

E-017/M-89-399 APPROVING CONSERVATION IMPROVEMENT PROGRAM AND
REQUIRING ADDITIONAL FILINGS

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Darrel L. Peterson	Chair
Cynthia A. Kitlinski	Commissioner
Norma McKanna	Commissioner
Robert J. O'Keefe	Commissioner
Patrice Vick	Commissioner

In the Matter of the Implementation of an
Energy Conservation Program for Otter Tail
Power Company

ISSUE DATE: December 26, 1989
DOCKET NO. E-017/M-89-399

ORDER APPROVING CONSERVATION
IMPROVEMENT PROGRAM AND
REQUIRING ADDITIONAL FILINGS

PROCEDURAL HISTORY

On August 8, 1989 Otter Tail Power Company (Otter Tail or the Company) made its annual Conservation Improvement Program (CIP) filing under Minn. Stat. § 216B.241 (1988) and Minn. Rules, parts 7840.0200 *et seq.* The Company proposed to fund seven individual CIP projects during the 1990 CIP year, at a total CIP budget of \$528,922.

The Department of Public Service (the Department) filed detailed comments on the Company's proposal, and the Company revised its filing to meet several of the Department's concerns. Remaining concerns are discussed below.

No other party commented on the Company's filing.

FINDINGS AND CONCLUSIONS

I. Statutory Background

The CIP statute, Minn. Stat. § 216B.241 (1988), requires all public utilities with annual operating revenues exceeding \$50,000,000 to make significant investments in and expenditures for energy conservation improvements. CIP utilities are required to make annual filings describing proposed conservation projects for the coming year. Minn. Rules, part 7840.0500. The statute provides that such projects should generally cost less than it would cost the utility to produce or purchase the amount of energy saved. The statute also requires the Commission to give special consideration to

the needs of renters and low income households when acting on CIP filings.

II. An Overview of the Program Proposed by the Company

The Company's proposed program consists of seven projects, described below.

Energy Check Up Project -- This is a continuation and modification of an older project, the Residential Conservation Service Project. The project is free, is open to residential and non-profit commercial customers, and consists of a comprehensive energy audit. The auditor visits the home or building to be audited, examines the structure, determines the customer's energy use patterns, and provides an analysis of the building's conservation potential. This analysis addresses all conservation measures the customer could undertake, e.g., major weatherization, caulking and weatherstripping, thermostat control, and includes recommendations on which measures would be most practical for that particular customer.

The Company expects the project to serve 50 single family homes, 20 multifamily dwellings, and 50 non-profit commercial structures, typically churches. Approximately 30 of the participating households are expected to be rental households. The proposed budget is \$14,928.

Commercial and Industrial Audit/Consultation Project -- This project, too, is a continuation of an existing project. It is offered free of charge to large commercial and industrial customers and consists of a comprehensive energy audit and consultation. Services are delivered by a two-person team who analyze the customer's current usage levels and patterns and identify areas of potential conservation.

The auditors provide analysis and recommendations on all aspects of the customer's energy use, from load management to lighting and insulation levels. They examine the conservation potential of a wide range of devices and materials, including heat pumps, heat exchangers, piping insulation, and stratification fans.

The Company's long term goal is to provide these services to all 579 of its large commercial and industrial customers. The Company anticipates providing 30 audits this year and has budgeted \$24,162 for this year's project.

Community Energy Councils Project -- This is a cooperative project between Otter Tail and local Community Energy Councils. Community Energy Councils are formed to promote conservation and to deliver conservation services within specific communities. Some Councils serve a single municipality, while others encompass an entire county or a group of municipalities.

Community Energy Councils are eligible to receive state funding based on the amount of money they are able to raise locally. Otter Tail provides much of this local funding.

Last year, the project provided free energy audits to residential and small commercial customers. This year's project has been modified to provide more comprehensive services, such as caulking, weatherstripping, and pipe insulation, when customer interest and need warrant them.

The Company expects this project to serve 687 households and 110 commercial customers in the areas served by the Fergus Falls, Kandiyohi County, and Tri-Community (Perham, New York Mills, Frazee) Community Energy Councils. The Company anticipates that approximately 15% of participating households will be rental households. Community Energy Councils strive to serve low income people, and the Company expects this project to be effective among low income customers. Since participants are not required to disclose financial information, however, the Company could not quantify expected participation by low income households. The proposed budget for the project is \$112,062.

