

PUBLIC SERVICE COMMISSION OF WISCONSIN

BIENNIAL REPORT

July 1, 1977 to June 30, 1979

F O R E W O R D

This biennial report covers the program, scope, objectives and accomplishments of the Public Service Commission for the period from July 1, 1977, to June 30, 1979, and contains information with respect to matters under the Commission's jurisdiction which it deems proper to submit in compliance with section 15.04(4), Wisconsin Statutes, as to biennial reports.

The following individuals served as Commissioners during this biennium.

Stanley York, Chairman, June 28, 1979 to present

Charles J. Cicchetti, Commissioner, May 4, 1977 to February 22, 1980

Chairman, May 12, 1977 to June 28, 1979

Edward M. Parsons, Jr., Commissioner, November 4, 1977 to present

John C. Oestreicher, Commissioner, January 26, 1976 to June 15, 1979

Matthew Holden, Commissioner, May 1, 1975 to October 28, 1977.



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I.PERSONNEL, As of June 30, 1979

PUBLIC SERVICE COMMISSION OF WISCONSIN

STANLEY YORK, CHAIRMAN  
Executive Assistant--Vacant

CHARLES J. CICCHETTI, COMMISSIONER  
Executive Assistant--Rod Shaughnessy

EDWARD M. PARSONS, JR., COMMISSIONER  
Executive Assistant--Mark R. Conrad

Executive Secretary- Lewis T. Mittness  
Chief Counsel- Steven M. Schur  
Public Affairs and Publications- Al Guyant  
Staff Economist- Modris Reinbergs

Accounts and Finance Division--Frederick C. Huebner, Administrator

Assistant Administrator - Joseph R. Brady  
Accounting Bureau - Norman C. Young  
Audits Bureau - David A. Darwin  
Reports Bureau - Frederick A. Halverson

Administrative Services--Executive Secretary

Budget & Fiscal - Gordon O. Grant  
General Services - Richard Teslaw  
Management Data Services - Eugene Masshardt  
Personnel & Payroll - Carla W. Lent  
Records Management - Vacant  
Word Processing Center - Vacant

Engineering Division--William Sayles, Administrator

Communications Bureau - William J. Green  
Construction Review & Field Surveillance - David L. O'Connell  
Electric & Water Bureau - Clarence F. Riederer  
Gas Bureau - William A. Slagg

Examining Division--Clarence B. Sorensen, Administrator

Systems Planning, Environmental Review  
& Consumer Analysis--William Gillen, Acting Administrator

Consumer Analysis Bureau - Victoria Evans  
Systems Planning Bureau - Jerry W. Mendl

Utility Rates Division--Victor W. Mayer, Administrator

Communications Bureau - Gary A. Evenson  
Electric Bureau - Terrance B. Nicolai  
Gas Bureau - Harold A. Meyer  
Operations Bureau - Thor R. Soderholm  
Water and Sewer Bureau - Robert S. Cullen

II. JURISDICTION, FUNCTIONS AND ORGANIZATION  
of the  
PUBLIC SERVICE COMMISSION

The Public Service Commission is an independent regulatory Commission whose jurisdiction, powers, and duties are delegated to it by the Wisconsin Legislature. According to Wisconsin Statutes, it is the duty of the Public Service Commission to "supervise and regulate every public utility in this state" so that "reasonably adequate service and facilities" are available at "rates that are reasonable and just."

The Public Service Commission is composed of three full-time Commissioners appointed by the Governor and confirmed by the Senate for staggered six-year terms. The Commission has a staff of 147 positions.

As of June 30, 1979, its regulatory powers and duties included the rates and services of:

99 electric utilities (85 are municipal)  
17 gas distribution utilities (1 is municipal)  
3 heating utilities  
121 sewer utilities (combined with water utilities)  
113 telephone utilities  
544 water utilities (526 are municipal)  
1 telegraph company  
898 utilities

The Commission staff is organized into six divisions as well as the office of the executive secretary, the chief counsel's office, the staff economist office, and a public affairs office. Each has the following program assignment:

Executive Secretary

The Executive Secretary serves under the direction of the Chairman and Commission in an administrative and supervisory capacity. After June 30, 1979 the Executive Secretary also serves as administrator of the Administrative Services Division.

Administrative Services

This division provides internal administrative services such as budget analysis and control, data processing and systems analysis, personnel, records management, and word processing.

### Office of Chief Counsel

The Chief Counsel advises the Commission and staff on legal matters, represents the Commission in litigation in state and federal courts and before state and federal administrative agencies. The Office of Chief Counsel also reviews proposed Commission actions for legal correctness and represents Commission staff at hearings.

### Office of Public Affairs

This office mediates consumer complaints, responds to inquiries from the news media and the consumers, and edits final Commission notices, orders and informational papers.

### Office of Chief Economist

The Chief Economist consults with commission and staff on economic factors and issues relating to public utility activities, and develops and presents expert testimony in rate and rule-making proceedings.

### Accounts and Finance Division

The Accounts and Finance Division is responsible for the financial, accounting and reporting aspects of public utility regulation including the development of special studies and recommendations to the commission concerning cost of capital, rate of return and public utility revenue requirement. The Bureau of Audits performs routine compliance audits of the accounts and records of public utilities as well as special investigations and field work involving rate proceedings, transactions with affiliated interests, establishment of new accounting systems and procedures, utility plant construction costs and the proposals by public utilities to merge, consolidate or purchase or sell utility plant. The Bureau of Utility Accounting develops, revises and interprets the uniform systems of accounts for public utilities as required; develops, revises and distributes public utility annual report forms; performs audits of public utility annual reports; investigates utility applications for authority to issue stocks, bonds and all other forms of securities; and reviews depreciation rates, practices and procedures of all utilities. The Bureau of Accounting and Financial Reports collects, compiles and analyzes financial, economic and other data relevant to public utility regulation and prepares and distributes statistical and information bulletins and reports for use by staff and general public.

## Utility Rates Division

The Utility Rates Division was reorganized on April 10, 1978 into five bureaus - Communications, Electric, Gas, Water and Sewer, and Operations and Federal Intervention.

The Communications Bureau participates in formal cases involving telephone and telegraph utilities and regulated radio common carriers. Case participation involves preparation and presentation of testimony and exhibits, cross-examination of witnesses, preparation of cost studies, rate designs, policy and rule proposals, and preparation of orders for the commission. This bureau also processes certain complaints and inquiries; prepares rate impact estimates of construction approvals; and administers and reviews utility tariffs required by s. 196.20, Wis. Stats.

