and improving water quality.

State and federal resource agencies and other entities have asked the Commission to reopen licenses for installing downstream fish passage facilities at projects located within the Connecticut River Basin. These facilities would help restore Atlantic salmon to the basin. The Comtu Falls Project No. 7888 was the first project where the Commission required the licensee to install these fish passage facilities.

The Commission is involved in several other proceedings to minimize environmental impacts not contemplated at the time of licensing. Through meetings and correspondence, the Commission often works with the interested parties to reach mutually agreeable solutions.

Visitors to Tallulah Gorge in north Georgia in 1906. Relicensing of the nearby hydroelectric project was pending in Fiscal Year 1996.

Water Quality

Maintaining state water quality standards and protecting existing aquatic resources are important considerations in processing license applications and in post-licensing activities. When a license or an amendment to a license is issued, the Commission seeks to ensure that water quality resources are maintained or enhanced.

Project effects on dissolved oxygen, aeration, water temperature, and water chemistry are carefully examined. If, after reviewing site-specific conditions, there is reason to believe that a project may adversely affect water quality, changes may be required to minimize or mitigate these impacts. Monitoring may also be required to ensure that the project maintains the required water quality standards.

Headwater Benefits

Section 10(f) of the FPA requires the Commission to determine how much an owner of a downstream non-federal hydropower development must pay the United States or an upstream licensee for energy generation benefits supplied by the upstream storage project. Total headwater benefits assessments of approximately $254 million have been made since the program began in 1920. The Commission assessed approximately $6 million for FY 1996 annual energy gains supplied by federal storage projects.

The Commission determined headwater benefits for the Kern and Des Moines River Basins that resulted in $148,000 in assessments. The Commission also completed a review of six additional river basins for potential headwater benefits. The Commission's environmental support contractor helped the staff to: (1) begin 15 new basin studies; (2) complete a "Headwater Benefits Brochure" that gives an overview of activities; and (3) begin evaluating methods for simplifying the management of the large amount of data required to run the Commission's computer program. In addition, Oak Ridge National Laboratory continued refining the calculation of energy gains.

Efficiency Upgrade Program

During FY 1996, the Commission processed eight efficiency upgrade-related project amendments, resulting in an increase of about 72.5 MW in generating capacity. The efficiency upgrade program encourages capacity and efficiency upgrades at existing hydropower projects. The program is a direct result of Commission efforts to minimize the pre-filing requirements for non-capacity-related amendments with minimal expected impacts. The program's objectives are to promote domestic energy production, encourage utilities to evaluate investments in energy efficiency and make more efficient use of existing hydroelectric resources.

A typical efficiency improvement at a hydropower project can include rehabilitating generating or turbine units, modernizing controls, or installing additional units. Since the program began in 1991, the Commission has processed 106 efficiency upgrades resulting in an increase of 681.5 MW of generating capacity.

Jurisdictional Reviews

The Commission reviews unlicensed operating projects and declarations of intent for proposed projects to determine whether they are required to be licensed under Section 23(b) of the FPA. From April to September 1996, the review of these projects resulted in 140 orders finding that licensing is required and 134 orders finding that licensing is not required. In FY 1996, the Commission conducted 25 reviews determining jurisdiction. This number included nine "Taum Sauk" projects, ten declarations of intention, and six unlicensed projects.

The "Taum Sauk" projects are those projects licensed between the Supreme Court's 1965 decision involving Union Electric's Taum Sauk Project and the Second Circuit's 1972 Farmington decision. Union Electric held that projects generating for an interstate grid affect interstate commerce for FPA Section 23(b) purposes. Farmington held that, in addition to a project's effect on interstate commerce, there must also be post-1935 construction. Between 1965 and 1972, the Commission issued licenses for "Taum Sauk" projects that it thought were required to be licensed based on their interconnection to the grid alone. As these licenses come up for renewal, the Commission reviews their jurisdictional status. The jurisdictional review process for these projects follows the same guidelines outlined for unlicensed projects and declarations of intention.

Power Site Lands

During FY 1996, the Commission processed 312 applications for non-waterpower uses of federal lands reserved for waterpower purposes. These non-waterpower uses included 165 mining claims, four mineral leases, eight rights of way, and 135 determinations under the FPA.