House Therapy Project -- This project will provide comprehensive conservation and weatherization services to low income customers whose primary heating system is electric. Local Community Action Programs will deliver the services, which will begin with an energy audit and basic conservation information.

The project will provide free weatherization services and materials, and will perform tasks such as insulating foundations and rim joists, installing ceiling fans, replacing inefficient water heaters with efficient models on off peak control, providing Residential Demand Control devices, and moving baseboard thermostats to eye level. The project's goal is to address the conservation needs of the these households on a one-time basis in a thoroughgoing, highly effective way.

The Company expects the project to serve at least 78 households and has budgeted \$150,000.

Residential Demand Control Project -- This is a continuing project which allows Otter Tail to automatically interrupt service to appliances selected by the customer during periods of peak demand. The goal is to reduce the utility's need to purchase or generate additional power during peak periods, while reducing the customer's energy expenses.

To participate in the project, customers must acquire a Residential Demand Control unit. The Company provides these units under a 48-month lease, with monthly payments of \$12, after which the customer may purchase the unit for \$1. Installation costs range from \$150 to \$250, with the Company providing a \$100 cash rebate upon installation. The Company covers metering and radio receiver costs without charge. Participating customers may select the appliances to which service

will be interrupted, and they qualify for special Residential Service - Controlled Demand rates.

The Company projects that 85 new households will join the project this year, bringing total project participation to 1,310 households. This year's proposed budget is \$46,520.

Street Lighting Project -- In this project the Company proposes to replace mercury vapor street lights in participating municipalities with high pressure sodium lights. The new lights provide 50% more illumination using 25% less electrical energy.

The Company proposes to install the new energy-efficient street lights in 22 communities and has budgeted \$143,550.

Commercial Lighting Rebate Project -- This project will provide rebates to commercial and industrial customers who install high efficiency lamps or ballasts in their lighting systems. Rebates are available to customers constructing new lighting systems, retrofitting old ones, or replacing lamps and ballasts in existing systems with high efficiency lamps and ballasts.

The Company anticipates at least 250 project participants during 1990. The proposed budget is \$47,700.

III. Commission Action

Target Budget for Ballast Replacement Established -- The Company's original filing proposed to eliminate rebates on high efficiency ballasts from the Commercial Lighting Rebate Project. The Company reasoned that new federal efficiency standards for ballasts made such rebates superfluous.

The Department opposed eliminating the rebates, maintaining they could still play an important role in encouraging commercial and industrial customers to install ballasts exceeding the federal standards. The Company reconsidered and proposed to retain ballast rebates, which would be offered only for ballasts in the upper 10% efficiency range. The Company proposed a target budget of \$10,000 for this portion of the rebate project.

The Commission agrees it is important to retain ballast rebates, since ballasts hold considerable conservation potential. Limiting rebates to the most efficient ballasts is also a sound strategy, which should result in steady upward movement of the average efficiency levels of targeted equipment. Finally, the Commission agrees with the Company that \$10,000 is a reasonable budget for ballast rebates. Replacing ballasts is a costly procedure, and the number of customers undertaking replacement, even with the rebate incentive, will probably not be high. The \$10,000 budget proposed by the Company should be adequate.

Commercial/Industrial Efforts to be Increased -- The Department expressed concern that the Company's 1990 CIP plan would result in a reduction in CIP spending for commercial and industrial projects. The Department also pointed out that, while 60% of the Company's load is commercial/industrial, the Company proposed to spend only 15% of its CIP budget on conservation in the commercial/industrial sector.

The Commission agrees that the conservation potential of the commercial and industrial sector is substantial and must be addressed in any comprehensive conservation program. The Company has agreed to re-examine its efforts in this area and to develop and file a proposal to expand them. The Commission will require this filing on or before March 1 and will expect an increased financial commitment to these customer classes of approximately \$25,000.

Interim Evaluation Schedule -- The Department recommended a specific schedule for the Company to submit interim project evaluations. The Company requested flexibility. The Commission does not believe a fixed schedule is necessary, given the Company's longstanding CIP commitment and past efforts to submit timely filings. Furthermore, the Company's size does not permit a full-time CIP staff, creating additional need for flexibility. The Commission encourages the Company to follow the recommended schedule as closely as possible, and is confident this will be sufficient.