The Electric Bureau participates in formal rate and rule cases involving private and municipal electric utilities and steam heat utilities. Case participation involves preparation and presentation of testimony and exhibits, cross-examination of witnesses, preparation of cost studies, rate designs, extension rules, consumer analyses, rate portions of environmental impact screenings, policy and rule proposals and preparation of orders for the commission. This bureau also monitors applications of electric utility fuel and purchased power cost adjustment clauses; processes certain complaints and inquiries; prepares rate impact estimates of construction approvals, administers and reviews utility tariffs required by s. 196.20, Wis. Stats., and takes a major role in preparing reviews of proposed state and federal energy legislation and compliances with the National Energy Act.

The Gas Bureau participates in formal rate, rule, and gas supply (involving priority-of-service, curtailment, and conservation) cases, involving natural gas utilities. Case participation involves preparation and presentation of testimony and exhibits, cross-examination of witnesses, preparation of cost studies, rate designs, consumer analyses, rate portions of environmental impact screenings, policy and rule proposals and preparation of orders for the commission. This bureau has primary responsibility for implementation and review of gas conservation programs and the preparation of Wisconsin's conservation plan in compliance with federal RCS guidelines. This bureau also processes certain complaints, inquiries, and waiver requests; reviews and administers utility tariffs required by s. 196.20, Wis. Stats.; takes a major role in preparing reviews of proposed state and federal energy legislation and compliances with the National Energy Act, represents the commission on state and national committees and

maintains liaison with federal and other state agencies on matters of gas supply and conservation.

The Water and Sewer Bureau participates in formal rate cases involving municipal and private water utilities and regulated sewer utilities. Case participation involves preparation and presentation of testimony and exhibits, cross-examination of witnesses, preparation of cost studies, rate designs, consumer analyses, policy and rule proposals, and preparation of orders for the commission. This bureau also processes certain complaints and inquiries, prepares rate impact estimates of construction approvals, and administers and reviews utility tariffs required by s. 196.20, Wis. Stats.

#### Engineering Division

The Electric and Water Bureau reviews and makes recommendations on plans for plant additions filed pursuant to ss. 196.49 and 196.491(3) Wis. Stats., participates in the review and evaluation of utility advance plans filed in accordance with s. 196.491(2); reviews and enforces service and safety standards; conducts continuing studies of the adequacy of electric energy supply; represents the Commission on state and national committees; maintains liaison with federal and other state agencies with concurrent jurisdiction; administers Volume 1 of the State Electrical Code; and administers the specific laws relating to the Wisconsin Valley Improvement Company and the Chippewa and Flambeau Improvement Company.

The Gas Bureau processes complaints concerning natural gas utility service, operation, and facilities; reviews and makes recommendations on plans for plant additions; reviews and enforces service and safety standards; represents the Commission on state and national committees; and administers the Gas Safety Standards of the state and the federal government as an agent of the Federal Department of Transportation.

The Communications Bureau processes complaints concerning telephone utility service, operation, and facilities, reviews and makes recommendations on plans for plant additions; reviews and enforces service and safety standards; and represents the Commission on state and national committees.

The Construction Review and Field Surveillance Bureau monitors utility construction projects for prudence of investment, and associated costs relating to investment in, or retirement of, utility plant; maintains price indices of material and labor and

a familiarity with construction standards; reviews methods and procedures in property record work and book entries of utilities acquiring transferred property; and represents the Commission on state and national committees.

#### Examining Division

The Examining Division schedules and gives notice of public hearings, making certain to set each hearing at a time and place most convenient to the parties and the public, and consistent with efficient use of staff time and travel expense; conducts public hearings with a hearing examiner presiding; records verbatim testimony by a stenographic reporter and prepares typewritten transcripts of public hearings; issues proposed decisions on all class 2 and 3 proceedings, and class 1 when specified by the Commission, as set forth in s. 227.09, Wis. Stats. Class 1 is a normal agency case; class 2 imposes sanctions; class 3 is all others.

#### Systems Planning, Environmental Review and Consumer Analysis Division

The Bureau of Systems Planning and Environmental Review is responsible for: preparing evaluations of utility Advance Plans in accordance with s. 196.491(2); assessing the feasibility of future alternative energy options; evaluating the economics and reliability of alternative energy sources; and evaluating the reliability and economics of primary and alternative delivery systems. Included in these duties are specific projects related to transmission reliability and load flow, cost production analysis and system reserve requirements. The staff coordinates the implementation of s. 196.41(3) Wis. Stats., and relevant PSC Administrative Codes in addition to maintaining liaison with other agencies and organizations similarly affected.

The Bureau also implements the Commission responsibilities for environmental impact analysis required under ss. 1.11 and 196.491 Wis. Stats. Included in these duties are coordinating responsibilities in the development of environmental reports impact statements and assessments.

The Bureau of Forecasting and Consumer Analysis provides assessment and evaluation of consumer impacts resulting from utility development and expansion; develops sampling and survey methodologies for assessing socio-economic impacts of major utility facilities; evaluates utility rate impacts on different user classifications (s. PSC 2.90 Wis. Adm. Code); and conducts studies related to energy use and consumer acceptance.

Until recently, this Bureau also conducted forecasts of the demand for electricity, and entered these forecasts into the record of Commission proceeding. The most recent Budget Bill, however, proscribes further such efforts. The Commission is presently considering alternative means of informing itself on the subject of electricity demand, which is a key question both in Advance Plan proceedings and facilities certification cases.

The Wisconsin Environmental Policy Act (WEPA) Coordinator is located in the SPERCA Division. The responsibilities of this position include making determinations as to whether there will be significant environmental impact from utility programs subject to s. 1.11, Wis. Stats. and PSC 2.90; and advising the Commission of its responsibilities under WEPA.

#### New Positions

The Utility Rates Division experienced a large increase in the number of highly complex rate increase and rule change proceedings. The bureaus that deal with energy supply conservation and price matters saw a substantially greater workload due to the complex issues relating to state and national energy supplies and prices. In conjunction with the April 10, 1978 reorganization of the Utility Rates Division that separated the Gas and Electric Bureau into the Electric Bureau, Gas Bureau, and Operations and Federal Interventions Bureau, three new positions were added to the new Gas Bureau: a transfer from the Engineering Division--Gas Bureau, a new permanent position and a new one-year project position through the budget. An additional position was obtained through the budget for the Operations and Federal Interventions Bureau. The new Gas Bureau assumed responsibility for natural gas priority-of-service and curtailment issues, and other gas supply issues formerly the responsibility of the Engineering Division. These changes enhanced the Division's ability to handle both the increased workload and the increasing complexity of energy-related issues.