All of the approximately 600 active but as-yet-undeveloped power sites established under Section 24 of the FPA have been identified by township, range and section for the public land states and by Federal Reservations for the other states. This allows the Bureau of Land Management and the Commission to handle requests for other uses of the power sites more expeditiously.

Surrenders

Licenses and exemptions may be surrendered only after the owners have fulfilled such obligations as the Commission may prescribe. Processing a surrender application includes issuing a public notice that is published in a local newspaper. Comments, protests, and motions to intervene are then reviewed and considered. Before approving surrender requests for projects where land-disturbing activities have taken place, the Commission assesses the environmental effects of the proposed surrender to determine what, if any, measures to restore the site are appropriate. In FY 1996, the Commission approved 18 surrender applications.

Alternative Dispute Resolution

Alternative Dispute Resolutions (ADR) are optional procedures and informal practices used in lieu of litigation to resolve disputes and complement settlement practices. The ADR process offers participants additional opportunities to simplify and expedite their proceedings. ADR methods may include settlement negotiations, facilitation, mediation, and arbitration, or any combination of these.

The Commission recently initiated and encouraged settlement discussions in two unique proceedings. In the Lower Mokelumne River Project No. 2916 proceeding, the Commission, through use of a reopener article, is reevaluating the need to modify existing project facilities and operation to protect and maintain downstream fish and wildlife resources. The second, the New Don Pedro Project No. 2299 proceeding, is the Commission's first use of professional mediators to reach a consensual agreement among all parties.

Each proceeding involved allocating limited water resources among municipal consumers, irrigators, fish and wildlife resources, and other important uses. The proceedings were highly contentious, involving many parties advocating diverse interests. Settlement discussions offered an excellent opportunity for appropriately allocating water resources in a timely fashion.

A conceptual settlement was filed in the Lower Mokelumne River proceeding. While the final details of this settlement are resolved among the parties, the licensee voluntarily implemented changes in project operations that improved conditions for the downstream chinook salmon and steelhead fishery. The parties for the New Don Pedro proceeding filed a consensual settlement and the Commission amended the license, implementing the terms of the settlement and resolving all outstanding disputes. ADR was also successfully used at the Piney Project No. 916 and the International Falls Project No. 5223.

Fisheries

In FY 1996, the Commission continued its efforts to ensure that fishery resources are protected and enhanced. Before issuing a license, the Commission staff independently analyzes environmental impacts, through either an EA or an EIS, and develops appropriate terms and conditions to maintain and enhance the fishery.

At the request of the National Marine Fisheries Service and the U.S. Fish and Wildlife Service, the Commission staff participated in meetings with licensees, resource agencies, Native Americans, and interested entities who are developing a Columbia River Habitat Conservation Plan (HCP). The HCP would identify the specific measures to be taken and funds to be made available to minimize and mitigate the impact of the Wells, Rocky Reach, Rock Island, Wanapum and Priest Rapids hydroelectric projects on the anadromous fish in the Columbia River. The HCP would support issuance of an incidental take permit under Section 10 of the Endangered Species Act. Issuing this permit would accelerate the cooperative implementation of fishery protective measures.

The compliance staff continues to work with other agencies and licensees to improve fish passage and to encourage development of fish protective measures.

Recreation

Data collected by the Commission from 1990 through 1992 for approximately 1,000 licensed developments (a project may consist of one development or more) show that annual public use exceeded an average of 81,000 recreation days per development. Recreational development includes facilities for camping, picnicking, swimming, boating, hiking, fishing, and hunting. There are over 28,000 tent/trailer/recreational vehicle sites, more than 1,100 miles of trails, and 1,200 picnic areas at Commission-licensed facilities. The total surface area of reservoirs at licensed projects is more than three million acres. License applications for major hydropower projects include recreational plans for the project area. Those applying for a license are expected to review recreational needs in the project area and to supply public recreational facilities during the license term. With few exceptions, such as unsafe areas, project lands and waters are open to the public.

Every six years, licensees are required to submit a Licensed Hydropower Development Recreation Report (Form 80). This report supplies data on recreational use and facilities at each project development. The next filing of the Form 80 is due on April 1, 1997.