The Commission is particularly interested in the cost-effectiveness data contained in interim evaluations and would emphasize the importance of providing actual measured results, whenever possible, in place of the projections used in initial cost effectiveness assessments.

Miscellaneous Revisions to Original Filing -- As discussed above, the Company agreed to miscellaneous changes in its Conservation Improvement Program in consultation with the Department of Public Service. The Commission approves these changes and will require filings to implement them.

The Company will require higher efficiency standards than originally proposed for replacement

water heaters provided through the House Therapy Project. The Company will include cost effectiveness estimates in all project proposals filed in the future. The Company will include in future project proposal filings estimates of the project's effect on peak and average consumption. The Company will continue to work with the Department, the Commission, and other interested parties to refine the cost effectiveness analyses and models used in evaluating CIP projects for electric utilities.

Evaluation of the Program as a Whole -- The Commission finds that the Conservation Improvement Program proposed by the Company, as modified herein, meets the requirements of the CIP statute and rules. It represents a significant investment and expenditure on the part of the Company, it gives due consideration to the needs of renters and low income ratepayers, and it meets prevailing standards of cost-effectiveness. Each consideration will be discussed in turn.

Significant Investment and Expenditure -- Minn. Rules, part 7840.1150 sets forth factors to be considered in determining whether a Company's CIP meets the statutory requirement of being a significant investment in and expenditure for conservation. The Company's CIP fares well when evaluated under these criteria.

At least 1,382 customers, slightly over 2.5% of all Otter Tail customers, will receive conservation services under this year's program. The Company expects a winter peak demand reduction of 1,226.6 kW and a summer peak demand reduction of 706.5 kW as a direct result of the program. Estimated energy savings attributable to the program over the next 20 years are 45,930,000 kilowatt-hours.

The program's total budget, as modified in this Order, would constitute approximately 0.68% of the Company's budgeted 1989 gross revenues. Such monetary amounts and participation levels imply the existence of the serious commitment to conservation contemplated by the CIP statute.

Furthermore, the program itself demonstrates a serious and comprehensive effort to deliver effective conservation services within the Company's service area. It is geographically balanced, providing services throughout the Company's service territory. It serves diverse customer classes: residential, commercial, industrial, and community. It provides a wide variety of services, from audits to weatherization services to partial interruption of residential service during peak periods.

Clearly, the Company's program will make a meaningful contribution to energy conservation in Minnesota. The Commission finds that the Company's CIP meets the "significant investment and expenditure" requirements of Minn. Stat. § 216B.241 (1988).

Special Consideration for Rental and Low Income Households -- The CIP statute requires that the Commission, when acting on CIP filings, "give special consideration to the needs of renters and low income families and individuals. . . ." Minn. Stat. § 216B.241, subd. 2 (1988). The Commission believes that Otter Tail's CIP makes adequate provision for the special needs of renters and low income households.

Approximately 585 low income households and 106 rental households will receive services under the program. One project, the House Therapy Project, is targeted exclusively at low income people. This project will provide comprehensive energy services free of charge, will be administered by community agencies with close ties to the low income community, and will be targeted solely at space heating customers, who clearly have the most pressing conservation needs.

The Commission concludes that the Company's CIP meets the statutory requirement of demonstrating special consideration for the needs of rental and low income households.

Cost-Effectiveness Concerns -- The CIP statute provides that the Commission may require a utility to fund an energy conservation improvement whenever the cost of the improvement will be less than the cost of producing or purchasing the amount of energy the improvement will save. The statute also provides, however, that the Commission shall require all utilities with annual operating revenues exceeding \$50,000,000 to make energy conservation improvements, whether such improvements can meet this cost-effectiveness test or not. Minn. Stat. § 216B.241, subd. 2 (1988).

Evaluating cost-effectiveness has proven to be one of the most challenging features of the CIP review process. The statutory test, "total cost to the utility less than the cost to the utility to produce or purchase an equivalent amount of new supply of energy," has sparked controversy, particularly over whether "total cost" does or does not include revenues lost due to energy saved.