The agency was also authorized to hire an additional consumer mediation specialist to address the increasing number of consumer complaints and inquiries.

### III. ISSUES BEFORE THE COMMISSION

#### A. ADVANCE PLANNING

The Power Plant Siting Law, Chapter 68, Laws of 1975 (principally s. 196.491, Wis. Stats.), and the Public Service Commission's implementing rules require each electric utility to file an Advance Plan detailing the following items:

- i. Anticipated energy and demand requirements over the next 20 years.
- ii. Proposed construction of generating plants over the next 15 years.
- iii. Proposed construction of transmission facilities over the next ten years.
- iv. Alternatives to the proposed generation and transmission facilities.

The intention of the siting law is to standardize the procedure for review and evaluation of proposed power plant construction and to eliminate expensive delays in processing specific construction applications.

The first (1976) Advance Plans were filed July 1, 1976. The Public Service Commission (PSC) made determinations on these plans in an order issued August 17, 1978. Among other determinations in the Advance Plan 1 proceeding the Commission issued the following directives in its order:

- i. Utilities in the western part of the state are allowed to continue to plan on the basis of a coincident Western Wisconsin demand growth rate of between three and four percent per year. The transmission alternative proposed by PSC staff was to be included as an additional alternative to be further investigated in the appropriate certification procedures.
- ii. No nuclear generation is to be planned or applied for with the exception of Haven Unit 1 and Tyrone Unit 1 until reasonable progress is made in resolving waste disposal fuel supply and decommissioning issues.
- iii. The demonstration of need for the Tyrone Nuclear Plant was to be decided in a separate certification procedure and not in this Advance Plan.

iv. Utilities on the eastern part of the state were directed to plan on adding generating units to provide between 9,647 MW and 10,316 MW of capacity by 1980 using a reserve margin of 14% or 15% of coincident demand depending upon the growth rate of demand.

v. All utilities filing Advanced Plans for the next Advance Plan process were to include a cost benefit analysis for a range of system reliability levels.

vi. All utilities are directed to proceed with the implementation of feasible load management strategies as soon as possible.

vii. All utilities are to promote the utilization of alternative sources of energy by the consumer by proposing rate structures in future rate cases and other appropriate means. The utilities are further directed to investigate and adopt reasonable alternative generation strategies.

viii. A range of pollution control techniques for fossil-fired generating facilities should be considered in any proposal to construct such facilities including the best available control technology.

ix. All utilities were to file in their next Advance Plan an analysis of the cost and benefits of coordinated planning for future generation additions between the eastern and western utilities including a cost and benefit analysis assuming no additional transmission ties as well as one with a reinforced transmission system.

x. Each planning group which offers a combined plan in future planning proceedings is to develop a coincident forecast for the group and is to submit alternative plans for situations of less than and greater than forecasted demand growths.

xi. The utilities are to develop and submit sufficient generation and transmission site data early enough so that at the time of Commission decision on Advance Plan submittal all alternatives are equally feasible with regard to facility design and construction lead times.

Decisions on the second Advance Plan will be forthcoming in the summer of 1980. Issues at that time will include the following:

i. The possibility of reducing the need for additional generation capacity through state-wide coordination of existing facilities.

ii. The cost and benefits of centralized versus dispersed generating plants.

iii. Pollution abatement.

iv. Alternative energy sources.

## B. ELECTRIC ENERGY ISSUES

The electric energy issues considered by the Commission can be categorized into three areas; applications for the construction of generating plants and transmission lines, problems of fuel supply for the generation of electrical power, and third: electric rates and service rules.

### 1. Applications for Construction of Generating Plants and Transmission Lines.

a. Tyrone denied. On March 6, 1979, the Commission denied the application of Northern States Power Company-Wisconsin and its co-applicants, Lake Superior District Power Company, Dairyland Power Cooperative and Cooperative Power Association to construct the Tyrone Nuclear Power facility in Dunn County. Based on extensive testimony received during public hearings the majority of the Commission determined that the applicants had failed to make the required showing of need and therefore the application was denied.

In rejecting the Tyrone application the PSC did not state that it opposes nuclear power but rather that the need for a single large generating station had not been demonstrated and that smaller generating units coupled with time-of-use pricing and load management are more viable methods to meet future demand for electricity in Western Wisconsin.

b. Haven Nuclear Plan application delayed. On June 8, 1979, Wisconsin Electric Power Company, Wisconsin Power & Light Company and Wisconsin Public Service Corporation announced plans to delay the in-service date of the proposed Haven Nuclear generating facility from 1987 to 1989. The utilities attributed their change in plans to delay in processing applications for new plants before the Nuclear Regulatory Commission. This delay is due to the NRC shifting of employees to the investigation and other activities arising out of the accident at Three Mile Island.

c. Pleasant Prairie 2 approved. On October 4, 1978, the PSC authorized construction of the coal-fired Pleasant Prairie 2 Power Plant in the town of Pleasant Prairie in Kenosha County. This 580 MW unit is scheduled to be in operation in 1982 was approved subject to several conditions designed to mitigate adverse environmental impacts. The plant will be built without stack scrubbers because the unit will burn low sulfur Western coal.

d. Germantown Turbines. Since the October, 1977, approval to construct a 213 MW oil-fired combustion turbine at the Germantown substation the PSC has been working with the Wisconsin Electric Power Company and area residents to resolve problems associated with that plant's operation. Complaints were received at two public hearings regarding oil truck deliveries, plant operating hours, air quality, oil firm deposits and other related matters. Decision on the pipeline and any possible mitigating measures addressing the public concerns is to be made during fiscal year 1980.

e. Weston 3 approved. The Commission, in July, 1978, approved the construction of a 300 MW coal-fired power plant to be located in Marathon County. This plant is currently under construction and is expected to be placed into service by June, 1982.

f. Dairyland Power Cooperative project 87 pending. Construction of generating facilities by power cooperatives was not formally considered by the PSC. However, the Power Plant Siting Act of 1975 requires the PSC to rule on the proposed construction of large generation and transmission facilities by cooperatives. Preliminary discussions have been held between the PSC and representatives of Dairyland Power Cooperative regarding the Cooperative's plans for building a 650 MW generating plant currently known as Project 87. PSC is working to coordinate federal and state environmental review efforts on this project in order to reduce duplication and delay.

g. Edgewater 5. The Wisconsin Power & Light Company on June 14, 1976, applied to the PSC for authorization to build a 400 MW coal-fired generating unit designated as Unit 5 at its Edgewater Power Plant. Two old small units would be retired. The utility plans to begin operation of the plant in March, 1983, should the Commission approve the application. This was the first application for generating plant construction which fell under the Power Plant Siting Law.

h. Madison Gas & Electric transmission line decisions.