In March 1996, the Commission published a guidebook entitled *Recreation Development at Licensed Hydropower Projects.* This guidebook is intended for use by project licensees. It contains information on the Commission's recreation policy, license amendments related to recreation, project impacts on recreation, and development of recreation plans and license exhibits.

In August 1996, the Commission published a brochure entitled *Recreation Opportunities at Federal Energy Regulatory Commission Licensed Hydropower Projects.* This brochure is for the general public and federal, state, and local agencies. It contains data on the types of recreational facilities and activities that are found at licensed hydropower projects throughout the United States. The brochure also includes general information about the Commission and a map showing licensed hydropower projects with recreational opportunities.

Dam Safety

Dam safety receives top priority in the Commission's hydropower program. All of the Commission's licensed projects are inspected regularly to ensure their safety. The Commission's dam safety program is the largest in the federal government. The Commission cooperates with other agencies, as appropriate, in carrying out the program.

The Commission's dam safety program ensures that licensed and exempted projects are properly constructed, operated, and maintained to protect life, health, and property. The program complies with the *Federal Guidelines on Dam Safety* issued in 1979 under Presidential Executive Order.

During FY 1996, the Commission staff conducted over 3,000 dam safety inspections and completed final review of 165 reports of inspections by independent consultants.

A licensee must retain an independent board of consultants to review the design and construction of major or complex projects. Commission regulations require an independent consulting engineer, approved by the Commission, to inspect and evaluate certain projects at five-year intervals after they become operational. They inspect and evaluate these projects to identify any actual or potential deficiencies that might endanger public safety. If deficiencies are discovered, dam owners are required to take remedial action.

Since 1981, over 394 dam safety modifications have been completed at a total cost of about $634 million. At the end of FY 1996, there were 89 ongoing modifications at a total estimated cost of $184 million.

When warranted, the Commission staff has retained the services of consultants to assist staff in specialized fields, such as seismology and geotechnical engineering. In addition, the staff contacts experts in specialized fields to keep abreast of the latest advances in engineering.

The Commission staff has required licensees to use new equipment for investigative and quality control purposes and has revised proposed investigative programs to ensure proper assessment of the stability and adequacy of dams. Typically, these efforts result in cost savings associated with remediation and sometimes eliminate the need for dam safety modifications. In addition, the staff has required licensees to modify their analytical methodologies.

At several projects, the staff helped in selecting core hole locations and sampling and laboratory testing procedures and assisted in interpreting the results. Before the Commission can accept the strength parameters used in dam stability and stress analyses, it has to observe the field coring operations and inspect the foundation core samples. The information staff obtains in the field is needed to evaluate the data used in dam safety analyses.

There is a concern about possible effects on dams from seismic events. Varying degrees of seismic activity have been recorded east of the Rocky Mountains, and there is concern of a repeat of the New Madrid, Missouri, and the Charleston, South Carolina, earthquakes. The Commission has retained the services of expert consultants to assist staff in addressing these issues on specific dams. In addition, there has been an increasing concern about the possibility of a large earthquake that could affect areas of Oregon and Washington west of the Cascade Mountains. The Commission staff is monitoring and evaluating the seismic research in this area. Projects potentially affected will require more site-specific seismicity evaluation and subsequent structural analyses. The importance of assessing the stability of dams during earthquakes was provided by the 1994 Northridge earthquake in California, which affected Commission-licensed and exempted dams. No dam failures occurred at these sites. Information gathered from studying earthquakes that occur elsewhere in the world is used in selecting earthquake parameters to use in analyses.

Work on the Commission's Engineering Guidelines continued during FY 1996. The staff uses these guidelines in processing license applications and for evaluating existing projects, including proposed changes or additions. The final draft of a chapter on Amburson, multiple arch, and timber crib dams has gone out for peer review. Work is essentially completed on the first draft of a chapter on arch dams. A draft of a chapter on water conveyances is undergoing staff review. In addition, a separate chapter on seismicity will be prepared.

Under the Memoranda of Agreement (MOA) with the DOE and the Nuclear Regulatory Commission (NRC), the staff continues to perform dam safety inspections of

dams under the jurisdiction of these agencies. Approximately 43 such inspections were made in FY 1996. The Commission has continued its efforts to work more closely with states on dam safety.