The Commission has acted on the assumption that conservation and the development of cost-effectiveness methodologies should proceed simultaneously. This was intended to allow the Commission to apply the best available knowledge on cost-effectiveness in acting on each year's CIP filings, while giving cost-effectiveness investigators actual data on the effectiveness of various conservation strategies. Electric utilities have therefore been operating Conservation Improvement Programs while working with the Department, Commission staff, and one another to refine useful cost-effectiveness models. This consultative process is continuing.

The Company evaluated the projects using the Load Management Strategy Testing Model (LMSTM). The model provides results from the participant, non-participant, and overall perspectives.

The Department used four cost-effectiveness tests: the cost comparison test, the utility test, the participant test, and the revenue requirements test.

The Commission believes these tests and models provide a serviceable, comprehensive framework within which to examine the cost-effectiveness of the proposed projects. Using more than one test realistically reflects the complexity of cost-effectiveness issues, and the necessity to examine cost-effectiveness from more than one perspective to gain an accurate understanding of the costs and benefits of any particular project.

In summary, the Company and the Department have subjected Otter Tail's proposed projects to several tests and have found them within acceptable cost-effectiveness norms. The Commission

agrees, and would add that even these tests do not succeed in quantifying all the benefits likely to result from these projects.

As the Commission has noted in previous Orders, the energy savings low income ratepayers realize through participation in CIP projects often translate directly into higher quality of life through lower arrearages, less frequent need for Fuel Assistance, and fewer utility-related financial crises. Similarly, residential CIP participants report increased comfort levels and higher property values as important results of their participation. In the Matter of the Implementation of an Energy Conservation Program for Minnegasco, Inc. ORDER APPROVING CONSERVATION IMPROVEMENT PROGRAM AND REQUIRING ADDITIONAL FILINGS (September 19, 1988), at 10.

CIP projects also benefit society generally, in ways which are no less real for being unquantifiable. They clearly raise public and utility awareness of conservation issues. They have ecological benefits. They benefit the local economy by allowing the diversion of energy dollars for other purposes. They help create the potential for long term price stability by limiting the need for new supplies. They provide data on usage patterns and particular conservation strategies which will increase in importance as conservation moves up on the national, state, and local agendas.

The Commission concludes that the projects approved herein meet reasonable and prevailing cost-effectiveness standards.

ORDER

1. The Commission approves the Company's CIP proposal, as modified herein. The approved plan consists of the following projects funded at the levels indicated:

Energy Check Up Project	\$ 14,928
Commercial and Industrial Audit and Consultation Project	24,162
Community Energy Councils Project	112,062
House Therapy Project	150,000
Residential Demand Control Project	46,520
Street Lighting Project	143,550
Commercial Lighting Rebate Project	47,700
New or Expanded Commercial/Industrial Project	<u>25,000</u>
 TOTAL	 \$563,922

2. Within 30 days of the date of this Order the Company shall file revised efficiency standards for replacement water heaters provided through the House Therapy Project.

3. Within 30 days of the date of this Order the Company shall file a revised rebate schedule for the Commercial Lighting Rebate Project specifying the criteria applicable to rebates on the purchase of high efficiency ballasts.
4. On or before March 1, 1990 the Company shall make a filing proposing to expand its commercial/industrial CIP efforts. This filing may propose one or more new projects or it may propose to expand an existing project or projects.
5. On or before May 1, 1990 the Company shall file status reports on all projects approved herein. Those reports shall contain at least the following information for each project: number of actual participants compared to the number of projected participants, identification of any barriers to participation and strategies for eliminating them, number of participants who are low income persons, number of participants who are renters, expenditures to date compared to approved total budget, and a complete discussion of any unforeseen difficulties encountered in administering the project.
6. In future filings requesting project approval, the Company shall include estimates of the project's cost-effectiveness. When approval is requested for continuing projects, cost-effectiveness estimates shall be based on actual experience under the project whenever possible.
7. In future filings requesting project approval, the Company shall provide estimates of each project's effect on peak and average consumption.
8. To the maximum extent practicable the Company shall ensure that all CIP participants have free choice of the devices, methods, materials, sellers, installers, and contractors used in making conservation improvements to their property.
9. The Company shall continue to work with the Department, the Commission, and other interested parties to refine the cost effectiveness analyses and models used in evaluating CIP projects for electric utilities.
10. The Company shall serve the Department and any other party requesting service with all filings made hereunder. The Department and any other commenting party shall file any comments on such filings within 15 days of service.
11. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Lee Larson
Acting Executive Secretary

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