The issue of overhead versus underground transmission lines arose during the Commission's deliberation on Madison Gas & Electric Company's proposed 69 KV line from the Walnut substation in Madison to the West Middleton substation. Commission authorized construction of the line from the West Beltline to the West Middleton substation rebuilding of a line from Fitchburg to West Middleton, and construction of an underground line from Walnut to Whitney Way. Nevertheless, a controversy arose over the route and type of line from Whitney Way to the West Beltline.

The Commission also approved construction of another MG&E transmission line that attracted city of Madison and city intervention because of the possibility of significant environmental impacts. A majority of the Commission authorized the utility to build a 138 KV line from the North Madison substation to the Sycamore substation. The Commission also directed the utility to consult with the Madison Planning Commission on a specific route for 138 KV line between the Sycamore substation and the Blount Street substation. Portions of this line will be built overhead.

i. Wisconsin Power Light transmission cases. After receiving a petition the Commission reconsidered the location of a segment of a 69 KV transmission line from the Wisconsin Power & Light Company's Cross Plains substation to a new substation near Old Sauk Road and Cleveland Road in the town of Cross Plains. A half-mile segment of the overhead line was to pass the Cross Plains unit of the proposed Ice Age National Scientific Reserve.

After several hearings on the petition to place this segment of the line underground the PSC found that unique geological features of the Ice Age Reserve warranted granting the petition. Although the Commission majority recognize that placing the line underground would increase costs they believe the significant public interest outweighed the economic disadvantages.

j. Wisconsin Public Service Corporation transmission line cases. Another transmission line application that has created controversy is Wisconsin's Public Service Corporation's 345 KV transmission line from the Black Brook switching station near Antigo to the Venus substation near Monico in Oneida County. The applicant reported that the line which would be operated initially at 115 KV would later be converted to a 345 KV line to establish a regional 345 KV transmission loop from the Western Power Plant in Wausau through the Plain substation near Iron Mountain, Michigan. A decision is to be made in early fiscal year 1980.

k. Northern States Power Company transmission line case. Northern State Power Company has proposed to construct a 345 KV transmission line from the Prairie Island Plant north of Red Wing, Minnesota, to the Eau Claire substation. A draft environmental impact statement prepared by PSC staff discusses several route and system alternatives. The line was originally proposed as an outlet for the subsequently denied Tyrone Nuclear facility. Five of six sites tentatively identified as replacements for Tyrone using coal are located north of the town of the Tyrone site. Further complicating the application process is the number of approvals required for the line including Minnesota, Wisconsin and the Federal Government.

## 2. Electric Utilities Experience Fuel Supply Problems

a. On May 23, 1979 the Commission held a public hearing on coal supply problems being experienced by Wisconsin electric utilities. Although primarily held to investigate supply shortages at the Columbia generating station the Commission also sought information on supplies to all Wisconsin coal-fired units. The Commission also required as to whether the Milwaukee Roads financial condition could result in or intensify any supply problems in the future.

The Wisconsin Power & Light Company had reported to the PSC that coal supplies at the Columbia 1 and 2 Power Plants had fallen below desired minimums. It was ascertained that delivery problems had resulted from heavy snowfalls, poor railroad track and equipment conditions and the 1978 coal strike. Resulting delays had forced WP&L to operate the Columbia Units at reduced capacity at times in an effort to conserve supplies. Columbia is jointly owned by Wisconsin Power & Light, Madison Gas & Electric Company and the Wisconsin Public Service Corporation.

Difficulties in obtaining coal impact upon customers in varying degrees WP&L informed the Commission that typical residential electric customers might see a 5¢ per month increase in their bills because of the need to operate less efficient plants and to purchase power from other utilities. Madison Gas & Electric reported that adequate fuel inventories and a sufficient reserve capacity should prevent any significant cost impact on its customers. Wisconsin Public Service Corporation fuel supplies are almost normal to above normal and the company has purchased some economy power from Northern States Power Company.

PSC staff continues to advise the Commission on a regular basis on the status of coal inventories at generating units.

b. Oil. A survey of the middle distillate oil (No. 2) supplies for Wisconsin's power plants used during peak demand time shows that utilities have been able to maintain system reliability in the wake of supply shortages and the independent truckers' protest over spiraling fuel prices. The Nationwide shutdown of about 14 nuclear power plants following the Three Mile Island incident has also increased oil-fired generation of electricity.

Because there is currently a sufficient supply of natural gas and its price is less than that for oil, some utilities are using gas instead of oil to fire peaking units. Utilities have expressed some concern, however, over possible difficulties in building oil reserves for the winter peak.

### 3. Electric Rates and Service Rules Approved and Under Consideration

a. Electric service extension and spaceheating rules. The PSC is nearing completion on a two-year long case investigating the service extension rules of Wisconsin's seven largest electric utilities. The purpose of this proceeding is to determine the effects of electric spaceheating on both the utility system and customers. Among the issues considered in this case are:

- i. The gradual shifting of utilities from summer to winter peaking as electric spaceheating increases.
- ii. Master metering of multi-unit, residential and commercial buildings.
- iii. Alternative energy sources.
- iv. Conservation standards.

As a result of this proceeding the commission has taken the following action to date: the Commission initiated a proceeding for administrative rule making to require individual metering for all residential units on which construction begins after March 1, 1980. Staff of the Commission was directed to prepare an addendum to the Generic Environmental Impact Statement on electric rates which will address the economic and social impacts of revising electric extension rules. Finally, as a result of the

electric spaceheating proceeding the Commission also recommended that the joint committee for the review of administrative rules request that the Department of Industry, Labor and Human Relations strengthen the energy efficiency standards of DILHR's one and two-family building codes for electrically heated homes and its Commercial Code for apartments and other residential units. Although the one and two-family code is one of the toughest in the nation, the PSC believes that this code and the code covering apartments can and should be improved to protect electric and gas spaceheating customers.

b. Wisconsin Electric Power Company rates. On March 6, 1979, Wisconsin Electric Power Company was authorized to collect an additional \$50.6 million or 8.9% in revenues. The utility had requested a revenue increase of about \$63.5 million. This increase was to cover operating and maintenance expenses for 1977 through 1979. The Commission's order in this case continues the practice begun in 1976 of utilizing summer and winter rates. These rates signal customers that their use of electricity directly affects utility costs.

c. PSC approves refund to WEPCO customers. The average WEPCO customer will receive a \$2.65 refund in the July billing cycle as a result of a settlement of a disputed nuclear fuel contract with Westinghouse Electric Corporation. Under the terms of the refund distribution approved by the Commission the refund will reduce bills by about 10%.