The Commission requires emergency action plans (EAPs) for all dams unless it is demonstrated that no reasonably foreseeable emergency would endanger life, health, or property. EAPs provide an early warning system in case of sudden emergencies caused by natural disasters, such as hurricanes and earthquakes. Their purpose is to provide maximum public protection at all times. The Commission conducted 34 functional exercises in FY 1996 to test the EAPs under simulated disaster conditions. These exercises included the state and local disaster preparedness agencies responsible for emergency evacuation.

The Commission staff's initiative that requires licensees to conduct a functional EAP exercise periodically is gaining national interest. Representatives of several federal agencies, including the Bureau of Reclamation, the Corps of Engineers, the Tennessee Valley Authority (TVA), and the Federal Emergency Management Agency (FEMA), have expressed interest in the Commission's EAP exercise program and have attended the exercise design course.

FEMA determined that EAP training should be given to state-regulated dam owners and emergency management agencies. FEMA completed an MOA with the Commission for the Commission staff to develop and conduct an EAP training course. The Commission staff instructed course participants in how to develop and test an EAP. A "train-the-trainer" course was held in October 1995 at FEMA's training facility. Commission staff acted as consultants during the course.

FEMA contracted with the Association of State Dam Safety Officials (ASDSO) to continue the EAP program for the states. A one-day EAP training session was held at the 1996 ASDSO Annual Conference. A follow-up session provided "train-the-trainer" instructions.

The Commission cooperates with project owners in assessing the need for safety devices or measures and solving safety problems. The Commission's *Guidelines for Public Safety at Hydropower Projects* describes the types of possible hazards and the safety devices or measures that can protect the public. The Commission staff ensures that licensees and exemptees install and maintain the appropriate devices.

Hydropower Resources Assessment

As of September 30, 1996, the Commission estimated the Nation's developed conventional hydroelectric generating capacity to be 74.7 million kilowatts supplied by 2,368 plants in 48 states.

Plants are being constructed and inoperative ones restored at 35 locations with a resulting increase in capacity of 207,000 kilowatts. Also, the Commission has authorized the construction of 83 plants with a proposed capacity of 1,100,000 kilowatts. Applications pending before the Commission propose the construction of 45 plants with a total capacity of 295,000 kilowatts. Finally, issued and pending preliminary permits propose the study of 86 hydroelectric sites with an estimated capacity of 926,000 kilowatts.

The leading states in hydroelectric energy production are Washington, California, and Oregon with an estimated average annual output of 100.4, 41.3, and 28.9 billion kilowatt-hours respectively. ◆

Hydroelectric Power Table

(Projects For Which Licenses Will Expire
Between January 1, 1997, and December 31, 2002—See 18 CFR §16.3)