WEPCO was one of 13 utilities that sued Westinghouse charging breach of contract for not delivering fuel it agreed to provide. Westinghouse failed to deliver contracted fuel to the Point Beach Nuclear Plant. WEPCO has received an \$8 million cash payment and the settlement includes future discounts for spare parts at the Point Beach Generating Plant for future fuel fabrication services and for 1.35 million pounds of uranium to be supplied over eight years.

d. MG&E and WP&L seek rate increases. Madison Gas & Electric Company (MG&E) and the Wisconsin Power & Light Company (WP&L) recently applied to the PSC for increases in their rates. The Madison utility was last authorized to increase rates in 1976 and WP&L received interim increases in late 1978.

Citing inflation, environmental protection costs, expansion needs and regulatory costs, MG&E, on June 1, 1979, requested an increase in gas revenues of about 14.5 million. If these requests are granted in full, average residential electric customers will face

a \$44 increase in their annual electric costs and gas customers will face an increase of \$41. The utility is seeking a 14% return on common stock up from the current 13%.

Although the Commission is still considering final rates from WP&L's last rate increase application the utility filed a new rate case on June 11, 1979, indicating that costs are exceeding revenues WP&L has asked for a \$3.7 million increase in electric revenue, a \$3.9 million increase in gas revenue and a \$537,000 increase in water revenue. This situation, when a utility files an application for a rate increase before the previous rate case is completed, is known as pancaking.

e. Implementation of Time-of-Day (TOD) Rates. Volume discount electricity pricing has virtually been eliminated in Wisconsin. The PSC has actively pursued the implementation of marginal cost pricing and time-of-day tariff reform in individual rate proceedings since 1975. The Commission directed the large investor owned electric utilities to pursue load research, and to develop time-of-day tariffs for various sizes and types of customers.

On November 11, 1976, the Commission authorized the Wisconsin Power & Light Company (WP&L) to implement the first comprehensive application of mandatory time-of-day tariffs in Wisconsin. The tariff was applied to 130 commercial and industrial customers having a monthly demand greater than 500 KW. In addition to WP&L, the Madison Gas & Electric Company was authorized to place its two largest industrial customers on time-of-day tariffs by Commission order on November 9, 1976. Further, on January 19, 1979, the Commission authorized MG&E to bill an additional 108 customers with monthly demands exceeding 300 kilowatt hours on mandatory time-of-day tariffs.

Wisconsin Public Service Corporation in Green Bay was authorized to place 700 randomly selected residential customers on temporary experimental time-of-day tariffs in February, 1977. In this project, (a joint effort of the utility, the PSC and federal energy agencies) the usage of the selected customers is being monitored for three years to compare the effects of several different time-of-day tariffs. The customer response to time-of-day price signals and the general assessment of residential time-of-day pricing will be evaluated from the data collected during the course of this experiment. In addition, the WPSC has proposed mandatory time-of-day tariffs for approximately 85 industrial and large commercial customers.

Another major implementation of time-of-day tariff reform in Wisconsin was authorized in January, 1978, for Wisconsin Electric Power Company. The Commission authorized WEPCO to place 577 residential, 450 large commercial and industrial and 2,500 smaller commercial customers on mandatory time-of-day tariffs. Further action by the Commission in a March 6, 1979, order authorized WEPCO to add additional residential, commercial and industrial customers to time-of-day tariffs. In total these customers represent more than 40% of WEPCO's peak capacity requirements and 50% of its energy sales.

On March 13, 1979, the Commission authorized the Northern States Power Company-Wisconsin (NSP) of Eau Claire to place 34 customers on monthly demands greater than 1,500 KW on time-of-day tariffs. In June, 1979, the Commission authorized the addition of 61 NSP customers with monthly demands between 500 KW and 1,500 KW. Also in June, 1979, the Commission directed the Lake Superior District Power Company to file time-of-day tariffs by December, 1979, for its customers with monthly demand exceeding 1,000 KW. Finally, the Superior Water, Light and Power Company also has proposed that it place 13 industrial customers with monthly demand greater than 1,000 KW on time-of-day tariffs.

As a result of existing or proposed time-of-day tariffs about 25% of Wisconsin's coincident peak kilowatt demand will be under time-of-day tariffs.

f. Seasonal Rates. Rates that vary from summer to winter are another type of time-of-use pricing employed by three of the states's large electric utilities. These utilities experience a summer peak during which greater demand is placed on power plants for short periods of time resulting in higher cost to the utility. Air conditioning loads are a significant contribution to the summer peak. However, all summertime uses of electricity contribute to this peak. Higher summer rates encourage customers to reduce their use of electricity, which reduces the need for constructing and operating expensive power plants.

g. Interruptible and Curtailable Tariffs. In addition to the widespread implementation of time-of-day tariff reform this Commission has vigorously pursued its commitment to peak load pricing through other reform measures. Interruptible and curtailable tariffs are also approaches initiated by the Commission to accomplish this goal. Interruptible service is defined as electric service of lower reliability than firm service. Interruptible service may be interrupted during system

emergencies in order to maintain a high degree of supply reliability to firm power users. A lower rate is offered to those customers who are willing to allow the utility to interrupt a portion or all of their electric service without advance notice. Curtailable tariffs are similar to interruptible tariffs but provide customers with advance notice of service interruptions. Several utilities are involved in these tariffs, including the Wisconsin Electric Power Company, Northern States Power Company, Wisconsin Power & Light Company and Madison Gas & Electric Company.

h. Load Management. Load management devices allow the utility to shut off residential water heaters during those times when system peak demands increase. Each customer participating in this program will receive a credit on his/her monthly bill. Wisconsin Electric Power Company is in the process of purchasing and installing 150,000 load control devices for electric water heaters.

i. Alternative Energy and Reforms. As noted, the PSC has required in Advance Plan 2 proceedings that each electric utility file with the Commission, among other things, an analysis of alternatives to proposed generation and transmission facilities. The record in the first Advance Plan proceeding disclosed that industrial cogeneration and nontraditional energy sources were two alternatives to peak load growth and the resulting need for additional plants. The Wisconsin Power & Light Company, Wisconsin Public Service Corporation and Wisconsin Electric Power Company now have special experimental tariffs for pricing electric backup service to be used in conjunction with alternative energy systems such as solar and wind.

j. Cogeneration. Marginal costs and peak load pricing have also been applied to the design of tariffs for industrial cogeneration. In a January 19, 1979, decision, the Commission ordered MG&E to provide a discount and/or payment for electricity generated by customers having such capability. The authorized price for all sales by the cogeneration customer reflects the savings of future generation capacity costs and equivalent energy savings.

## C. NATURAL GAS ISSUES

### 1. Gas Supply and Conservation

As the last biennium ended, the natural gas supply situation was critical. Since that time, the supply of natural gas has stabilized because of conservation by existing customers. Conservation

has been practiced to such a great extent that during the 1977-78 heating season, previous natural gas curtailments were virtually eliminated and almost all customers that requested natural gas service received it. Residential customers have conserved more than 15% since 1975. On November 1, 1978, Michigan-Wisconsin Pipeline Company, which supplies approximately 90% of Wisconsin's natural gas, rolled back its September 1976 curtailment to Wisconsin utilities, based on its end-use curtailment plan on file with the Federal Energy Regulatory Commission. This meant increases in annual gas supply to Wisconsin utilities ranging from 3% to 22%, depending on the particular distribution utility. The supply of gas from Wisconsin's other major supplier, Northern Natural Gas Company, also stabilized and by the end of the biennium there were indications that both major pipeline suppliers may soon be able to increase peak-day supplies to their distribution utilities.

The cost of natural gas to all customers has continued to increase. In November of 1978, the United States Congress passed the Natural Gas Policy Act of 1978 (NGPA) which extended federal regulation of natural gas prices to the intrastate market, and also allowed for the gradual deregulation of natural gas prices. Passage of the NGPA has made more natural gas available to consumers than in the recent past; however, the price of natural gas to the end user has more than doubled in the last five years (1974-1979). The price of natural gas may double again by 1985.

On September 22, 1977, the commission issued an order in a proceeding entitled "Class A Residential Insulation Program", docket 05-GV-2, in which each Class A gas utility was directed to submit on or before March 1, 1978, a comprehensive energy conservation plan. These programs were to include all feasible and practicable conservation measures, conservation standards for extension of service and conservation rates. The commission also ordered each utility to institute an energy audit program that provided for home conservation inspections for each residential customer without direct charge. The order directed utilities to increase the scope of their consumer assistance and information programs. In addition, the order outlined incentives to encourage landlords to improve the energy efficiency of rental living units.

On March 1, 1978, each Class A gas utility submitted its proposed comprehensive energy conservation plan in accordance with the order from docket 05-GV-2. These plans included conservation standards which would be required before existing residence could be converted to natural gas spaceheating service. Conservation in new one and two-family dwellings is covered by the regulations

of the Department of Industry, Labor and Human Relations (DILHR) in Chapter IND 22, which became effective December 1, 1978.

In accordance with the Commission's order in docket 05-GV-2, the Class A natural gas utilities in Wisconsin have been performing residential audits for their customers.

## 2. Innovations and Natural Gas Pricing

a. Declining Block Rates Phased Out. In the Wisconsin Power & Light Company (WP&L) rate order issued on October 26, 1978, the PSC took major steps to promote conservation by residential, commercial and industrial customers. These steps encouraged customers to make conscious attempts to limit their usage.

The new residential rates authorized for Wisconsin Power & Light were designed to encourage efficient use of gas through charges that increase as consumption increases (Inverted Block Rates). For example, customers served by the Michigan-Wisconsin Pipeline Company system pay the following base rates: a monthly \$2.00 fixed charge and a commodity charge of 25¢ per therm for the first 100 therms, 27¢ per therm for the next 300 therms, and 31¢ per therm for any use over 400 therms. A gas heating customer uses about 1,600 therms annually and a general service customer (cooking, water heating, etc.) uses about 350 therms annually.

Federally authorized wholesale price increases are added on to the charges authorized by the PSC. These increases are passed onto customers through purchased gas adjustment clauses (PGAC's). When wholesale gas prices decrease, refunds are passed on to customers through the clause.

b. Benchmark Tariffs. The cost of fuel for heating and manufacturing plays a major role in the long range investment decisions made by large commercial and industrial firm service customers. These customers should be encouraged to buy more efficient gas using equipment because gas usually costs less than other alternate fuels (usually No. 2 fuel oil). For this reason WP&L's 118 large commercial and industrial firm service customers now receive service under a benchmark tariff. The benchmark is calculated by determining the customer's average monthly use for corresponding months in 1976, 1977 and 1978. The customer's bill is computed by multiplying the month's average usage by 26.26¢ per therm (plus the purchased gas adjustment) in the service areas supplied by the Michigan-Wisconsin Pipeline Company and 27.63¢ per therm (plus the purchased gas adjustment) in the Northern Natural Gas Company service area. Consumption in excess

of the month's average use is billed at the rate of 30¢ per therm and decreases in consumption below the average are credited to the customer at the rate of 30¢ per therm of gas conserved.

c. Interruptible Tariffs. The Commission approved a new approach to pricing interruptible gas service for Wisconsin Power & Light customers. Commercial and industrial customers on the Michigan-Wisconsin Pipeline system will have a choice between two interruptible tariffs, based on the customer's ability to evaluate the price and supply situation of the gas market. The options are:

A traditional interruptible tariff with a flat commodity charge and a minimum consumption level of 50,000 therms per year, or a flat commodity charge for at least 80% of estimated historical annual usage and an opportunity to obtain additional gas supplies on a sealed bid price basis. At the end of the biennium, no customers had chosen the second option.

### 3. Natural Gas Generic Environmental Impact Statement In Process

The PSC staff is engaged in an extensive study of the short and long-range impacts of the use of natural gas on Wisconsin's physical, economic and social environment. Information derived from this study will aid the Commission in making future decisions on natural gas rates and availability of gas to future customers. Because the information developed will be applicable to most gas cases, the study will reduce the work required to process individual gas rate and supply cases. A preliminary environmental report was issued on November 1, 1978, and the final environmental impact statement is expected to be published in April 1980.

### 4. Rules Proposed on Nonessential Gas Uses

The PSC was required by s. 196.97, Wis. Stats., (Chapter 369, Laws of 1977) to develop a rule establishing criteria for and then specifying nonessential uses of natural gas. The Legislature enacted this law in response to gas shortages experienced nationwide during the Winter of 1976-1977. On October 19, 1978, the Commission submitted to the Legislative Council proposed rules on nonessential uses of gas. Public hearings were held in early 1979.