License Expiration Date	Licensee	FERC Project No.	State	County	River	Installation (KW)	Facilities Under License*	Period of (Years)	Subj. Fed.
97/01/29	Pacificorp	1927	OR	Douglas	N. Umpqua River	185000	DM PH	50	N
97/05/11	Minnesota Pwr & Light Co	2663	MN	Morrison	Crow Wing River	1520	DM PH	30	N
97/08/31	Georgia Power, Co.	1951	GA	Baldwin	Oconee River	45000	DM PH	50	N
97/12/23	Idaho Power Co	2061	ID	Twin Falls	Snake River	60000	DM PH	50	N
97/12/31	Central Maine Power Co.	2612	ME	Somerset	Dead River	0	DM RS	50	N
98/01/31	Wisconsin River Power Co	1984	WI	Adams	Wisconsin River	35000	DM PH	47	Y
98/02/28	Idaho Power Co	1975	ID	Gooding	Snake River	69000	DM PH	50	Y
98/02/28	Wisconsin Elec Power Co	1980	MI	Dickinson	Menominee River	22700	DM PS	50	Y
98/03/31	Bonners Ferry, City of	1991	ID	Boundary	Moyie River	3975	DM PH	48	N
98/06/30	Northern States Power Co	1982	WI	Chippewa	Chippewa River	33000	DM PH	48	Y
98/06/30	Herber Light 49	1994	UT	Wasatch	Snake Creek	750	PH	49	N
99/02/28	Southern Cal Edison	2017	CA	Fresno	San Joaquin R	84000	DM PH	50	Y
99/03/30	Bangor Hydro Elec. Co.	2622	ME	Penobscott	W Br Penobscott R	3440	DM PH	33	N
99/05/31	Green Mt. Pwr. Corp	2674	VT	Addison	Otter Creek	2400	DM PH	50	N
99/05/31	Idaho Power Co	2777	ID	Twin Falls	Snake	34500	2DM 2PH	50	N
99/05/31	Idaho Power Co	2778	ID	Jerome	Snake	12400	DM PH	50	N
99/08/31	Holyoke Wtr & Pwr	2004	MA	Hampden	Connecticut River	42865	6DM 6PH	50	N
99/09/30	Lwr Val Pwr & Lt Co	2032	WY	Lincoln	Strawberry Creek	1500	DM PH	50	Y
99/09/30	Internat Paper Co	2375	ME	Oxford	Androscoggin River	19540	3DM 3PH TL	50	N
99/09/30	Aquamac Corp	2927	MA	Essex	S. Merrimack CNL	250	DM PH	39	N
99/09/30	Otis Hydro-elec. Co	8277	ME	Franklin	Androscoggin River	10350	DM PH	15	N
99/10/01	S D Warren Co	2897	ME	Cumberland	Presumpscot River	1350	DM PH	37	N
99/11/30	Merrimack Paper Co.	2928	MA	Essex	S. Merrimack	1088	DM 2PH	50	N
99/12/31	Montana Pwr Co	2543	MT	Missoula	Clark Fork R	3040	DM RS PH TL	34	N
00/09/30	Bangor Hydro Elec Co	2721	ME	Penobscot	Piscataquis	1875	DM PH	38	Y
00/10/31	Pacificorp	696	UT	Utah	American Fork	950	DM PH	25	N
00/11/30	Idaho Power Co	2055	ID	Owyhee	Snake	82800	DM PH	50	Y
00/12/31	Virginia Elec & Pwr	2009	NC	Halifax	Roanoke	277920	2DM PH	50	Y
00/12/31	Northern States Pwr	2056	MN	Hennepin	Mississippi	12400	2DM 2PH	50	Y
00/12/31	Nekoosa Packaging	2902	VA	Bedford	James	512	DM PH	38	N
01/01/09	Washington Wtr Pwr Co	2058	ID	Bonner	Clark Fork/ Pend Oreille River	211500	DM PH	50	Y
01/01/30	Northern States Pwr Co	2697	WI	Dunn	Red Cedar River	6000	DM PH	45	Y
01/01/30	Nekoosa Packaging Co	2901	VA	Amherst	James River	1875	DM PH	39	Y
01/01/30	Village of Lyndonville	3090	VT	Caledonia	Passumpsic River	350	DM PH	39	N
01/01/31	Niagara Mohawk Pwr Corp	2060	NY	St. Lawrence	Raquette River		RS	50	Y
01/02/27	County of Antrim	3030	MI	Antrim	Elk River	700	DM PH	20	N
01/02/28	Dairyland Power Coop	1960	WI	Rusk	Flambeau River	15000	DM PH	50	Y
01/03/30	Consumers Power Co	2566	MI	Ionia	Grand River	3250	DM PH	39	Y
01/04/30	Pacificorp	2071	WA	Clark	Lewis River	108000	2DM PH	50	Y
01/07/30	City of Marquette	2589	MI	Marquette	Dead River	3900	2DM 2PH	39	Y
01/07/31	New England Power Co	2077	NH	Grafton	Connecticut River	291360	3DM 3PH	50	Y