The criteria for determining a nonessential use of natural gas the Public Service Commission should consider the following criteria: Necessity of use, availability and reasonableness of alternative fuels, public health, safety and unusual hardship factors and compatibility of natural gas use with energy policy.

In accordance with the preceding criteria the use of natural gas in the following devices or for the following purposes is considered to be nonessential.

a. Gas Lights. (The Federal Power Plant and Industrial Fuel Use Act requires the disconnection of all existing lights no later than January 1, 1982.)

b. Snow Melting Equipment.

c. Residential Swimming Pool Heaters unless provided with an active solar system which uses a solar collector with a surface area of at least 50% of the pool surface area.

d. Gas Logs.

e. Heated areas containing swimming pools, porches, workshops, garages or other areas of marginal or seasonal use unless insulated to an energy conservation standard as specified in IND 22 and IND 63, Wis. Adm. Code.

The rules also provide that the specific rule designating a non-essential use of natural gas may be modified or waived by the Commission for reasons of health, safety or unusual hardship.

#### D. TELEPHONE ISSUES

##### 1. Service

To further its goal to insure better telephone service to rural customers the Commission directed previously that there be no more than four parties on any one line. All 113 telephone utilities have complied with this mandate. The continued conversion of exchanges to one-party service has resulted in an increase from 57 one-party exchanges in June of 1971 to 220 one-party exchanges in June of 1979.

Moreover, Wisconsin telephone utilities have steadily increased their capital expenditures to provide better service. Capital expenditures in 1973 totaled 105.2 million as compared to 116.6 million in 1978.

In the biennium, the Commission acted on 111 cases, formal and informal, involving expenditures and service of telephone utilities. The Commission has been considering the application of the Footville Telephone Company to install a coaxial cable system to jointly provide telephone service and cable television plus other broad band service. A final decision has not yet been made. Also, to improve the switching of calls throughout the state, considerable activity has taken place to install modern switchboards.

## 2. Rate Cases

During this period Wisconsin's two largest telephone utilities, Wisconsin Telephone Company and General Telephone Company of Wisconsin, were authorized rate increases totaling \$35,706,000 and \$1,661,000, respectively. Rate changes were made to many services in order to better reflect service costs so that customers responsible for the cost are the ones that pay for the service.

## 3. Investigations

Three major investigations were initiated during the biennium that are still in process. Long distance services contribute millions of dollars annually to the revenues of the state's communications utilities and are used by virtually all telephone users. The Commission has started an investigation of long-distance service and Wide Area Tele-Communications Service (WATS) to look at the costs of these offerings and to determine the reasonableness of the rate levels and structures for these services.

Extended-area Service (EAS) has been an issue before the Commission in numerous cases. EAS expands the local calling area of an exchange; its cost is usually incorporated in the basic local rate. The Commission has started a general investigation of the various issues of EAS to determine if new policies should be established. The cost of pricing of EAS will also be considered. Of particular interest will be the feasibility of measured rates for local calling.

Recognizing the needs of those Wisconsin citizens who are deaf or have hearing impairments, the Commission instituted a proceeding to look at their telecommunications needs and at the availability and adequacy of current telephone services for these citizens. This proceeding has drawn considerable interest in and participation by deaf and hard-of-hearing persons across the state.

## E. WATER AND SEWER ISSUES

The Commission issued 191 water and 53 sewer rate orders in the biennium. Ten of these orders established rates for newly created water public utilities.

During the biennium, the Commission has used a water utility cost analysis for rate proceedings that provides a more accurate allocation of costs to customer classes than did the previous method. The earlier method provided a cost distribution to the basic categories of general service and fire-protection but did not result in a specific allocation of general service costs to each customer class--i.e. residential, commercial, industrial--as does the method now used. The effects of using the more accurate method appear in the bill impact analyses for recently completed cases. A typical result shows greater percentage bill increases to large-volume users than to average residential customers. In effect then, steeply declining block rates are being leveled somewhat to reflect the cost of providing service.

Sewer rates currently are based on a fixed service charge covering customer-related costs, a uniform volume charge based on volume of sewage discharged, and a surcharge for high strength sewage discharged. Prior to the use of this rate format, sewer volume charges were most commonly based on a percentage of the water bill which, in effect, provided lower unit prices for increasing levels of volume. The change in format to a uniform volume rate reflects the cost of treating sewage; the former declining-block rates, based on volume of sewage discharged, were not cost-justified. Those percentage increases to large-volume customers have been several times greater than increases to average residential customers in rate proceedings using the new format for the first time.

During the biennium the Commission authorized water utilities to undertake 87 construction projects at an estimated total cost of \$46,745,000. Included in this amount were authorizations to five municipalities and four sanitary districts to establish new water public utilities at an estimated cost \$6,093,000. The Commission also authorized sewer utilities to undertake nine construction projects at an estimated total cost \$9,969,000. The availability of state and federally-funded grants and loans was an important source of financing for water and sewer projects.

## F. FEDERAL ACTIVITIES

### 1. PSC Intervenes in Federal Cases

The Legislature has authorized the PSC to retain legal counsel in Washington, D.C. to represent the interests of Wisconsin utility customers. Through Legal Counsel, the Commission can participate directly in Federal rule making and court decisions which significantly impact the rates of gas and electricity here in Wisconsin.

a. High Island Off-shore Systems. A consortium of pipeline companies including the Michigan-Wisconsin Pipeline Company, has petitioned the Federal Energy Regulatory Commission (FERC) for rates for the High Island Off-shore System. A considerable amount of this gas goes to the Michigan-Wisconsin system so the PSC has been involved in the settlement conference on setting those proposed rates.

b. Michigan-Wisconsin Rate Case. The Michigan-Wisconsin Pipeline Company (which supplies about 90% of Wisconsin's natural gas) has applied to the FERC for a rate increase. If approved, these rates would substantially affect the price of gas in Wisconsin. The Commission is actively seeking to reduce the increase in natural gas prices proposed by Wisconsin's principal natural gas pipeline supplier.

c. Wyoming Interstate Natural Gas System. Michigan-Wisconsin Pipeline Company has invested about \$60,000,000 in developing a Wyoming gas field and has applied to FERC to build a pipeline into the field. Other pipeline companies have applied to FERC to transport this gas and the choice could affect both the price and the amount of gas delivered to Wisconsin. Potential supplies to the state could be substantial. The PSC will intervene in support of Michigan-Wisconsin's application.

d. Northern Natural Gas Curtailment Case. The Northern Natural Gas Company curtailment plan has been one of the most extensively litigated cases before FERC. Although the plan has been revised because of the Natural Gas Policy Act of 1978, there still remains several issues which could significantly affect the prices and availability of gas to Wisconsin. The PSC has been opposing any settlement that could create curtailment problems within Wisconsin.

e. Northwest Alaskan Pipeline Company. This is an application to prebuild part of the proposed Alaskan Pipeline

System to deliver gas from Canada to the United States. Wisconsin now receives a substantial amount of Canadian gas from the Midwestern Gas Transmission Company system. The availability of gas to the prebuilt line and hence the availability of gas to the Midwest system may be limited by the National Energy Board of Canada. The question is which route would be most economical and would supply the most gas to Wisconsin. The PSC has been represented at pre-hearing conferences.

f. Incremental Pricing. Under the Natural Gas Policy Act of 1978, FERC is to promulgate incremental gas pricing rules that will cause certain large industrial customers to pay prices that reflect the cost of certain high cost gas. The rule would protect residential and other small users from higher gas prices. The PSC is concerned that if no ceiling is placed on these prices industrial customers may switch to alternate fuels. The PSC's representative has been arguing its position that statewide exemption should be granted to allow states to adopt incremental pricing to their own situations.

g. Cost of Service Data Requirements. The Public Utility Regulatory Policy Act (s.133) authorized FERC to collect cost-of-service and load research data from all electric utilities of significant size. Because this could cost each utility \$2,000,000 to \$3,000,000 per year, the PSC has argued that:

1. Certain utilities should be exempt if their state regulatory agencies certify that the requirements are being met.
2. Utilities should be able to borrow customer class load research information from one another.
3. Every utility should reflect the PSC's input.

h. Area Rate Clauses. (Natural Gas Policy Act). FERC has decided that the legislatively-increased natural gas prices for producers permit triggering of area rate clauses. Those clauses allow producers to increase the price charged to the pipelines. Wisconsin has joined the argument that these clauses should be enacted only when the FERC approves price increases during the term of the contract between the producer and the pipeline. Because there are about 30,000 such contracts, the PSC has petitioned the FERC in docket 79-22 to establish a systematic method for protesting the triggering of these clauses.

i. Wisconsin Participates in Louisiana First-Use Tax. Attorney General Bronson La Follette is currently representing Wisconsin in a federal suit against the Louisiana first-use tax. Applied to natural gas found offshore and shipped through Louisiana, this tax could mean a \$10,000,000 hike in Wisconsin's annual gas cost.

j. Wisconsin Participates in California Case. The Wisconsin Attorney General's office, at the request of the Commission and both houses of the Wisconsin Legislature will also intervene in what could be a precedent setting case on a state's right to determine the reliability and economics of nuclear power. In light of the Wisconsin's PSC moratorium on nuclear power planning the California District Court decision could threaten the Commission's authority to responsibly review electric utility Advance Plans and applications to build new electric generating plants.

The PSC believes that the California Court's overly broad language preempting the state from denying nuclear plant application for economic reasons could adversely affect the state's ability to protect utility customers.

## 2. National Energy Act

a. Public Utilities Regulatory Policies Act (PURPA). PURPA requires state utility regulatory agencies to consider rate reform and gives the Federal Energy Regulatory Commission (FERC) and consumers intervention rights in rate reform proceedings. Within two years each state commission is to determine whether the following standards are appropriate.

i. A ban on master metering for new electric hook-ups.

ii. Procedures for reviewing increases in automatic adjustments clauses.

iii. Utility information to customers concerning rate schedules and customer usage.

iv. Establishment of procedures for determining electric service.

v. A ban on ratepayer financed advertising of a promotional or political nature.

Wisconsin has conducted formal proceedings on these standards.

This act also gives FERC the power to order utility energy sharing agreements through interconnections, wheeling and pooling. FERC will establish guidelines requiring utilities to buy cogenerated power, as a means of encouraging industries and small power producers to sell electric power to utilities. These guidelines

will stipulate that utilities sell power to cogenerators and small power producers at rates which do not discriminate against these users.

b. Natural Gas Policy Act (NGPA). Federal price controls have been imposed on intrastate gas for the first time. However, all controls on newly discovered interstate and intrastate gas will be lifted on January 1, 1985. Under this act, the ceiling price of new gas went from \$1.50 per 1,000 cubic feet to \$2.09. Through April 20, 1981, this ceiling will increase each year by the inflation rate plus 3.7%. Annual increase after this date until decontrol will correspond with the inflation rate plus 4.2%.

The incremental pricing section of this act is generally intended to pass on to industrial gas users the increased cost of gas resulting from decontrol, at least until the industrial customer is paying a gas price equivalent to the price of oil. FERC will decide under which circumstances the equivalent gas price will be based upon the price of No. 2 or No. 6 oil. Small industrial boiler fuel facilities, agricultural users, small commercial users, schools, hospitals and utilities are exempted from these incremental prices.

The act also empowers the President to declare a natural gas emergency in times of shortage. This allocation authority would not extend to intrastate gas.

c. Power Plant and Industrial Fuel Use Act. New power plants and most new industrial facilities built after April 20, 1977, will be required to burn coal as a boiler fuel instead of natural gas or oil. After January 1, 1990, natural gas may not be used as a primary energy source in existing power plants, unless gas was used during 1977. DOE could also require power plants to stop using oil.

The use of natural gas for existing residential outdoor lighting will be banned beginning January 1, 1982. No new outdoor lighting has been permitted since the effective date of this act. Existing industrial and commercial lights will be refused service about one year after the enactment date of this act.

d. National Energy Conservation Policy Act (NECPA). Although utilities are restricted from actually installing energy-saving devices they are required to provide their residential customers with energy-saving information and some financial assistance for certain conservation measures. Utilities may lend up to \$300.00 to their customers for these purposes. Utilities

may install furnace efficiency modifications, clock thermostats and load control devices and they must offer home energy audits.

e. Energy Conservation Tax Credits. Taxpayers are eligible for a 15% nonrefundable credit on the first \$2,000.00 spent on insulation, storm windows and other specified energy-saving devices. Homeowners and renters who install solar, wind or geothermal devices are also eligible for a 30% credit on the first \$2,000.00 of outlay and 20% on the next \$8,000.00. To qualify for the tax credit the devices must be installed between April 20, 1977, and December 31, 1985.

An additional 10% nonrefundable investment credit is available to businesses (other than utilities) that install energy-saving equipment and certain fuel switching equipment. This portion of the law is designed to encourage industry to convert from oil and natural gas to coal and alternative energy sources.