Hydroelectric Power Table

License Expiration Date	Licensee	FERC Project No.	State	County	River	Installation (KW)	Facilities Under License*	Period of (Years)	Subj. Fed.
01/08/30	City of Black River Falls	3052	WI	Jackson	Black River	920	DM PH	39	N
01/08/31	Green Mountain Pwr Corp	2090	VT	Washington	Waterbury River	5520	DM PH	50	Y
01/08/31	Connecticut Light & Pwr Co	2597	CT	Litchfield	Housatonic River	9000	DM PH	39	Y
01/08/31	Pacificorp	2652	MT	Flathead	Swan River	4150	DM PH	36	Y
01/09/01	International Paper Co	2631	MA	Hampden	Westfield River	2690	DM PH	36	Y
01/09/29	City of Hamilton	2724	OH	Butler	Miami River	1500	DM PH	39	N
01/09/30	Georgia Power Co	1218	GA	Dougherty	Flint River	5400	2DM PH	22	Y
01/09/30	Aquenergy Systems Inc	2416	SC	Laurens	Saluda River	6200	DM PH	36	Y
01/09/30	Connecticut Light & Pwr Co	2576	CT	New Haven	Housatonic River	151300	10DM 7PH	48	Y
01/09/30	Nantahala Pwr & Light Co	2694	NC	Macon	Queens Creek/ Nantahala River	1440	DM PH	36	N
01/09/30	Graniteville Co	2935	GA	Richmond	Augusta Canal/ Savannah River	1200	DM PH	50	N
01/09/30	S D Warren Co	2942	ME	Cumberland	Presumpscot River	2400	DM PH	39	Y
01/10/01	Pacificorp	2401	ID	Caribou	Bear River	40500	2DM 2PH	36	Y
01/10/31	Wisconsin Electric Pwr Co	2073	MI	Iron	Michigamme River	9600	DM PH	50	Y
01/10/31	Wisconsin Electric Pwr Co	2074	MI	Iron	Michigamme River	2800	DM PH	50	Y
01/11/30	North Central Pwr Co	2064	WI	Sawyer	E Fork Chippewa River	600	DM PH	50	Y
01/11/30	Sanitary District of Chicago	2866	IL	Will	Chicago Sanitary & Ship Canal	13500	DM PH	50	Y
01/12/31	Wisconsin Electric Pwr Co	1759	MI	Iron	Michigamme River	19944	3DM 3PH	27	Y
01/12/31	City of Tacoma	2016	WA	Lewis	Cowlitz River	460000	3DM 2PH	50	Y
01/12/31	Confederated Tribes/ Portland General Electric Co	2030	OR	Jefferson	Deschutes River	398655	3DM 3PH	50	Y
01/12/31	Wisconsin Electric Power Co	2072	MI	Iron	Paint River	100	DM PH	50	Y
01/12/31	Central Maine Power Co	2142	ME	Somerset	Kennebec River	75000	DM PH	50	Y
02/01/31	Pend Oreille Co PUD	2042	WA	Pend Oreille	Pend Oreille River	60000	DM PH	50	N
02/01/31	Niagara Mohawk Pwr Corp	2084	NY	St. Lawrence	Raquette River	343800	22DM 17PH	50	Y
02/02/23	Pacific Gas & Electric Co	184	CA	El Dorado	S Fk American R	20000	11DM PH	22	Y
02/03/31	James River-Norwalk Inc	2312	ME	Penobscot	Penobscot River	7655	DM PH	40	Y
02/07/31	North Canal Waterworks	5906	MA	Essex	N Cnl (Merrimack R)	2520	PH	20	Y
02/07/31	Cominco American	2103	WA	Pend Oreille	Cedar Creek		RS	50	Y
02/09/30	Springville, City of	2031	UT	Utah	Hobble Ck/Utah L	2660	3PH	50	N
02/09/30	Hart, City of	3516	MI	Oceana	S Br Pentwater R	352	DM PH	40	N
02/10/12	Penn Electric Co	309	PA	Clarion	Clarion River	28800	DM PH	23	Y
02/10/31	Hydro Dev Group Inc	6059	NY	St. Lawrence	Oswegatchie R	900	3DM PH	40	N
02/11/01	Trinity Conservancy, Inc	719	WA	Chelan	Phelps Cr, Chiwawa R	240	2DM PH	23	N
02/11/30	NY St Elec & Gas Co	2835	NY	Clinton	Ausable River	2640	DM PH	40	Y
02/12/31	Hydro Dev Group Inc	6058	NY	St. Lawrence	Owegatchie River	1490	DM PH	50	N

* Includes types of facilities at each project, but not total number of each type (e.g. A project may consist of multiple powerhouses or dams.). DM Dam, RS Reservoir, CL Canal, TU Tunnel, FM Flume, PI Pipeline, PK Penstock, PH Powerhouse, TR Turbine, GN Generator(s); TC Tailrace, TL Transmission Line or connection thereto.

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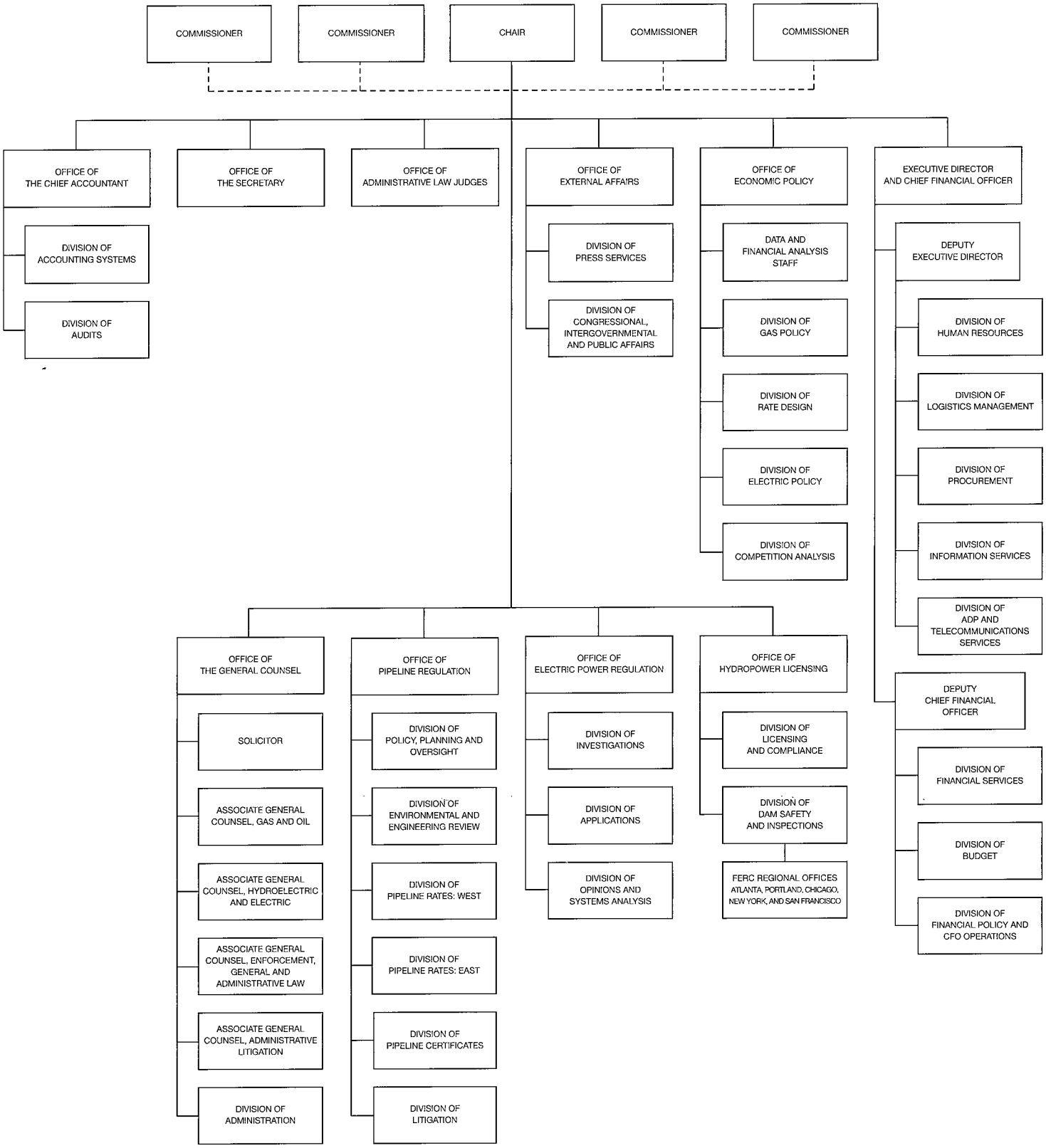
Organization Chart

Federal Energy Regulatory Commission (FERC)



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